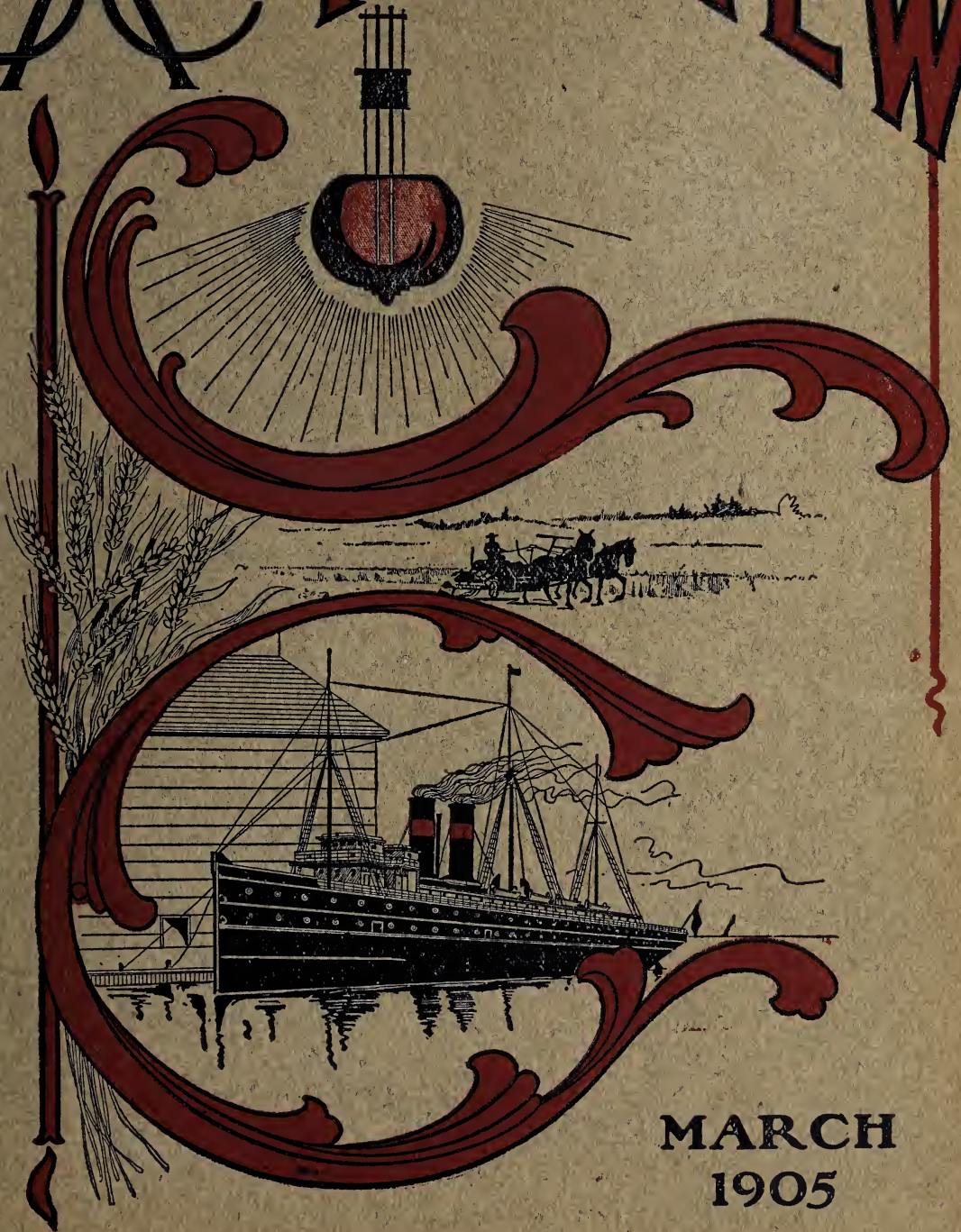


THE OAC REVIEW



MARCH
1905

Tubulars Stand Great Test

We insist upon truth in Tubular advertisements. We prove Tubulars will do what we claim before we claim it. Tubulars are more durable than all other Separators. We guarantee this. Back of this guarantee is absolute knowledge of Tubular quality. Actual tests of Tubulars surprise the doubters every time. Here is a hard test: On Aug. 2, 1904, we attached a No. 9 Dairy Tubular to a mechanical driving apparatus that turns the machine as a man would. This Tubular was not specially selected, but was taken at random from the many finished Tubulars in our warehouse. This Tubular, at date of writing, has been in constant operation, every working day, for three and one-half months. It has run fifty hours a week for fifteen weeks—and is still running. Below we give facts and figures of the test, up to Nov. 15, showing what wonderful work this Tubular has done, and how easily it has done it.

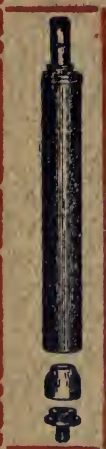


Dairy Tubular Separator



A HARD TEST

Machine under test	- - -	No. 9 Tubular.
Capacity	- - - - -	900 lbs per hour.
Hours in operation	- - - - -	750.
Total time adjusting	- - -	Not any,
Total time oiling	- - - - -	Not over three minutes
Total repairs	- - - - -	Not any.
Total oil used	- - - - -	Not over two quarts.
Revolutions of crank	- - - - -	1,972,575.
Revolutions of bowl	- - - - -	720,000,000.
Number pounds separated	- - -	675,000.



Dairy Tubular Bowl

675,000 lbs of milk is about equal to the yield of ten average cows for a period of 11 years, 6 months and 23 days. This test is unequalled. It confirms all we claim for the Tubular—is positive guarantee of quality. It shows that Tubulars are capable of doing work equal to at least eleven years service in a ten cow dairy, with no expense for repairs and with the use of not over two quarts of oil. The test still continues. This Tubular will greatly surpass its performance up to the present. At time of writing (Nov. 15) it shows almost no wear. We will keep you informed about the doings of this machine.

Send for Catalogue F

The Sharples Co, P. M. Sharples
Chicago, Ill. West Chester, Pa.

THE NATIONAL

Cream

Separator

That the National is the Best for all practical purposes, is being continually demonstrated and is shown by its increasing popularity throughout all the Provinces of the Dominion.

Try the National and see for yourself that what we say is correct.

Miss Rose, of the Travelling Dairy in the Maritime Provinces, uses The National.

Send for Catalogue and
"Hints on Butter Making
and Modern Dairying."

CAPACITY

Style No. 1A, 450 to 500 pounds per hour.

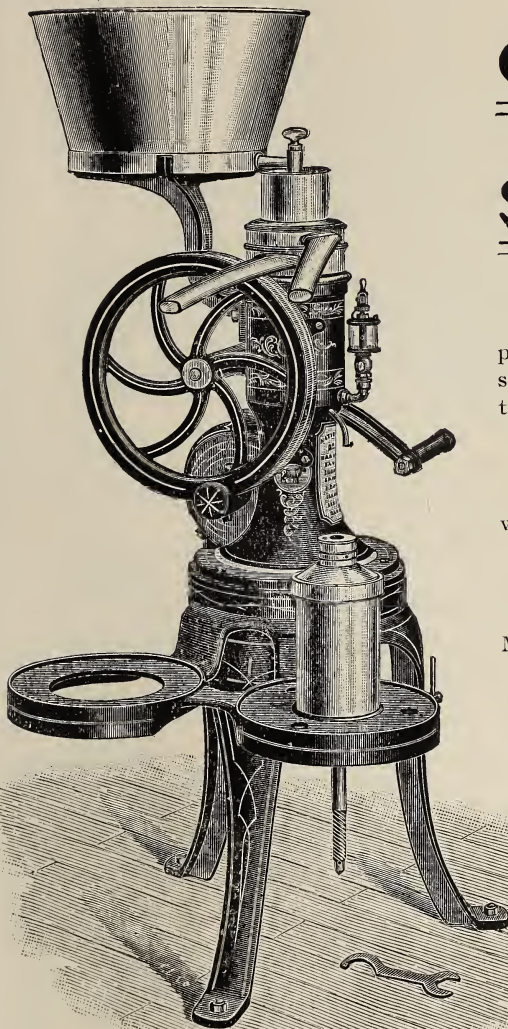
Style No. 1, 330 to 350 pounds per hour.

Style No. B, 250 pounds per hour.

The Raymond Mfg Co. of Guelph, Limited

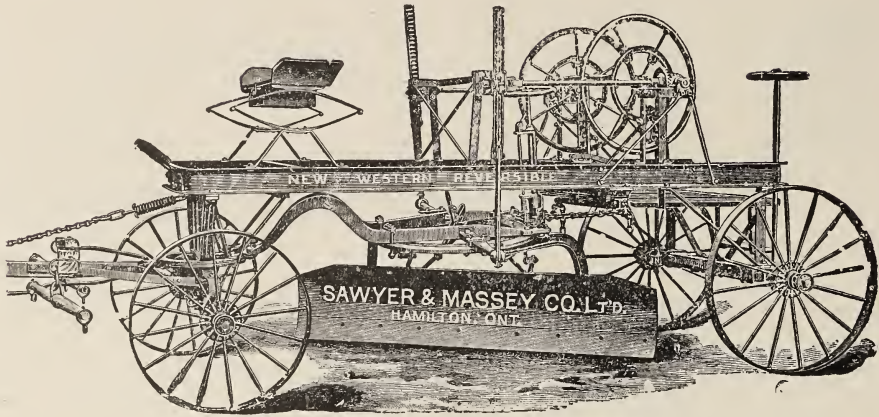
GUELPH - ONTARIO

Please mention the O. A. C. Review when answering advertisements.



To The Young Men of Canada —→

The Science of Road Making by Machinery offers unlimited scope for useful and profitable study and sure returns for its intelligent application.



Our new Road Machine Catalogue fully explains the latest and most efficient machines for the making and improving of ROADS under any and all conditions, including

Crushers, Elevators, Screens and Mounted Bins for Same, Stone Spreading Wagons, Dump Carts, Graders, Rollers, Plows, Scrapers, Moulds for Concrete Tile, Etc.



**Moulds for Making
Concrete Drain Tile**

at the will of the operator, from 4 to 36 inches in diameter.

Write for Descriptive Catalogue and Prices.

It is a Good Thing to Know

That Scientific Drainage is the first and most important step towards securing permanent roads and with this end in view we have perfected our

New Combination Moulds

which rapidly produce CONCRETE TILE with either PLAIN or TELESCOPIC JOINT

Sawyer & Massey Co., Ltd.
Road Machine Department
HAMILTON
CANADA



More Than **1200**



Young Men and Women are well trained each year to fill good positions and to win independence through the excellent courses given in our well-known school.



The

Central

of

Toronto

Business College



We employ from 18 to 20 teachers, and provide splendid equipment including 110 typewriting machines, and conduct a school which is first class in every respect. Because of this and of our ability to produce good results for our students, we solicit the patronage of every bright, energetic young person who desires a practical business education. Our Catalogue is free. Ask for it. Enter any time, no vacations. Address



W. H. SHAW,

PRINCIPAL.



ESTABLISHED 1817

BANK OF MONTREAL

HEAD OFFICE, MONTREAL

Incorporated by Act of Parliament. Capital, all Paid-up, \$14,000,000.00. Rest, \$10,000,000.00
Undivided Profits, \$478,821.85.

BOARD OF DIRECTORS

RT. HON. LORD STRATHCONA AND MOUNT ROYAL, G. C. M. G., President.

SIR GEO. A. DRUMMOND, K. C. M. G., Vice-President.

SIR WILLIAM C. MACDONALD

A. T. Paterson, Esq.

E. B. Greenshields, Esq.

R. B. Angus, Esq.

James Ross, Esq.

R. G. Reid, Esq.

Hon. Robt. MacKay.

E. S. CLOUSTON, General Manager. A MACNIDER, Chief Inspector and Superintendent of Branches. H. V. MEREDITH, Assistant General Manager and Manager at Montreal. F. W. TAYLOR, Assistant Inspector, Montreal. F. J. HUNTER, Assistant Inspector, Winnipeg. MONTREAL—C. W. DEAN, Assistant Manager

BRANCHES IN CANADA

ONTARIO—Almonte, Belleville, Brantford, Brockville, Chatham, Collingwood, Cornwall, Deseronto, Fort William, Goderich, Guelph, Hamilton, Hamilton, Sherman Ave., Kingston, Lindsay, London, Ottawa, Par.s, Perth, Peterboro, Picton, Sarnia, Stratford, St. Mary's, Toronto, Toronto, Yonge St. branch Wallaceburg.

QUEBEC—Montreal, West End branch, seigneurs St. branch, Point St. Charles branch; Quebec.

LOWER PROVINCES—Chatham, N. B., Fredericton, N. B., Moncton, N. B., St. John, N. B., Amherst, N. S., Glace Bay, N. S., Halifax, N. S., Sydney, N. S., Yarmouth, N. S.

MANITOBA AND NORTH WEST—Brandon, Man., Gretna, Man., Portage La Prairie, Man., Winnipeg, Man., Calgary, Alta., Edmonton, Alta., Indian Head, Assa., Lethbridge, Alta., Raymond, Alta., Regina, Assa.

BRITISH COLUMBIA—Armstrong, Greenwood, Nelson, New Deuve., New Westminster, Rossland, Vancouver, Vernon, Victoria.

IN NEWFOUNDLAND—St. John's—Bank of Montreal, Birchy Cove (Bay of Islands)—Bank of Montreal.

IN GREAT BRITAIN—London—Bank of Montreal, 22 Abchurch Lane, E. C., Alexander Lang Manager.

IN THE UNITED STATES—New York—R. Y. Hebdlen and J. M. Great, agents, 59 Wall St. Chicago—Bank of Montreal—J. W. DeC. O'Grady, Manager. Spokane, Washington—Bank of Montreal.

BANKERS IN GREAT BRITAIN—London—The Bank of England, The Union Bank of London and Smith's Bank, Ltd. The London and Westminster Bank, Ltd. The National Provincial Bank of England, Ltd. Liverpool The Bank of Liverpool, Ltd. Scotland The British Linen Company Bank and Branches.

BANKERS IN THE UNITED STATES—New York—The National City Bank. The Bank of New York, N. B. A. National Bank of Commerce in New York. Boston—The Merchants National Bank. J. B. Moors & Co. Buffalo The Marine Bank, Buffalo. San Francisco—The First National Bank. The Anglo-Californian Bank, Ltd.

General Banking Business Transacted. Farmers' Notes Discounted. Interest at Best Current Rates Allowed on Deposits in Savings Department.

H. LOCKWOOD, Manager at Guelph.

Dominion Bank

GUELPH.



Capital Paid Up - \$3,000,000
Reserve Fund and
Undivided Profits - \$3,565,000

A General Banking Business transacted

Savings Bank Department in connection with all offices of the Bank.

Deposits of \$1.00 and upwards received



Manager Guelph Branch
H. C. SCHOLFIELD

The Canadian Bank of Commerce.

Established 1867. Head Office, Toronto.

B. E. WALKER, - General Manager.

Capital (Paid Up) - - - \$8,700,000
Rest, - - - - - 3,000,000

GUELPH BRANCH.

A general banking business is transacted.
Bankers for the Dominion Live Stock Association and O. A. C.

Farmers' notes discounted
Drafts issued payable at all points in Canada and the principal cities in the United States, Great Britain, France, Bermuda, etc.

SAVINGS BANK DEPARTMENT.

Deposits of \$1.00 and upwards received and current rate of interest allowed.

Interest added to the principal at the end of May and November in each year.

Special attention given to Collection of Commercial Paper and Farmers' sales notes.

J. M. DUFF, Manager.

Agricultural College

GUELPH,



ONTARIO

A


LARGE STAFF and first-class equipment, furnishing the kind of education needed by young men intending to live on the farm or follow any kind of practical or professional pursuit connected with farming.



REGULAR COURSES.

- 1.—Two Years' Course for Associate Diploma, September 15th.
- 2.—Four Years' Course for B. S. A. Degree, September 15th.



SPECIAL COURSES.

Intended for those who cannot spend the time or money necessary to take the regular Courses.

- 3.—Dairy Course, January 4th.
- 4.—Two Weeks' Course in Judging Live Stock and Seed Grain, January 7th.
- 5.—Four Weeks' Course in Poultry Raising, January 8th.
- 6.—Courses in Nature Study, Manual Training and Domestic Science, September 15th.

SEND FOR CIRCULAR GIVING FULL INFORMATION AS TO COST, TERMS OF ADMISSION, Etc.

G. C. CREELMAN, B.S.A., M.S.,

PRESIDENT.

SAVE MONEY.

Young men wanting to save for the future can do it best by an Endowment Policy in the Manufacturers Life.

Besides laying by for the future and getting good returns on your investment, your life is insured during the period of the investment for the full amount you set out to save.

Write for Rates.

THE MANUFACTURERS **LIFE INSURANCE CO'Y.**

Toronto, Canada.

Guelph Business College

Masonic Block, 109-115 Upper Wyndham St.

The Teaching and Training of the Guelph Business College have been cordially endorsed by members of the Clergy of seven different denominations; and students from twenty-three states, provinces and territories have attended its classes.

Its Successful Graduates include expert book-keepers, court stenographers, bank managers, business managers, merchants, manufacturers, farmers, civic, government and railway officials, journalists, preachers, lawyers, school-inspectors, etc.

There is no better time to enter than now, as there are no vacations; and classes are in active operation throughout the year. Call at the College Office or Address,

M. MacCORMICK, B. A.,
Principal.

Dairy School

There are five courses during the year.

CREAMERY COURSE

For Factory Butter-makers only, commences Dec. 1st, and closes Dec. 21st, 1904.

FACTORY COURSE

For both Butter and Cheese making, commences Jan. 4th and closes March 24th, 1905.

FARM DAIRY COURSE

For Ladies and Farmers' Sons, commences Jan. 4th, and closes March 24th, 1905.

COURSE FOR DAIRY INSTRUCTORS

April 3rd to April 10th, 1905.

SUMMER COURSE

For Butter or Cheese Makers, or those who wish to learn, May 1st to Oct. 1st, 1905.

The Farm Dairy Course includes lectures and practical work in the Poultry Department and illustrated lectures in Domestic Science.

H. H. DEAN,

In Charge of Dairy School.

Remember! When wanting a first-class Field
Glass that we keep the finest.

A Postal Card will bring Illustrated Catalog.

We submit on application designs and prices
for PRIZE CUPS, MEDALS or PINS for any
competition.

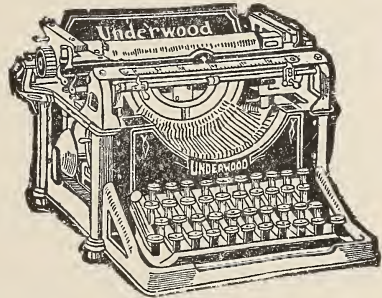
156

Yonge St.

Ambrose Kent & Sons
Limited.

Toronto
Ont.

THE
UNDERWOOD
TYPEWRITER



THE UNDERWOOD

"WRITING IN SIGHT."

It makes no difference what Typewriter you may use, or have used, the machine you
will eventually buy is the **Underwood**.

SOLE CANADIAN AGENTS

United Typewriter Co., Ltd.

Head Office - TORONTO

Please mention the O. A. C. Review when answering advertisements.



MORANG'S MODERN TEXT BOOKS

Morang's Modern Nature Study.

By S. Silcox, B. A., D. Paed., Inspector Public Schools, St. Thomas, and O. J. Stevenson, M. A., English Master, Collegiate Institute, St. Thomas.
 "It contains a mine of material and a fulness of illustration that cannot but be very helpful."

332 Pages, 262 Illustrations, 12 Colour Plates. Price 75 Cents.

Nature Study in Elementary Schools. First and Second Reader.

By L. L. W. Wilson, Ph. D., Philadelphia Normal School.
 The first book is intended to supply the place of magazines for children, yet is by no means for amusement only. The Second is for the help of teachers.

16 Mo, 260 Pages. Illustrated. Price 35 Cents Each.

Handbook of Nature Study.

By D. Lange. Instructor in Nature Study in the Public Schools of St. Paul, Minnesota.
 This book is intended to point out some of the material which may be made the basis of profitable lessons in Nature Study.

12 Mo, 339 Pages 60 Illustrations. Price \$1.00.

Nature Study for Grammar Grades.

By Wilbur S. Jackman, A. B., Department of Natural Science, Chicago Normal School.
 The aim of this book is to formulate a few of the problems which present themselves to the student of nature, and to aid in their solution.

12 Mo, 407 Pages. Price \$1.00.

The Study of Animal Life.

By J. Arthur Thomson, M. A., F. R. S. E., Lecturer on Zoölogy, School of Medicine, Edinburgh.
 This book treats the life of animals, their internal activities, their forms and structure, and the theory of animal life.

12 Mo, 329 Pages, 176 Illustrations. Price \$1.20.

Insect Life.

By J. H. Comstock, Professor of Entomology in Cornell University.
 An introduction to Nature Study and a guide for teachers, students and others interested in out-of-door life.

12 Mo, 349 Pages, 18 Full Page Coloured Illustrations, 295 Illustrations in Text. Price \$1.75.

Animals.

By David S. Jordan, M. S., M. D., Ph. D., LL., Vernon L. Kellogg, M. S., and Harold Heath, Ph. D., all of Leland Stanford Junior University.
 This book contains two parts, "Animal Life" and "Animal Forms."

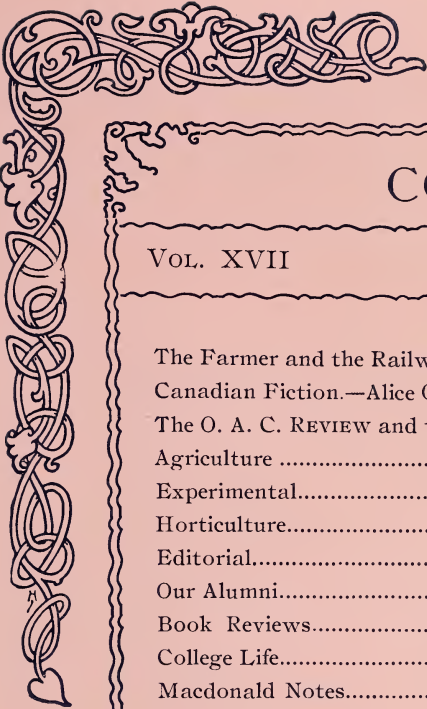
12 Mo, 587 Pages, 316 Illustrations. Price \$1.80.

Plants.

By John M. Coulter, A. M., Ph. D., University of Chicago.
 This book comprises two parts—which may be obtained separately—"Plant Relations" and "Plant Structures."

12 Mo, 603 Pages, 513 Illustrations. Price \$1.80.

Morang & Co. ^{Ltd.} Toronto



CONTENTS.

VOL. XVII

MARCH.

No. 6.

	PAGE
The Farmer and the Railway.—H. J. Pettypiece.....	327
Canadian Fiction.—Alice G. Rowsome, B. A.....	334
The O. A. C. REVIEW and the Public School.—J. H. Smith, P. S. I.....	338
Agriculture	341
Experimental.....	346
Horticulture.....	352
Editorial.....	357
Our Alumni.....	359
Book Reviews.....	363
College Life.....	365
Macdonald Notes.....	370
Athletics	373
Locals.....	377

ADVERTISING.

- Agricultural Implements and Sundries :—Pages 380, ii, xxii, xxv, xxxvii, xl, xlvii, xlix, l, li, lii, liii, liv, lviii.
- Railways, Banks, Insurance and Financial :—Pages iv, vi, viii*b*, ix, x, xi, xii, xiii, xxiv. xlii*b*, lvi.
- Newspapers and Journals :—Pages xliii, xliv.
- Business Houses for you in Guelph :—Pages xxvii, xxviii, xxix, xxx, xxxi, xxxii, xxxiii, xxxiv, xli, xlii, liv.
- Household Furnishings and Sporting Goods:—Pages xiii, xiv, xlvi.
- Educational :—Pages v, vi, xviii, xxv.
- Cream Separators and Dairy Supplies :—Both inside and outside Cover, and pages i, xvii, xxi, xiv.
- Seedsmen and Farmers' Supplies:—Pages xv, xvi, xix, xx, xxvi, xxxiv, xxxix, xlvi, xlvii, li, liii, lvi, lvii.
- Books and Book Publishers, Kodaks, Engravers, Typewriters and Office Specialties, Builders and Contractors and Jewellers :—Pages vii, viii, ix, xiv, vv, xxxviii, xliia, liv.
- Crown Lands :—Page xxxvi.
- Live Stock :—Page xxxv.



THE SAME OLD STORY

OF SUBSTANTIAL GAINS MADE IN EVERY
DEPARTMENT OF ITS BUSINESS DURING
1904 BY ◊ ◊ ◊ ◊ ◊ ◊



TO WIT :

Business in force Dec. 31, 1904	- - - -	\$40,476,971
Gain over 1903	- - - -	2,889,419
Cash Income for 1904	- - - -	\$ 1,725,309
Gain over 1903	- - - -	164,239
Total Asset, Dec. 31, 1904	- - - -	\$ 8,220,530
Gain over 1903	- - - -	937,372
Surplus, Dec. 31, 1904, (Company's Standard)	-	\$ 772,073
Gain over 1903	- - - -	170,920
Surplus, Dec. 31, 1905, (Government Standard)	-	\$ 1,049,400

This Company has the **LOWEST EXPENSE RATE** of any Canadian Life Company. In many other important respects it has few if any equals.

HEAD OFFICE, WATERLOO, ONT.

ROBERT MELVIN, PRESIDENT.	A. HOSKIN, K. C., HON. JUSTICE BRITTON, } VICE-PRESIDENTS
GEO. WEGENAST, MANAGER	W. H. RIDDELL, SECRETARY

George Chapman ✦ **General Agent**
McLEAN'S BLOCK, GUELPH

W. H. JONES

*Fire, Life and
Accident Insurance*

Agent for

All the Leading
Steamship Lines

Office—St. George's Square

'PHONE 216

Full Particulars on Application

GUTHRIE & GUTHRIE.

Barristers, Solicitors and Notaries,

DOUGLASS ST., GUELPH.

Donald Guthrie, K. C.

Hugh Guthrie, K. C.

GUELPH AND ONTARIO INVESTMENT AND SAVINGS SOCIETY,

SAVINGS BANK DEPARTMENT

Deposits of \$1.00 and upwards taken.

Highest current rates allowed.

J. E. McELDERRY, Secy.-Treas.

The Guelph Radial Railway Co.

TIME TABLE

Cars leave College Landing for City as follows:

A. M.—6.25, 6.45, 7.05, 7.30, 7.50, 8.15, 8.35, 8.55, 9.20, 9.40, 10.00, 10.25, 10.45, 11.05, 11.30, 11.50.

P. M.—12.15, 12.35, 12.55, 1.15, 1.40, 2.00, 2.20, 2.45, 3.05, 3.30, 3.50, 4.15, 4.35, 5.00, 5.25, 5.50, 6.15, 6.40, 7.00, 7.20, 7.45, 8.05, 8.25, 8.45, 9.10, 9.30, 9.50, 10.15, 10.35, *10.55.

Returning, Cars leave St. George's Square 10 minutes later.

* Saturday Night Only.

The Canada Stationery Co.

**Lithographers & Embossers
Commercial and Legal Stationers**

OUR SPECIALTIES—

Wedding Invitations	•	•	Copper Plate Printing
Visiting Cards	•	•	General Society Work

The Invitations, Programs, Etc., used at the O. A. C. Conversat were furnished by us.

Write for Quotations

The Canada Stationery Co.

8 LOMBARD STREET



TORONTO



The Great International Route

Reaches through its Western Connections
via the following Gateways

Detroit, Port Huron and Chicago.

ALL POINTS IN

Missouri

Kansas

Nebraska

Colorado

Arkansas

Texas

Arizona

California



Tickets, Folders, and all Information from Agents of the Grand Trunk Railway System, or

G. E. WALKER, C. P. & T. A., Guelph.

J. D. McDONALD, District Passenger Agent, Toronto.



**CANADIAN
PACIFIC**

CANADIAN WEST GRAIN CROP

WHEAT	- - -	60,000,000	Bushels
OATS	- - -	40,000,000	"
BARLEY	- - -	10,000,000	"
		110,000,000	Bushels

Raised on 5,313,654 acres

**The estimated value of Wheat alone is
\$41,250,000.00**

**Over 100,000,000 Acres
Good Land yet for Settlement**

And hundreds of miles of new railways will be
built there in 1905.

Above figures from "*Winnipeg Free Press.*"

For maps, descriptive pamphlets, settlers' passage and
freight rates, call on nearest Canadian Pacific Agent,
or write to C. B. Foster, Dis. Pass. Agent, Toronto.

J. HEFFERNAN,
City Agent.

A. C. BROWN,
Depot Agent.

WHY?

CANADA'S FAMOUS TRAIN

The
“Maritime Express”

leaving Montreal at 12.00 noon,
 daily except Saturday

DOES THE BUSINESS

Between Montreal, Quebec, St. John, Halifax
 and the Sydneys, with connection for

Prince Edward Island and Newfoundland.

BECAUSE
 ITS DINING AND SLEEPING CAR SERVICE IS
 UNEQUALLED
 THAT IS

WHY

Write for Time Tables, Fares, Etc., to
Toronto Ticket Office, 51 King street E.

Through Tickets at all Grand Trunk Stations and
 Ticket Offices.

LOVE'S ATHLETIC SUPPLIES

**Discount to
Students**

**Write for
Catalogue**



Hockey Sticks

Mohawk	\$4.50 Doz
Mic-Mac	\$4.50 Doz
Spalding	\$4.50 Doz

Skates ✖

Lunn's, per pair	\$4.50
Regal, per pair	\$3.60
Mic-Mac, per pair,	\$2.70



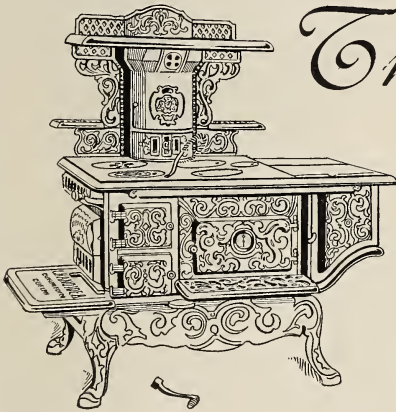
Goal 
 **Sticks**

Sweaters
Stockings, Etc.



HARRY H. LOVE & CO.

189 Yonge Street, Toronto



The Art of Cooking

IS KNOWING HOW AND HAVING THE MEANS

The Macdonald Institute supplies the Knowledge.
We supply the means.
In order to put into practice modern ideas of Cooking, it is necessary that you should have a first-class, up-to-date Range.

GRAND IDEA RANGES

are lavishly nickled; their operation is very simple; and they are Guaranteed by the manufacturers to give perfect satisfaction in every respect.

Visit our Warerooms and examine the Grand Idea.

Don't fail to procure a copy of our Booklet, "The Art of Cooking." It's free for the asking. Remember the name "Grand Idea"; "The Range that never fails,"

Guelpch Foundry Co.

LIMITED

Office and Warerooms, Paisley Street, Guelpch, Ontario.

Please mention the O. A. C. Review when answering advertisements



—BY OUR—

Rapid Roller Copier

IS THE ONLY RATIONAL WAY TO COPY LETTERS.

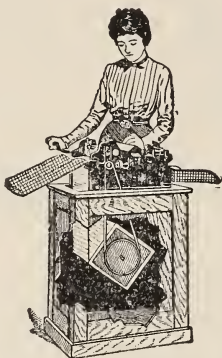
In the first place, all letters are copied after they have been signed.

2. No carbon paper or letter press, books and stand to buy.

3. Shows all changes made in original dictation.

4. A straight saving of \$1.25 per 1,000 letters, besides time and trouble.

Write for circular No. 302 explaining in detail particulars of the Quickest, Easiest and Cheapest Letter Copier.



OUR COPIER

The Office Specialty Mfg. Co., Ltd.

97-105 Wellington St. West, Toronto
Near York Street

Factories, Newmarket.

CANADIAN OFFICE & SCHOOL FURNITURE CO. LIMITED

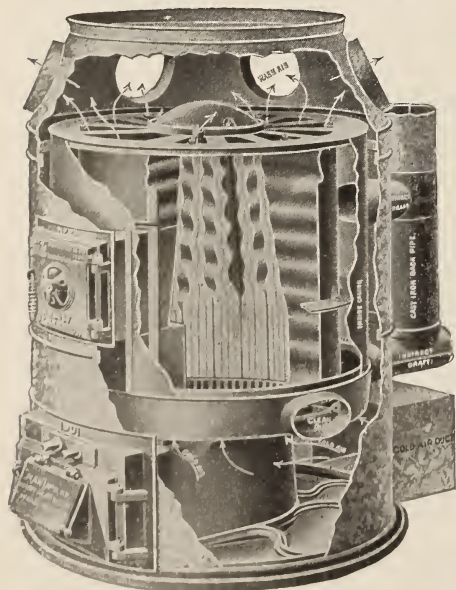
PRESTON, ONT

OFFICE, SCHOOL, CHURCH, & LODGE FURNITURE

FINE BANK, OFFICE, COURT HOUSE AND DRUG STORE FITTINGS
A SPECIALTY

SEND FOR CATALOGUE

HEAT MAKERS FUEL SAVERS **KELSEY CORRUGATED WARM AIR GENERATORS, Patented.**



Fifty per cent. increase in Sales in Canada in 1904 as compared with 1903.

Kelsey's assure to the users :

- Most Heat with Least Fuel.
- All Rooms Evenly Warmed.
- Pure, Mild, Warm Air.
- Freedom from gas and smoke
- No heat radiated in cellar
- No Waste of Heat in Smoke Flue.
- Efficient, Economic, Healthful Results

The "KELSEY" is the only "warm air Generator" and is not in the "How Cheap" Class.

Direct Contracts Made. Proper Results Guaranteed.

If interested write for our Kelsey Booklet

THE JAMES SMART MANUFACTURING CO. LIMITED.
WINNIPEG, MAN. BROCKVILLE, ONT.
Exclusive Canadian Makers.

Please mention the O. A. C. Review when answering advertisements.

BELL = PIANOS

High Class

Piano-Players, Organs,

MANUFACTURED BY

Bell Piano & Organ Co., Limited, GUELPH, ONTARIO.

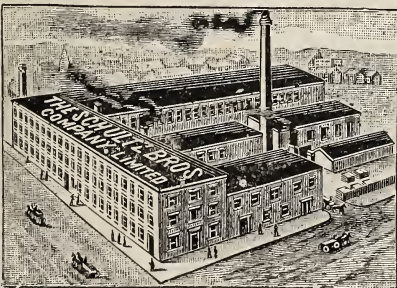
CATALOGUE FREE.

ASBESTOS GOODS
INSULATING PAPERS
PREPARED ROOFING
ENGINE PACKING
ETC., ETC.



CLING-SURFACE FOR BELTS
SMOOTH-ON FOR IRON REPAIRS
**Eureka Mineral Wool
and Asbestos Co'y.**
74 York St., Toronto.

ESTABLISHED OVER 30 YEARS



There is no Time to Lose

SPRING WILL SOON BE HERE

Better make up your Spring Order and mail it to us NOW. Our stock of Flower Pots and etc. is the largest and most complete for the Spring Trade.

Our Prices are the Lowest

STRONG

POROUS

DURABLE

and

LIGHT

CHEAP



L. D. Phone 1557.

We are the quick shippers. We can supply you with Hangers for Hanging Baskets at lowest prices. Drop us a Post Card for Price List

THE
Foster Pottery Co'y.
LIMITED
HAMILTON - CANADA

Builders and Contractors.

Manufacturers of Builder's Supplies,
Packing Boxes and Novelties.

WE SOLICIT YOUR PATRONAGE.

Contractors of the Massey Hall and Library,
Macdonald Institute, Macdonald Residence and
Consolidated School buildings, all of Guelph.

THE SCHULTZ BROS. CO.

LIMITED.

BRANTFORD, CANADA.

EVERYTHING

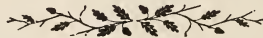


**For Garden,
Farm and
Greenhouse**

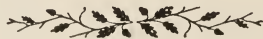


**THE BEST SEEDS THAT GROW
CANADA'S GREATEST SEED STORE**

For Size and Quality our Bulbs
are Unequaled. Our Stock of
Roses and Plants is Unsurpassed
Clematis Vines, Shrubs, Small Fruits, Etc.



Illustrated Catalogue Free Send for one now



THE STEEL BRIGGS CO., Limited
TORONTO, CANADA

The O. A. C. Review

Published Monthly during the College Year
by the Students of the Ontario Agricultural College, Guelph, Canada.

THE DIGNITY OF A CALLING IS ITS UTILITY.

Vol. XVII.

ONTARIO AGRICULTURAL COLLEGE,
MARCH, 1905.

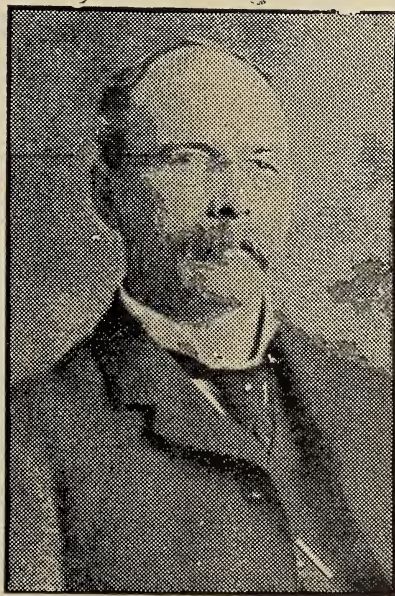
No. 6

The Farmer and the Railway.

BY H. J. PETTYPIECE, EX-M.P.P.

IN Canada under present conditions, and under the conditions which must obtain for many years to come, the two great elements making for progress are Agriculture and Transportation Facilities. All other interests, manufacturing, mercantile, professional, etc., can be depended upon to take care of themselves and keep pace with the great national advancement which is bound to result. As to the farmer and the carrier, the success and progress of the one depends so much on the other, that any conflict or antagonism between the two would appear to be unnecessary, if not injurious to both. Yet the operating conditions under which these two great interests are carried on are so different that in many ways there is a strenuous conflict between them.

Agriculture is in the hands of many thousands of individuals each depending on his own exertions, their number being so great and their work so diversified that there is very little actual cooperation among them. On the other hand the railways, which control transportation, are in the hands of a few well-organized and immensely wealthy corporations. The result is that the railways have practically control of the whole situation, and use it to their own advantage, and to the great disadvantage of the farmer, and will continue to do so unless restrained by stringent legislation.



H. J. Pettypiece.

So far, in Canada very little has been done in the way of passing and enforcing such legislation. True, within the past few years, the Dominion Parliament has placed on the Statute Books several good Acts, and has appointed a

Commission to deal with rates, &c.; but the great work of putting these Acts into force, and passing and enforcing other very necessary Acts has yet to be accomplished.

THE QUESTION ELSEWHERE.

It may be interesting to take a glance at what is being done in some of the neighboring States of the Union, where the struggle between the railways and the people has been going on in various ways for some years past. Such questions as the control of passenger and freight rates, taxation of railways, rights of individuals and municipalities as to drainage, road and farm crossings, fencing, compensation for injuries inflicted, train service, supply of cars &c., have been and are still being fought out at the polls and in the Courts in nearly every State in the Union, with an intensity that has never been approached nor even attempted in Canada. As a result of the great struggles the farmers in many of the States are enjoying rights which cannot be obtained in any other way, and which the farmers of Canada hardly dream of asking for. In Michigan a Board of Railway Commissioners, appointed by the State Legislature, has absolute control of the railways in the State in almost every feature of their operations. By this Board the location of railway lines is determined, passenger and freight rates are regulated, the rights of the people in regard to drains, fences, crossings, killing of stock, fires from engines &c., are protected; the make-up and the running of trains are controlled, the guarding of street crossings imposed on the railways, and any other matters are dealt with. Another State Board imposes over \$4.38 per mile in taxes on the 8572 miles of railway in the State, the assessed value of the railways in that

State being \$222,106,000 and the amount of taxes \$3,756,149.42, or nearly 17 mills on the dollar.

The Annual Report of the Michigan Commissioner of Railways deals with almost everything pertaining to the operation of the railways in the State, and consequently contains a vast amount of useful and interesting information. That portion of the report dealing with "Complaints and Petitions" is especially interesting and useful, and would make entertaining reading for the Ontario farmer or other person who finds that his rights as a citizen are ignored by the railway corporations.

Here are a dozen extracts from the Michigan report, selected from more than a hundred such paragraphs, and given verbatim et literatim;

(1) Feb. 25. Petition was received from a large number of citizens of the village of Durand asking for additional protection at the East Main street crossing of the Grand Trunk Railway in that village. After an inspection of the premises it was decided that additional protection was necessary, and an order was issued requiring the Grand Trunk Railway Company to station and maintain a flagman at the crossing.

(2) May 8. A communication was received from the village clerk of the village of Edmore calling attention to the alleged dangerous condition of the Main street crossing of the Pere Marquette Railroad in that village. Upon investigation it was found that while a flagman was stationed at the crossing a portion of the time, he was not on duty at all times while train movements were being made. An order was therefore issued requiring that the crossing should be flagged at all times while train or switching movements were being made over the same.

(3) August 20. A complaint was received from citizens of Lincoln Township, Berrien County, on account of the alleged dangerous condition of the high-

way crossing of the Pere Marquette Railroad in that township. After an inspection of the premises, the railroad company was ordered to re-construct the crossing with new plank and to remove certain trees that obstruct the view of approaching trains, and such order was promptly complied with.

(4) September 23. Petition was received from a large number of citizens residing in the village of Parma, and vicinity, asking for protection at several highway crossings of the Michigan Central Railroad in and near that village. After making a personal inspection of the premises an order was issued for an electric alarm bell at the crossing east of the station at Parma, and also for an alarm bell at the Butler crossing three miles west of Jackson and for the flagging of trains over the crossing west of Parma.

(5) November 5. Copy of a resolution adopted by the common council of the village of Capac was received asking that additional protection be provided at the Main street crossing of the Grand Trunk Western Railway in that village. After a personal inspection of the premises, an order was issued requiring the Grand Trunk Western Railway Company to station and maintain a flagman at the Main street crossing of its line in the village of Capac, as requested.

(6) May 6. A complaint was received from Mr. J. W. Grubb of Federman against the Ann Arbor Railroad Company on account of its failure to maintain a suitable farm crossing upon his property near Federman. This matter was taken up with the railroad company and an order was issued for the construction of the desired crossing.

(7) May 14. A communication was received from Mrs. Maria Mariman of Flint, calling attention to the failure of the Grand Trunk Western Railway Company to provide a suitable crossing upon her farm in Flint Township, Genesee County. This matter was taken up with the railroad company, an inspection of the premises was made and the company was required to construct and maintain a crossing as requested by the complainant.

(8) August 9. A communication was received from Mr. Oliver H. Wattles with reference to the construction of a farm crossing across the tracks of the Grand Trunk Western Railway Company about five miles west of Lapeer. After a personal inspection of the premises it was decided that a farm crossing should be constructed and an order for the same was issued.

(9) March 23. A communication was received from Mr. L. E. Lott, making complaint against the Pere Marquette Railroad Company on account of backing water on to his premises at Elmdale. After a personal inspection of the premises in question, the railroad company was required to provide a suitable water course under its tracks at this point.

(10) March 29. Complaint was received from Mr. Loran M. Hutchinson of Ashley against the Ann Arbor Railroad Company on account of obstructing the county drain at that point. This matter was taken up with the railroad company and orders promptly issued for the extension of the opening which had proved insufficient.

(11) May 28. The attention of the department was called to the manner in which certain trains on the Michigan Central between Lansing and Saginaw are made up, the passenger part of the combination car being next to the engine. The matter was taken up with the railroad company and it was agreed that a stop should be put to such objectionable practice.

(12) May 28. Complaint was received from Mr. Adam Herber of Elmdale, against the Pere Marquette Railroad Company on account of the blocking of highway crossings at that place. This matter was taken up with the railroad company and orders were issued putting a stop to this illegal practice.

It is hardly necessary to picture the treatment such petitions and complaints would receive in Ontario. Under present conditions the autocratic power of the great railway corporations is such that the most deserving appeals from muni-

cipal corporations or individuals for their rights in regard to protection of crossings, drainage, train service, rates &c., are utterly disregarded; and the serfs in Russia are not more tyrannically treated by their rulers than are the people of this country by the railway czars, who ride it rough-shod over those whose toil and industry furnishes them with their best-paying traffic.

UNFAIR TREATMENT.

One of the wrongs under which the people here suffer is due to the preference given to what is known as through freight traffic, causing continual loss and inconvenience to all classes, but more especially to the farmers. These unfavorable conditions are to a great extent due to the remorseless power exercised in the States over even the railways. The greatest and most injurious of these corporations is the gigantic Beef Trust, which has in the past few years exercised its power with such destructive and demoralizing results that the highest legal authorities in the United States have been called on to suppress the monster. A few of the charges against the Beef Trust are:

"Increased in the last three years the expenses of every household in America. Impoverished and ruined by its operations hundreds of farmers and stockmen. Constantly violated national and state law with impunity. Bought up legislatures and individual politicians. Controls with iron hand, the price of one-half the food consumed by the nation. Caused many suicides and bank failures. Precipitated strikes. Annihilated industries. Monopolized everything it could lay its hands on that would return a profit."

In addition to the terrible indictment contained in the above nine charges, it is

pointed out in an article in "Everybody's Magazine" for February that the Beef Trust has absolute control of all the railways which carry the enormous quantities of freight shipped by the Trust. Briefly, this control of the railways is exercised as follows:—Each railway company over whose lines the Trust ships goods from Chicago, Omaha, Kansas City and other western cities to the seaboard is compelled to accept a fixed amount per car, (the cars being owned by the Trust) for the haul to the seaboard and return, be the route chosen by the Trust long or short. Then each railway company is bound to pay to the Trust a rebate of three-quarters of one cent per mile of the route over which the cars belonging to the Trust are hauled: and when the cars are not returned to the shipping point within a specified time a rental is charged for the cars. Small competitors were bought out or squeezed out, and the big monopoly took control of the buying and selling price of the bulk of the food products exported to Europe, and consumed at home.

HOW IT AFFECTS ONTARIO.

"But" the reader may ask, "what injurious effect do the operations of the Trust have on the Ontario farmer?"

Both directly and indirectly these operations have a most disastrous effect. The great Canadian railway system on which the Ontario farmer has to depend mostly to get his grain, beef, pork, cheese, butter, eggs, fowl and other products to market is, like the U. S. railways, controlled by the Trust. Having one of the longest routes between the western shipping points and the seaboard, this Canadian line gets more of the traffic than the shorter lines, because the longer the route the greater the amount of rebate paid back to the Trust.

For instance, the distance between Chicago and Portland, via the Grand Trunk is 1138 miles, and from Chicago to Baltimore via the Baltimore and Ohio road is 860 miles. Each road gets the same fixed amount for the haul of each car, irrespective of the length of route. A car hauled over the 1138 miles from Chicago to Portland would rebate to the Trust \$8.51, while one hauled from Chicago to Baltimore would rebate only \$6.45, a difference of \$2.06 per car in favor of the longer route. Under ordinary and legitimate circumstances, no expense would be spared to secure the shortest possible route, but here are conditions under which the shipper makes it to his advantage to use the longer route. In order to comply with the dictation of the Trust, the Canadian line must devote its greatest energies to getting the cars belonging to the Trust to the seaboard and back as quickly as possible. To accomplish this, the local traffic in Ontario receives second consideration, and often a poor second at that. In many instances express trains must yield right of way to the through freight trains owned by the Trust. The best motive power is used in hauling Trust trains, while the local traffic, both freight and passenger, is trailed along by old, worn-out and out-of-date locomotives. Very often more time is taken in carrying local freight from one point to another in Ontario than is taken in the run of the Trust cars from Chicago to Portland. But the inconvenience and frequent loss to which the Ontario farmer is thus subjected is small compared with the loss he sustains by being compelled to meet the unfair competition of the Trust in the world's market; because the Trust handles not only beef, but all kinds of perishable products.

Two years ago, Mr. A. F. McLaren,

M. P. for North Perth, the famous cheese manufacturer, stated in the House of Commons that the freight charges paid in one year to the railways for carrying Ontario exports of cheese, butter, bacon, apples and cattle to the seaboard was more than one million dollars in excess of the amount paid for carrying the same quantity of the same products from the Western States to the same seaports.

The British market determines the gross returns and the cost of reaching it must be borne by the producer. Cheese was exported by way of Montreal to the extent of 50,000 tons, and the combined railway and steamship charges were \$3.50 per ton more than the Americans were required to pay, which made a loss of \$175,000. The aggregate shipment of butter by Montreal was 10,000 tons, and the excess of freight rates by land and water was \$4.00 per ton, or \$40,000 in all. On 50,000 tons of bacon and hams, the charge was \$3.00 per ton in excess of that by the American route, a loss of \$150,000. There were 270,000 barrels of apples shipped by the Canadian route on which there was an overcharge of 40 cents per barrel, or \$108,000. The discrimination in the rate on cattle was \$4.00 per head, which on the 46,000 head shipped by Montreal, amounted to \$184,000. These make a total loss of \$656,000 on five kinds of farm produce. If this were all, it would be a serious matter warranting official attention, but Mr. McLaren estimates that there was sufficient freight forced to the American lines through the lack of Canadian facilities, and thus subjected to the additional cost of a long haul by rail to swell the loss to \$1,000,000. Other comparisons show the discrimination practiced by Canadian railways. The rate on cattle from Chicago to Montreal is only 25 cents per cwt., while from the counties of

Lambton, Huron and Grey, it is 30 and 33 cents. On a carload of cattle sent from Forest, Lucknow or Kincardine to Montreal, the rate per head would be \$1.25 higher than on a carload sent from Chicago to Montreal.

Whether one rate is too high, or the other too low, is hard to say; in either case the discrimination against the Ontario farmer is unjust and oppressive, and nothing short of legalized robbery. The iniquity of the situation is intensified when it is remembered that the people of this country have given in cash and land grants an amount equal to \$19,000 per mile to aid in building the railways which are now being used to thus discriminate against them. No person will urge for one moment that the Canadian railways should not secure all they can of the freight traffic of the continent; but that the railways, which have been practically built by the generosity of the Canadian people, should give their first consideration and best energies to placing them at such a great disadvantage with foreign competition in the world's market is simply intolerable.

SHARING TAXATION.

Another matter in which the Ontario farmer bears an unjust burden when compared with the railway is that of taxation. Every \$1000 worth of farm property in Ontario is assessed at \$450.00, and is taxed \$4.60. Every \$1,000 worth of railway property, even under the Act of 1904, is taxed but \$1.30. A considerable portion of the taxes paid by the farmer goes to meet the obligations incurred in granting aid to the railways which escape their fair share of taxation. The worst feature of this phase of the question is that in some instances the earnings of the Ontario portions of through railways are used to pay the

taxes on other portions of the same system in the States.

Take one or two instances of the great difference in the amount of taxes paid in Ontario and in the neighboring States by some of the railways operating both in Ontario and in those States. A Grand Trunk train starting from Chicago on its 1138 miles journey to Portland with a Beef Trust load of cars runs 25 miles in Illinois, over a railway line which pays \$1500 per mile in taxes; 85 miles across Indiana over a line paying \$800 per mile; 224 miles through Michigan over a line which pays (this year) \$900 per mile; one mile through the Michigan end of the St. Clair tunnel which pays \$29,000; then one mile through the Ontario end of the tunnel which pays only \$730 in taxes; through Ontario from Sarnia to Montreal, 503 miles, the taxes on which come to about \$80 per mile; through Quebec 129 miles, where the taxes are \$75 per mile; through Vermont, New Hampshire and Maine to Portland, 170 miles over a line paying an average of \$260 per mile in taxes. Of the 1138 miles between Chicago and Portland, the 505 miles in the different States named pay \$380,300 in taxes, or an average of \$753 per mile, while the 633 miles in Ontario and Quebec pay \$50,645, or an average of \$80 per mile.

The Michigan Central line from Chicago to Buffalo, 535 miles, has 284 miles in Illinois, Indiana and Michigan, and 226 miles in Ontario. The 284 miles in the three States named pay about \$1800 per mile in taxes, while the 231 miles in Ontario pay less than \$60 per mile. Yet the passenger rate in the States is two cents per mile, and in Ontario three cents per mile.

The Canadian Northern, from Port Arthur to Winnipeg, 430 miles, has 43

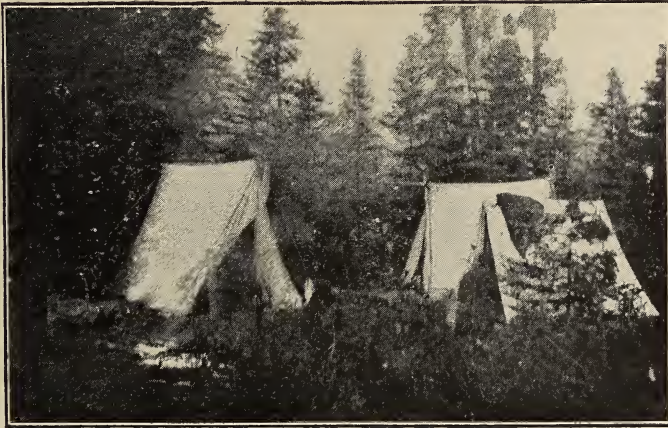
miles in Minnesota, which pays to that State more taxes than the other 387 miles pays in Ontario and Manitoba.

These few samples show how the rail-ways escape taxation here.

What is the remedy? Legislation, both Dominion and Provincial, of a

character that will control rates, impose fair and equitable taxes, and otherwise regulate the operation of all public-serving corporations.

In a subsequent article the results of State control of rates, &c., will be dealt with.



Canadian Fiction.

BY ALICE G. ROWSOME, B.A.



LEADING American author, in one of his early books, writing at Niagara and standing on his own side of the river, says, with compassionate sententiousness,—“I look across the cataract to a country without a history.” He was looking into the emptiness of his own mind; for where could we find a young country into whose history have been crowded so many notable deeds and striking events? Our whole life as a nation, short as it is, is instinct with romantic adventure and picturesque figures; the painted warriors of the west, the boisterous voyageurs, the patient Acadian exiles, and the sturdy U. E. Loyalists. These are the very best subjects for fiction and Canadian writers are now beginning to realize the great possibilities that lie in them. A bibliography of Canadian fiction, published in 1904, contains the names of some four hundred writers, and, while some of the people mentioned have written perhaps but one novel or short story, and, while some of the productions are hardly worthy to be ranked as literature, there are still many of whose achievements in the past Canadians may be proud and whose promise for the future is bright.

Fiction has been the latest branch of literature to develop in Canada and in the English section later than in Quebec. Perhaps Richardson's *Wacousta*, which appeared in 1833 may be considered rather as history than fiction but it is

really a good novel containing an excellent picture of the siege of Detroit. In 1877 appeared, *The Golden Dog*, by Kirby, which was for a long time considered the best Canadian novel and which showed considerable literary skill. It was, however, Sara Jeannette Duncan who was first recognized by the world as a Canadian novelist. She began her literary career as a journalist, writing under the pseudonym of Garth Grafton and the bright interesting vein of charming humor of her first book, *A Social Departure*, won immediate popularity. Soon after the appearance of this book, she went to India, where the scenes of a great many of her later books have been laid, her only Canadian story being *The Imperialist*. Since then, writers of stories have grown very numerous in Canada and we shall not be able to do more than notice briefly a very few of the most outstanding ones, passing over with mere mention such names as Haliburton, Agnes Machar, Jean McIlwraith, Oxley and Hickman.

When Canadian fiction is mentioned, probably the first name to occur to the popular mind is that of Gilbert Parker, and, up to the present, he is undoubtedly one of the leaders in excellence of matter and style. A Canadian by birth and education, he has however, been in England since 1890, after which time all his books have appeared, with the exception of some plays and an adaptation of *Faust*, 1888. He is one of the many of Canada's writers who have sought in

England or the United States more favorable conditions for literary work than they have found in their own country. His novels, however, unlike those of Grant Allen or Robert Barr, are so thoroughly Canadian in plot, scene and spirit that we can with justice claim him. In *Pierre and His People*, published in 1892, and its sequel, *An Adventurer of the North*, 1895, we have a collection of short stories, centering around the hero Pierre which reveal to us the land of the North West as a land of romance and stirring adventure. The plots of his novels are interesting and well worked out, his characterisation is bold and clear and his descriptions are good. Since 1892 he has published fourteen novels, the latest of which, *The Ladder of Swords*, shows traces of hasty work. Some of his best are *Mrs. Falchion*, *The Translation of a Savage*, *The Battle of the Strong*, *The Right of Way*, and *The Seats of the Mighty*, the last being probably the best known.

The Rev. Charles W. Gordon, at present a clergyman in Winnipeg, finds time amid his clerical duties to write some good novels, published under the well-known pen name, Ralph Connor. He was educated at Toronto University and after a course in theology at Knox became a missionary in the Canadian North West; and there among those devoted men, fighting for civil order and righteousness, he has found the heroes of some of his novels. In his first books, *Black Rock*, *The Sky Pilot* and his latest one, *The Prospector*, he gives vivid pictures of the life in our western mountains and prairies. The character of the missionary appears in each one of them and he shows how he must be full of resource, broad-minded and open-hearted to draw these men who are not to be caught by the ceremonies and amenities

of eastern religion. For the character and scenes of his two other books, *The Man from Glengarry* and *Glengarry School Days*, he has drawn on his experience in the county of his birth and has given a strong picture of the simple, wholesome lives of the able-bodied, religious men of the Scotch-Canadian district of Glengarry. The atmosphere of his books is strong and invigorating and one feels that he is describing men and scenes that really exist, though, in *The Prospector*, we see somewhat too plainly the finger of the author in the rather too glaring contrasts of some of his characters, for example between Shock and Lloyd, between Mrs. Macgregor and Mrs. Fairbanks in whom there seems no redeeming trait, not even the softening power of mother-love. The truth and literary vigor of his books, with their breezy western style, serve, however, as a much-needed tonic for the present day.

In the last year or so, have appeared a number of young writers of promise, only two of whom we shall be able to notice with any detail. Arthur J. Stringer, a handsome young Canadian, born in London, 1874, educated at Toronto University and at Oxford, is perhaps better known as a poet than as a novelist, though his two contributions to fiction, *The Loom of Destiny*, 1899, and *The Silver Poppy*, 1903, are worthy of more extended notice than can be given here. The latter, a picture of literary conditions in New York, has rather a unique plot of a young woman who has won unmerited fame as an author—unmerited, because to her has been attributed a work which she never wrote but the credit of which she has not the moral courage to disclaim. As can be imagined, this undeserved popularity brings about many complications and leads to some interesting character

development. His style is rather uneven and shows some straining after effect but the characters are natural and the plot original.

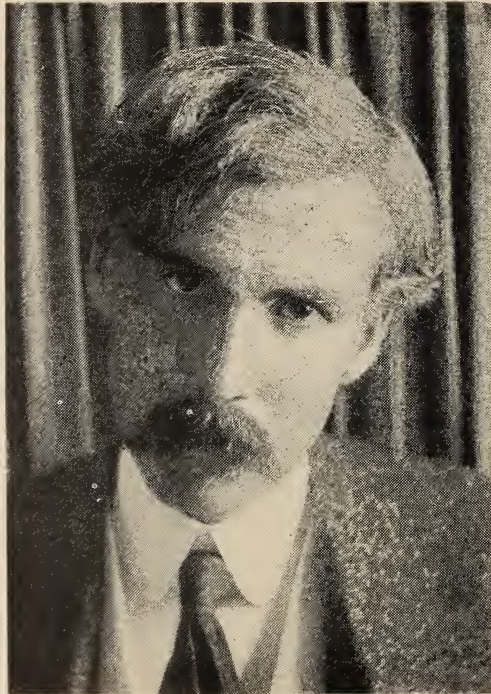
In Norman Duncan we have one of the most promising of Canada's writers of fiction. He also was educated at Toronto University, being a class-mate of Mr. Stringer; and these two, with the late Jas. A. Tucker form a literary trio of which the class of '95 may well be proud. After leaving Toronto he engaged in journalistic work in New York and his earliest production, a collection of short stories published with the title, *The Soul of the Street*, treat of life in the Syrian quarter of that city. These were followed by two long stories, *The Way of the Sea*, and *Dr. Luke of the Labrador*, which treat of an entirely different subject, being stories of the sturdy fisher-folk of Newfoundland and

Labrador and giving us true pictures of the isolation and monotony of their lives. In the last named book, the various scenes are held together by a very slight love story of Dr. Luke, the hero, and Mary Roth, the daughter of one of the principal men of the coast, a fisherman and store-keeper. Dr. Luke is a young man, to whom the memory of his past life brings stinging remorse, when he thinks of linking it to the pure one of Mary Roth. He is wrecked on the

coast of Labrador, and, seeing that here in this desolate region where a call from the mail-boat doctor in answer to a summons cannot be expected for six months and even then not with certainty, there is chance for such a man as he to atone for his wasted past by bringing relief to the suffering among these isolated people, he stays and is a boon to everyone, but especially to the sick, and Mary Roth.

The pathos of some of the scenes described in the book is very intense but it is skilfully relieved by the humor of others.

The latest development of Canadian literature is the short animal study, in which we have stories from the animal's own point of view and in which they are credited with human feelings, being indeed human creatures masquerading under the disguise of animals, a skilful modern treatment of the old animal fable. Among the writers of this



NORMAN DUNCAN.

class of fiction may be mentioned Roberts, Fraser and Seton-Thompson. The beautifully illustrated stories of the last named are too well-known to be spoken of here except for a passing mention of his latest, *Two Little Savages*, which, although like his others, an animal story descriptive of the life of the bush, is more—a hand book of animal, tree, and bird lore. Although Roberts has written some good historical novels such as: *The Forge in the Forest*, A

Sister to *Evangeline*, By the Marshes of Minas, and the most recent, *The Prisoner of Mademoiselle*, he is stronger in his short stories where his clear style, rich

developed beyond that of the average hunters and trappers whom he struggled to avoid in the forests of Athabasca. 1

Among the women writers of Canada there are some, the excellence of whose work justifies notice but in order not to overstep the limit assigned to this article, it will be impossible to do more than draw the reader's attention to a few of them. Virna Sheard is a Toronto woman who has, besides many short stories, written Trevelyan's *Little Daughters*, *A Maid of Many Moods* and *Fortune's Hill*; while Joanna E. Wood is favorably known as the author of *Judith Moore* *The Untempered Wind* and *A Daughter, of Witches*. It is possible that every one is not aware of the fact that May Agnes Fleming was a Canadian by birth. Her productions, however, of which *A Mad Marriage*, *One Night's Mystery*, *Lost by a Woman* and *Sharing Her Crime* are fair and suggestive examples are hardly worthy to be ranked as literature and we resign all claim to them in favor of her country by adoption, the United States. Not so, however, in the case of Lily Dougall, born at Montreal but now living in England,



AGNES C. LAUT.

vocabulary and keen observation are seen at their best. W. A. Fraser is another Canadian who has won a name for himself in this branch of fiction. He first wrote short stories descriptive of life in Burmah, then tales of adventure in the Canadian North West. Finally he has been emboldened by his success with these to publish three long stories, *Blood Lilies*, *Thoroughbreds* and *Brave Hearts*, the two latter being novels of race-horses, betting-men and jockeys, which, in spite of the suggestion to the contrary, are elevating in their moral tone. But he is better known as the author of two excellent animal stories, *The Outcasts* and *Mooswa*, the latter a fascinating tale of a moose with a high moral character,

some of whose novels are *Beggars All*, *Zeit Geist* and *The Summit House Mystery*, recently published and very favorably received in England under the title, *The Earthly Purgatory*. Nor in that of Agnes C. Laut, whose *Lords of the North* and *Pathfinders of the West*, while too crowded with incident to allow scope for characterisation, are thrilling stories of the adventures of the Hudson Bay people and the discoverers of the North West.

While Canadian fiction is just in its infancy and while there has been a great deal of hasty, careless work, there is much that is worthy of more attention than it has received in the past from Canadians.

The O. A. C. Review and the Public School.

BY J. H. SMITH, P. S. I.

HOW to bring the farming community, especially the young people, into more direct sympathy with the objects and aims of the Agricultural College, and into closer contact with the progressive elements of our farming population, is a problem, that merits the most careful consideration of all our advanced and thoughtful educationists. Further we may also add, that to inspire them with high ideals of scientific husbandry is well worth more than a passing thought. To imbue their minds with the real nobility of rural life under ordinarily favorable circumstances, should in itself command the attention of every lover of his country. Too much stress is laid upon the commercial aspect of the problem, and not enough to the dignity and self respect developed along this line of life. Practically it would be almost impossible in a brief article like the present to do more than suggest certain lines of thought along which the discussion should follow. This implies that a discussion should follow, for it is very important that a free expression of opinion should be given, by all those whose tastes and inclinations should lead them to this life.

The conditions prevalent on the farm at the present time, how they can be improved, and what results might be looked for on account of this change for the better would form a series of themes that should tempt every literary aspirant. Then, when these subjects have been carefully investigated, our attention might be very profitably turned upon the instrumentalities now available, but still unused, that would improve the position of our young people in our rural districts, and often instrumentalities that could be made available by a united effort.

Too frequently farm life has been presented to the young people as one continuous round of drudgery, with little time for amusement, or self culture. A certain amount of manual labor will always be the lot of the farmer, but not more so than that of the mechanic, or even the merchant, though it may differ in kind. With the aid of modern machinery, the drudgery part of farm life can be greatly lessened, if not completely removed. Great fortunes are not the reward of manual labor in any calling or profession. Commerce and speculation, are

where these fortunes are made. Honest labor nearly always gives a competency as a reward, while commerce and speculation give great prizes to the few, and nothing but failure to the many. A competency can be obtained on any ordinary farm, if the owner will use his intelligence to advantage and look after the small things, for it is true here as elsewhere that "the little foxes destroy the tender grapes," the little leaks sink the great vessel. Merchants who have amassed great wealth, attribute their success to their watchful care over the most minute detail, while the majority of farmers are very negligent in this respect.

Now these details call for close and careful attention to a number of petty things that in the aggregate make for success and prevent failure. It requires both accurate and intelligent observation before these details can be properly mastered. This pre-supposes the proper training of the mind. Mental training is more essential to success than capital, for without intelligence capital cannot be used to advantage. Some one has remarked that one of the secrets of success on the part of the Japanese in the war now raging in Manchuria is their mastery of the most minute detail, and in not making any move until everything is in readiness. May we not as a people take a leaf out of their book and profit by their experience.

Drudgery ceases to be drudgery as soon as an intelligent interest is taken in any work to be done. Intelligence makes willing workers, ignorance makes slaves. If we are to retain our bright young men and women on the farm we must provide the means for developing their minds and elevating them mentally. Our country is pre-eminently an agricultural one, for we have a fertile soil and a salubrious climate, but we must have culture and cultivated minds to solve the great problem that confronts us at the present time.

Let us take the case of a young man who has some knowledge of geology, and who is engaged in ploughing. As he passes along he notices changes in the appearance of the soil. This calls up his knowledge of geology, and he becomes interested not only in the study of the soil, but in the labor of ploughing. The drudgery forsakes the field as intelligence enters. Or again place him in a field where the grass is being cut or in a field of grain. Some new form attracts his attention, and he at once calls up his knowledge of plant life. This takes his mind from the drudgery of his work, and opens up a field of mental activity that makes farm life not only endurable but attractive. All great discoveries and all useful inventions have been preceded by

a long series of observations, and possibly of years of almost consecutive thought. Weariness does not trouble these people. They have a consciousness within themselves that wards off weariness, and gives a real, pleasant life.

Now if we can only provide proper mental food for the intellectual advancement of our young friends on the farm, we have taken a long step in advance and the fruits of this action will soon be visible. One of the first things to be done is to reach the boys and girls in our Public Schools. This has been done to some extent by the introduction of Nature Study and Agriculture into the curriculum. Many of our teachers have but little knowledge of how to take up these studies. They rely too much upon books, and what they contain. They fail to reach the original sources of knowledge, observation and experience.

The writer firmly believes that if it were possible to place in every rural School in the Province a copy of the O. A. C. Review, there would soon be an influx of students to the O. A. C. that would astonish those in authority. If we can only get in close touch with the rural schools, there is little doubt that a demand will soon arise for greater facilities for entering this college. This Journal can be made a most effective means in developing this connection between the rural Schools and the College. Our boys and girls hear of the High School, the Collegiate Institute and the University, but little about the O. A. C., the very institution that is specially adapted for their use and benefit. This is a state of things that should not exist, but much can be done to remedy it. All it requires is a united effort.

A suggestion or two on the course to be pursued by the Managers of this Journal may not be out of place here, for they have an instrumentality in their hands that can be made effective in this work. Nature Study in many of our rural Schools is very attractive to the young, for it deals with their environment, what they see, and what they come in contact with every day. This study is still in a very undeveloped state in the great majority of our rural Schools, therefore a few live articles on the most familiar subjects of rural life would be very instructive to the boys and girls, and there can be no doubt they would be read and studied with interest. These articles could be supplemented by those on school gardens and care of house plants. All departments of farm life will furnish their quota of subjects which can be treated in a simple yet scientific manner. It will be needless to suggest exactly what topics should be discussed. These should be left largely to the various writers. May the writer express the hope that some means will be devised to place this Journal in all the school rooms of Ontario. Such a step will mean much to boys and girls in our rural schools, and bring them into direct contact with an institution that has been established especially to advance the interests of the greatest industry in our country and to elevate farm life.

Agriculture.



MONTREAL HARBOR.

A Scene at Canada's great Exporting Centre.

Canada and Her Markets.

THE foreign produce markets of Canada are not numerous, the really important ones, being only two in number, Great Britain and the United States. Newfoundland, West Indies, Japan, China and Germany are the remaining and less important consumers of Canadian farm products. Out of a total agricultural export for the years 1901, 1902, 1903 of \$285,191,350 worth, \$263,817,708 worth, or about 90.2 per cent., went to great Britain and the United States, while the remainder divided among the countries just named. Of the \$263,817,708 worth of products, the United Kingdom received \$240,570,

132 worth, or 91.1 per cent. while \$23,247,576 worth or 8.9 per cent went to the United States.

Great Britain being our important market, it is our task to study the cause and character of her demands. The immense manufacturing industries and the large and dense population, two correlated conditions, furnish a cause for the tremendous consumption of food, and the small area of the realm accounts for the \$1,000,000,000 annual import of foodstuffs. The soil is exceedingly fertile and well cultivated, but it is suggestive to note the trend of agriculture as population increases. In the middle of

the last century, wheat and cereals generally, were the important farm crops. The area of these cultivated has steadily decreased, however, and stock raising has assumed their lost popularity. At present, about two-thirds of the total area is grazing land and meadow, and this circumstance indicates the present relative importance of the animal industry. But even under these conditions of specialization, hardly a single demand of the market can be wholly supplied from the English farms, and not by any means such an important food as meat.

The various classes of meat constitute the most valuable import, amounting in round numbers to \$200,000,000. The British are especially noted as meat-eaters, and, according to Mulhall, the consumption of meat per capita has increased from 40 pounds in 1840 to 98 pounds in 1888, the latter figure probably being exceeded at the present time.

The import of beef has the greatest value, but it is interesting to note that from no foreign country is the beef valued so highly as that produced at home. This is partly based on prejudice and partly on fact, for it is certain that no imports of beef have as uniformly good quality as the English article. American, that is Canadian and United States beef averages next in price. The market demands a well-fattened animal, and seems to place a premium on "finish."

Bacon ranks next in value as an import. The supply is largely imported, and, as is well known, a very special importance is attached to quality. This refers to the general uniformity of length and weight, the limits for "sizable" Wiltshire sides being between 45 and 65 pounds. The hardness of the flesh, the presence of a large proportion of lean

meat, and the absence of marks and blemishes is equally important to quality. Wiltshire sides are not the sole demand of the market. There is a considerable consumption of the cheaper hog-products. But the higher market is more profitable, seeing that it costs no more to produce the article it requires.

The demand for mutton seems to be on the increase, and a special feature of this trade is the large importation of fresh or frozen mutton. As in beef, British farms supply the choicest article, but the bulk of the total supply is imported. Canada supplies much less of mutton than of either of the meats, her total export amounting to less than half a million dollars.

There is a steady growth in the demand for wheat and flour, and, next to meat this import is most valuable, in fact it is nearly equal in value to meat. All the various qualities of wheat find a market. Little can be said of quality, however, and the main thing to remember is the lessening production, and the growing consumption of wheat and flour in the Island Kingdom.

The import of dairy products ranks next in value to that of wheat. The consumption of butter is rapidly increasing, there being in 1903 an advance of over \$7,000,000 in value on the import of 1901. As for bacon, all grades find a market, but the demand for high quality in the butter is even more insistent than for high quality in bacon. The flavor must be perfection, the package attractive, the salting light and the butter in a firm condition which necessitates cold storing at every stage of transportation.

The demand for cheese seems to rule very steady. The total value of the imports is less than a third of that of butter. A special feature of the market require-

ments is a particularly well-cured or ripened article, which condition is best obtained at low temperatures. British commission merchants are raising strong objection to the wooden box because of its frailty, and it devolves upon Canadian exporters to provide a more suitable package.

Thus briefly we have considered the agricultural imports of the United Kingdom in which Canada is interested. The United States next claims our attention as a market. Notwithstanding the proximity of the two countries, Canadian exports to her neighbor are very small, owing of course, to the insurmountable tariff. The United States takes some of all our products, but no great amount of any of them. While a discussion of the tariff is out of place here, it is well to remember just now when reciprocity looks desirable in our neighbor's eyes, that such a policy would not lead to a decrease of our exports to Britain, but would rather lead to general agricultural expansion. The demands of the two markets are quite dissimilar. But, granting that part of the trade were diverted it would be because the latter market proved more profitable, and this would undoubtedly benefit the farmers, and through them the country at large.

Of the other markets, Newfoundland is first in importance, the chief import being flour. The United States supplies the larger portion of the agricultural imports under present conditions, but, if somewhat better feeling could be established between Newfoundland and Canada, the latter country would have every advantage in supplying the various foodstuffs required on the island.

The West Indies would provide a good, though limited market for flour, cheese,

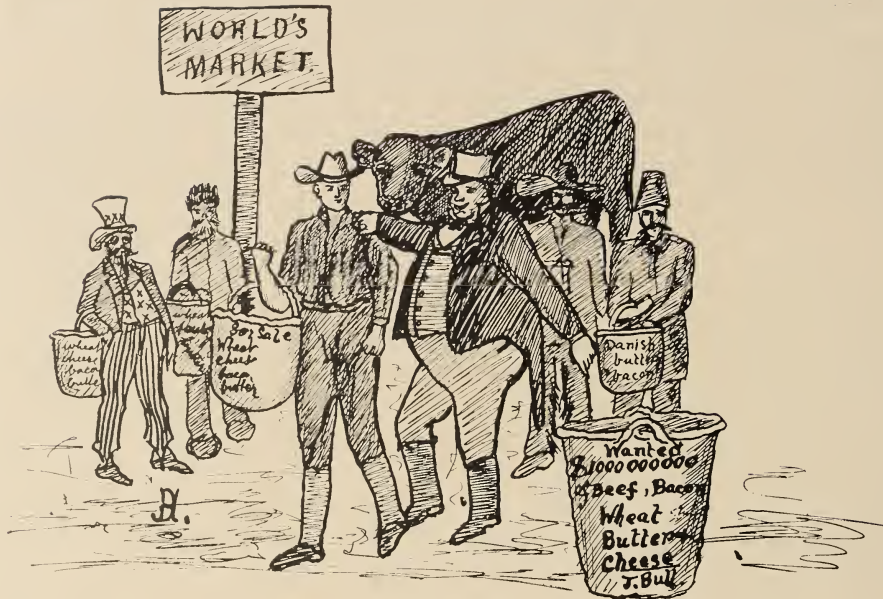
and butter if Canadian goods were more widely known, and better transportation facilities were established.

In Japan and China there is a growing demand for flour, butter, condensed milk, and canned goods. The possibilities of this market seem almost infinite, in view of the evolution which is taking place in these oriental countries. The United States was before us in the field, and the increase of her exports may be taken as an index to the possibilities of this market. To China, they grew from \$2,946,209 in 1890 to \$15,259,167 in 1900; and to Japan, from \$5,232,643 in 1890 to \$29,087,475 in 1900. Assuredly here is a market for the great Canadian West.

Our competitors, on the British market especially, are numerous and we might say at times very inconvenient. We can only notice the more important ones at this time.

The United States is the strongest competitor in wheat, and following her come Argentina, Russia, India and others less important. In point of yield per acre Canada is far in the lead, and there is no danger of her wheat lands being kept out of cultivation by the offerings of various competitors on the markets of the world.

Denmark, Holland, France, Russia, New Zealand and Argentina compete strongly on the British dairy market, and, while Canada takes foremost place as to quantity and quality of her cheese, she has to yield the palm to all except Argentina as regards quantity of butter and to all except Russia as to quality of this article. The superior quality of Argentine butter, though it has been on the market for only three years, is very remarkable and can only be accounted for by the most improved methods of



JOHN BULL TO JACK CANUCK: "Well, Jack, my boy, you can't fill this 'ere 'amper; but look to the quality, for you might as well 'ave the price as these blokes."

manufacture and transportation.

Canada competes with United States, Denmark, Ireland, Australia and Argentina on the British meat market. The competitive products of United States, Argentina and Australia are chiefly beef and mutton, the latter being more characteristic of the two last named countries. The hog products of the United States compete indirectly with our own, but Denmark is our strong direct competitor in bacon at the present time.

The competition from some of these countries is likely to increase and from others is likely to decrease. Argentina, Australia, and Russia with their large remaining areas of uncultivated soil

almost certainly belong to the former class. The United States, Denmark, and other European countries are probably the decadent nations so far as exports are concerned. The large population and the growing industrial activity are operating to produce a large home market which begins to show its effect in slightly decreased exports. The classification of Denmark, while not strictly correct is relatively true. All her land is under intensive cultivation and the cost of production is higher than for Canada. Foreign competition will therefore tend to restrict production in that country. But even if Denmark holds her own we can hardly expect to see her do more.

GOOD SEED.

THE importance of sowing the best seed receives general recognition.

Government regulations have been enacted to prevent the sale of impure or adulterated samples. Dealers, therefore, are becoming more careful as to the quality they present for sale. Farmers are realizing the destruction wrought to their property by buying clover and other seed which contains a high percentage of noxious weed seed, and begin to pay strict attention to the quality of the seed they purchase.

This is an advance in the right direction, and it is doing good service by calling attention to the importance of seed

seed after three years selection, and thus a pure or pedigreed strain is produced. The details of the work can be obtained, and one can become a member for a trifling fee. The purpose of introducing this example of organized endeavor, however, is to show the general appreciation of the possibilities of seed improvement.

This is not a question which has to be argued. The results of experiments and the successes of plant-breeders demonstrate that, in the matter of seed improvement, the farmers of all countries are merely in the kindergarten stage. But the advance has begun, and we may look soon for the same triumphs to attend the improvement of seed as have hitherto rewarded the breeder of live-stock.

For this reason, it will be well not only for the farmer in average conditions to practice careful selection of seed, but also more especially for the man who is favorably situated to specialize in the growing of the most improved seed. Under the new regime it seems that such a man must bear the same relation to his fellow-farmers as the stock-breeder bears to the feeder or dairyman. The watchword, specialization, spells the way to success in this line of



An Object Lesson.

selection. But at the same time it is only the first move of a very general progression and the second phase of the new order has been inaugurated by the Canadian Seed Grower's Association, an organization created largely through the untiring and devoted energy of Dr. Robertson. The methods of work pursued by this body and the objects it has in view are familiar to all readers of the agricultural press. Briefly stated they are: to sow hand selected seed on half-acre plots from year to year, and this, by a system of selection, to improve the quality of the crop and increase the yield. Members of the Association register their

endeavor as in any other. It will be profitable not only for the seed producer, but also for his brother farmers who take more kindly to another special phase of business. There is room for all who are favorably situated and who have a taste for this kind of work, and the sooner a start is made the sooner profit will begin to accrue. Valuable work may be accomplished individually, but membership of the National Association presents many advantages, and these will become more pronounced as interest increases, and as greater demand is made for strictly pure pedigreed seed.

Experimental.

Concerning Wheat-Grading.

THE Western Wheat Crop:—What do you suppose it was in 1904? 77,000,000 bushels. Enough to give every man, woman and child in Canada, over 15 bushels of wheat, each! This grain was grown on $3\frac{1}{2}$ million acres, and yet there remains 175 million acres of arable land, which at the same rate of yield could produce 3,850,000,000 bushels. Canada could surely become the "Granary of the Empire." The greater part of this great yield of grain is exported to England, where the Westerner finds a ready and profitable market for his produce.

When harvest days have discovered the golden treasure of the West, there is a general migration of grain portages to the numerous elevators that are found at nearly every station throughout the land. Here the grain is stored till export trade calls for it. While the grain is being brought to the several elevators of the great milling companies, samples of it are forwarded to the Government grain inspector, Mr. David Horn, Winnipeg, who grades these samples into five classes, viz:—No. 1, Hard; No. 1, Northern; No. 2, Northern; No. 3, Northern; and No. 4, Northern. In grading the wheat into these classes, he takes into account (1) the appearance of the grain, (2) the hardness of the wheat, (3) the weight per measured bushel, (4) the apparent strength of the gluten.

The significance of such a grading is apparent when we consider that it is on

the basis of this classification the milling concerns base their purchase prices. For instance, on Dec. 20, 1904, the prices quoted were:—

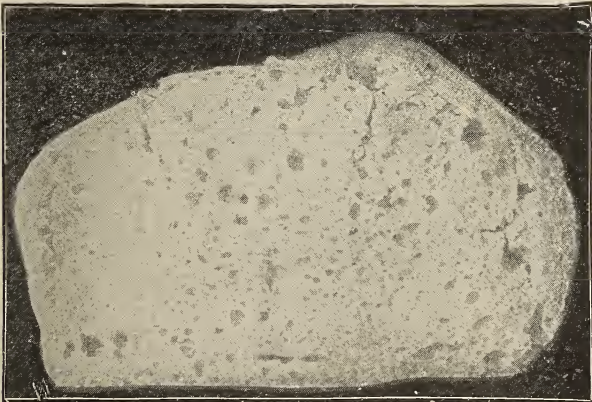
No. 1, Hard.....	\$1.07	per bus.
No. 1, Northern.....	\$1.02½	" "
No. 2, "	99	" "
No. 3, "	96½	" "

The difference in price seems insignificant for one bushel, but when thousands of bushels are considered, the discrepancy from the price of No. 1 Hard becomes very great as the wheat falls under anyone of the succeeding grades. Naturally, a great deal of dissatisfaction has been occasioned by the operation of such a system, and many of the Western farmers have felt that the classifications are somewhat arbitrary, and do not adequately show the relative merits of the different classes of grain. For this reason the Department of Agriculture for the N. W. Territories, at the suggestion of Mr. Geo. Harcourt, B. S. A., Superintendent of Fairs and Institutes for this Department, undertook a scientific investigation of this subject. A number of samples of wheat were collected from different districts in the Territories. These were graded by Mr. Horn, sealed, and forwarded to Prof. R. Harcourt, Chemistry Department, O. A. C. Samples of flour were taken from each 8 bushel lot, after they had been carefully ground, and these samples of flour were carefully analysed. At the same time, a practical baking test of each flour

was made. Before examining the many interesting facts that were revealed by this investigation, we may degress to a brief consideration of the essential components and qualities of flours in general. Let us first recall a few definitions which Prof. Harcourt has compiled lest some of the terms used may not be familiar to us.

1. Proteids :—This is the name given to those constituents of food containing nitrogen and usually called albuminoids. They are often spoken of as “flesh warmers” as against the “heat formers” which are made up of fats, starches and sugars.

2. Gluten :—When a few grains of wheat are chewed continually, a tough elastic substance is obtained, which is practically gluten. It is a leading constituent of the proteids, and hence is of the greatest value in a flour, for bread-making.



Gluten remaining after Starch has been removed.

3. Gliadin :—One of the constituents of gluten and described as a viscous sticky substance like glue, soluble in 70 per cent. alcohol solution.

4. Glutenin :—Another constituent of gluten which gives it its toughness. It is insoluble in water, alcohol, and salt solution, but soluble in dilute alkali.

5. Strength of flour means the capacity to make a large loaf, and is associated with the power to absorb water. Starting with equal weights, Manitoba flour will absorb more water than flour made from English wheats. This amounts to one or two loaves per sack.

Referring to this “strength” of flours, millers and bakers classify flours as “strong” or “weak.” The yeast plant, as it grows with the dough, develops a gas—carbon dioxide. This gas, as it is evolved, expands the thousands of little sacks formed by the dough, thus causing the dough to “rise.” Then, if a flour is of such a quality that as dough it will form a tough sack-cover, and will allow considerable expansion, like a good rubber sack, the flour is said to be “strong.” If, on the other hand, the sack coverings break easily, the flour is “weak.” The component of flour that gives this quality is not starch, but gluten.

The expanding power of pure gluten is shown in fig. 1. A quantity of flour was kneaded into a firm dough, and then all the starch was washed out of it, leaving pure gluten. It was then allowed to “rise” for a few minutes and was then baked. The strength of a flour is very important, since a much larger yield of bread can be obtained from a quantity of strong flour than from a quantity of weak flour. Investigations by the writer have shown that from 100

lbs. of a strong flour the yield was 156.16 lbs. bread, while from 100 lbs. of a weak flour the yield was only 145.09 of bread; showing a difference of 11.07 lbs. or $7\frac{1}{2}$ loaves. The difference in size of loaves made from these two grades of flour is shown in fig. 2. The first pile shows the product of 9 lbs. of strong



Bread made from High Grade Patent and Low Grade Flours.

flour; the 3rd. pile shows that of an equal weight of weak flour, while the 2nd. pile shows the yield of 9 lbs. of a mixture of the two grades. The loaf in fig. 3 was made from a good flour. Now strong flour can come only from a hard plump wheat, so it is mainly with a view to the strength of the flour a wheat will produce that it is graded as No. 1 Hard, No. 1 Northern, &c.

TABLE I.—MOISTURE AND PROTEIDS IN THE DIFFERENT GRADES OF WHEAT.

Lot.	Grade	Moisture.	Total Proteids N. x 5.75.	Proteids soluble in 70 p. c. alcohol. Glutidin.	Per Ce. t. of Total Proteid sol. in Alcohol
		Per Cent.	Per Cent.	Per Cent.	Per Ce. t.
1	1 H.	11.72	11.89	4.87	40.95
2	1 H.	11.93	11.81	5.06	42.84
3	1 N.	10.75	12.20	5.24	42.91
4	1 N.	11.31	11.65	5.04	43.29
5	1 N.	11.79	11.19	4.52	40.40
6	2 N.	12.11	11.98	4.94	41.20
7	3 N.	11.02	11.62	4.92	42.30
8	3 N.	11.95	10.74	4.52	42.09
9	3 N.	11.16	11.85	4.90	41.35
10	4 N.	11.52	12.16	5.00	41.68
11	Feed	11.24	12.69	5.14	40.53

TABLE II.—YIELD OF BREAD FROM 100 LBS. FLOUR DIFFERENT GRADES OF WHEAT.

Lot	Grade	Weight of Bread per 100 Pcs. 1st. Baking Lbs.	2nd. Baking Lbs.	3rd. Baking Lbs.	Average of 2nd & 3rd Baking Lbs.	Quality of Bread 2nd & 3rd Baking
1	1 H.	148.4	139.6	145.5	142.5	92.0
2	1 H.	168.0	148.5	145.3	146.4	95.0
3	1 N.	148.3	148.5	145.0	146.7	95.0
4	1 N.	141.9	141.9	147.8	144.8	92.0
5	1 N.	141.6	140.4	140.9	140.6	95.0
6	2 N.	145.0	148.0	150.4	149.2	90.0
7	3 N.	119.3	148.6	152.1	150.3	100.0
8	3 N.	152.0	145.4	148.0	146.7	100.0
9	3 N.	152.1	157.9	150.2	154.0	95.0
10	4 N.	151.6	155.5	151.1	153.3	80.0
11	Feed	146.7	150.1	152.3	151.2	80.0

For the chemical test that was undertaken, there were 11 samples of 6 grades of wheat sent to the laboratories. The grades were No. 1 Hard; No's. 1, 2, 3 and 4 Northern, and a "rified" or "stock-frozen" wheat which Mr. Horn

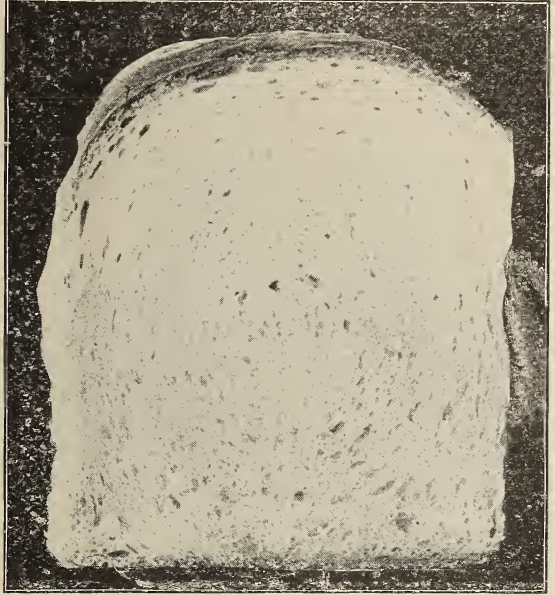
graded as "only fit for feed." This latter was some of the grain that was in shock when the heavy snowfall occurred, early in the fall of 1903. From the analysis, the accompanying tables were compiled.

The bread making value of a flour, as we have said, depends upon the amount, and the nature of the proteids it contains. The true gluten is composed of glutenin and gliadin. These must be mixed in proper proportions, to give a good strong flour. Prof. Snyder, Minnesota Experimental Station says, "a well balanced gluten is composed, approximately of 65 per cent. gliadin, and 25 per cent. glutenin. Then, if we make a study of the above table No. 1, we shall see that there is no great difference in the total proteids, and gluten between the high grade wheats and the lower grades. It is remarkable too, that No. 1 Hard and No. 1 Northern should be among the lowest in percentage of total proteids.

From each of the samples submitted, bread was made three times. The first trial was made on June 10, and the second and third trials on September 20th and 21st, at the College. This bread was judged by Miss Watson, Principal of Macdonald Institute, and Miss Given, Instructor in Cooking. In judging, the best loaf was taken as a standard, and the other loaves were graded from this. The bread made from lots 6 and 11 was darker in color, and poorer in texture than the others, but it possessed a good flavor.

The general results of the investigation seem to disagree with the grading done by the government official. It will be interesting to note from Table II, that No. 3 Northern and No. 4 Northern, and Feed gave the largest yields of bread.

Besides, it is significant that No. 3 Northern should be graded 100 in two cases, or highest in quality. While the yield of "Feed" was good, the color of the bread was dark, and it was therefore inferior to the others although the bread



Loaf made from High Grade Flour.

had good flavor. In proteid content—Table II, No. 3 Northern will be found ahead of No. 1 Hard. All these findings go to show that the grading has not been done on the basis of the real merits of the wheats, hence the great range of prices from No. 1 Hard to No 3 Northern do not correspond to the real value of the wheats.

Besides these tests, a test was made of the actual hardness of grains of the four important grades. 100 grains of each grade were subjected to a mechanical test to find their breaking weight, with the following results:—

Grade.	Ounces Required to Break Grain.
No. 1 Hard	210.24 ounces.
No. 1 Northern	210.40 "
No. 2 Northern	193.76 "
No. 3 Northern	212.80 "

This test indicates that the quality of No. 1 Northern wheat has been underestimated, since it required the most weight to break it, and was therefore the hardest wheat.

It must not be overlooked, however, that these samples of wheat may represent but a small portion of the great West: and therefore would not form a criterion of general conditions. Besides, no record was made of the climatic conditions prevailing during the maturing and harvesting of these grains, or of the

character and cultivation of the soils on which they were grown. Hence further investigation must be undertaken to confirm the above findings. But the general expression of the test is, that more scientific means should be employed to give a basis for a satisfactory grading of the wheat. This question is of great importance to Western farmers, and is receiving considerable attention in the press and elsewhere at the present time.

H. G. BELL, '05.



Co-Operative Experiments in Agriculture, 1905.

THE members of the Ontario Agricultural and Experimental Union are pleased to state that for 1905 they are prepared to distribute into every Township of Ontario material for experiments with fodder crops, roots, grains, grasses, clovers and fertilizers. Upwards of 1,600 varieties of farm crops have been tested in the Experimental Departmental of the Ontario Agricultural College, Guelph, for at least five years. These consist of nearly all the Canadian sorts, and several hundred new varieties, some of which have done exceedingly well in the carefully conducted experiments at the College, and will be used for the co-operative experiments throughout Ontario in 1905 for the first time. Each person in Ontario who wishes to join in the work may choose any one of the experiments for 1905, fill out the form of application, and return the same to the Director of the Co-operative Experiments in Agriculture at as early a date as possible. The material will be furnished in the order in which the applications are received until the supply

is exhausted. A sheet containing the instructions for conducting the chosen experiment, and the blank form on which to report the result of the work, will be sent to each experimenter at the time the fertilizers or seeds are forwarded. All material will be furnished entirely free of charge to each applicant, and the produce of the plots will, of course, become the property of the person who conducts the experiments. In return, the Committee on Agricultural Experiments desires to ask that each experiments will sow all the plots belonging to the particular experiment which he has chosen for 1905, and that he will be very careful and accurate in his work, and forward to the Director a complete report of the results obtained from the test, as soon as possible after the plots are harvested.

LIST OF EXPERIMENTS.

Grain Crops.	Plots.
1—Testing three varieties of oats ...	3
2—Testing two varieties of Barley...	2
3—Testing two varieties of Hulless less Barley.....	2
4—Testing two varieties of Spring Wheat.....	2

- 5—Testing two varieties of Buck-wheat..... 2
 6—Testing two varieties of Field Peas for Northern Ontario..... 2
 7—Testing Emmer and Spelt 2
 8—Testing two varieties of Soy, Soja, or Japanese Beans 2
 9—Testing three varieties of Husking Corn 3

Root Crops.

- 10—Testing three varieties of Mangolds 3
 11—Testing two varieties of Sugar Beets for feeding purposes..... 2
 12—Testing three varieties of Swedish Turnips..... 3
 13—Testing Kohl Rabi and two varieties of Fall Turnips..... 3
 14—Testing Parsnips and two varieties of Carrots..... 3

Forage, Fodder, Silage and Hay Crops.

- 15—Testing three varieties of Fodder or Silage Corn..... 3
 16—Testing three varieties of Millet 3
 17—Testing three varieties of Sorghum..... 3
 18—Testing Grass Peas and two varieties of Vetches 3
 19—Testing two varieties of Rape ... 2
 20—Testing three varieties of Clover 3
 21—Testing Sainfoin, Lucerne and Burnet 3
 22—Testing seven varieties of Grasses 7

Culinary Crops.

- 23—Testing three varieties of Field Beans..... 3
 24—Testing three varieties of Sweet Corn 3

Fertilizer Experiments.

- 25—Testing fertilizers with Corn..... 6
 26—Testing fertilizers with Swedish Turnips..... 6

Miscellaneous Experiments.

- 27—Growing Potatoes on the level and in hills..... 2
 28—Testing two varieties of early, medium, or late Potatoes..... 2
 29—Testing three grain mixtures for grain production..... 3

- 30—Planting Corn in rows and in squares (an excellent variety of Early Corn will be used..... 2

All seeds and fertilizers will be sent in good time for spring seeding, providing the applications are received at an early date. The supply of material being limited, those who first apply will be surest of obtaining the desired outfit. It might be well for each applicant to make a second choice, for fear the first could not be granted.

C. A. ZAVITZ, *Director.*



The Bacteriological Department of the Ontario Agricultural College intends to send out this year small quantities of Nitro-Culture for the inoculation of the seeds of the various legumes (peas, beans, vetches, clovers, and lucerne or alfalfa). Whilst the distribution will be largely confined to Ontario farmers, the Ontario Department of Agriculture are allowing a number of samples to be sent to the other provinces.

The use of these cultures is not advised on those farms on which the various legumes grow well, as such soils are already well inoculated with the needful bacteria, which draw the nitrogen out of the air and feed it to the plants. But on those soils upon which legumes do badly and where there are no nodules on the roots, the use of these Nitro-Cultures is advised. When soils are deficient in other necessary plant foods, as potash and phosphorus, these cultures will not give good results.

Applications for these Nitro-Cultures should be sent to the Bacteriological Laboratory without delay, stating the kind of legume the farmer desires to sow and the amount of the seed that he intends to use.

Horticulture.



Mr. Hunt and a Few of His Beauties.

PRIMULAS.

BY WM. HUNT, FLORIST, O. A. C.

PPRIMROSES, or Primulas as they are botanically termed, are a numerous and interesting genus of plants, chiefly natives of the northern temperate zone, Europe and Asia contributing the major portion of the species known to floriculturists. The Primrose is essentially a spring flower; its very name is suggestive of the happy spring time, especially to those who have seen the banks and hedgerows of the old land, besprinkled in early spring with the pretty, pale yellow, daintily perfumed flowers of the English Primrose, *Primula vulgaris*. Unfortunately but few varieties

of the European Primroses are entirely hardy in the colder sections of Ontario. Even in the southern portion of the province, in the Niagara district, the European Primrose requires protection during the winter. In specially favored positions it has been wintered over successfully without protection, but as a rule it requires some covering to bring it through safely.

The *Primula officinalis* (*Cowslip*), which is so common in the meadows and low lying pasture lands in England, as well as *Primula elatior* (*Oxlip*), are both of a hardier nature than *Primula vulgaris*.



Polyanthus Primrose.

I have wintered these varieties over very successfully for a number of years in the Niagara district with little or no protection in winter. Both of these varieties grow readily from seed, or from divisions of the plant. The plants should be divided, if necessary, and transplanted as soon as they are out of flower, early in June. A partially shaded position suits all Primroses best, as the hot sun of July and August is almost as injurious to them as the severe weather in winter. A few leaves and some pine boughs or ordinary brush wood placed over them makes a good protection for Primroses in winter. A rather light, well-drained, friable soil is also advisable for them.

Primula cashmeriana and *Primula siberica* are both quite hardy in most sections of Ontario. The first named is a very early flowering variety, flowering in April or early in May. A plant of this variety that had been unprotected during the severe winter of 1903-4 in the college borders, flowered very nicely last

spring. It will be interesting to note if it comes through this winter as well.

Another type of *Primula* that succeeds very well as a border plant, with a little care, is the *Polyanthus Primrose*. Several fine hybrids of these have been introduced during the last few years. One sent out by Mitchell, a Port Hope florist, makes a very attractive pot or border plant. It is usually catalogued under the name of *Primula veris superba*.

INDOOR PRIMROSES.

We are indebted to China for the varieties of *Primulas* known as greenhouse or window primroses. *Primula sinensis* and *Primula obconica* being the two species chiefly grown. Of the first-mentioned species, (*Primula sinensis*), there are several types of both single and double flowering varieties. The standard of excellence and improvement both in habit of growth, size and variety as well as intensity of color of the flowers of these types, has been very



Primula Obconica.

marked during the past few years. The first cut shows to the right of the picture a group of Primulas as seen recently in one of the College greenhouses. The centre of the picture shows a group of Cinerarias, with a few Primulas in the immediate foreground. A comparatively new introduction is the variety known as *Primula stellata*, (*Star Primula*.) This is a type of *Primula*



Primula Stellata.

sinensis, and from its taller, looser habit of growth, and its floriferous character, bids fair to become a great favorite with flower-lovers. The group of Primulas shown in the picture have been continuously in flower since before Xmas.

Primula obconica is one of the best window or greenhouse plants we have. It is easily raised from seed sown in February or March. The plants should be grown in the window, or in a cold frame out of doors in summer in a shaded position until the end of August, when they should be brought into the window or greenhouse. Early in the

winter they will commence flowering and if potted into a larger pot when required, will remain in flower for seven or eight months continuously. Unfortunately this *Primula* cannot be grown and handled by every one. In fact there are but very few persons that are not susceptible to the irritating poison contained in its leaves and flowers, more especially when the leaves of the plant are moist, or when one's hands are moist or damp. Although the irritation or slight rash often caused by coming in contact with it is not dangerous, only in exceptional cases, it certainly causes a most unpleasant smarting irritation that is not at all agreeable, and detracts considerably from the value of the plant. The best way to avoid trouble in this respect is to wear a pair of gloves when handling the plants.

Several beautiful shades of color have recently been added to the flowers of this type of *Primula* in addition to the almost white flowers at first introduced, and now it can be seen in rich lavender, rose pink, and almost a deep crimson in some of the flowers. If only a non-poisonous type of these very easily grown and floriferous type of Primulas can be introduced, its value as a window or greenhouse plant would be greatly enhanced. For cut flower purposes too it would be invaluable, as its flowers when cut and placed in water at once, will retain their beauty and freshness for a week or even longer, under only ordinary conditions.

Thornless cactus, seedless apples, and other wonderful horticultural and floricultural products have been introduced. "Why not a non-poisonous *Primula Obconica*?" An opportunity for scientific research and experiment presents itself here to those interested in the construction and culture of plants and flowers.

A FARM GARDEN.

THE majority of farmers pay too little attention to their garden. Many have "no time" for its care and after once plowing the land they leave the planting and hoeing to the "women folks." It seems to me that no farmer can afford to be without a well-cared for garden, since it supplies his table with a large variety of food, of the best kind, cheaper than he can buy it in the market. Even the hired man likes a change from a steady diet of salt pork and potatoes.

SITE.

When selecting a spot for a garden, choose a place as near the house as possible, for the convenience of the women who do the harvesting. The land should be naturally or artificially well drained since crops suffer less from drought, as well as from excess of water on well-drained land. It is always well to get a southern exposure, if possible, with a sloping or undulating surface as the land warms up earlier in spring, allowing earlier cultivation and hence earlier crops.

PLANNING THE GARDEN.

At the outset the size of the garden is the first problem to be solved. This should be regulated by the household requirements; from a quarter to a half an acre will grow enough for a family of four or five persons. The garden should be fenced; movable panels that can be taken down during cultivation, will prove most satisfactory. Before starting to put in garden seeds, it is well to outline some definite plan. Most farmers are familiar with a system of rotation and recognize its value in the garden. An elaborate system of rotation need not be practiced. Such a one as outlined below would produce good results. At first divide the garden into four or five portions. This can be done by stakes or by marking the spaces on the fence. One of these divisions should be reserved for perennial crops as: asparagus, rhubarb,

brambles, currants and grapes. It may remain as planted for a period of ten or fifteen years. The other sections contain about all the vegetables a farmer would care to raise for home consumption. The crops grown on section 2 one year, are grown on section 3 the following year. This change is similar in the other sections, making a four year rotation with the introduction of a cover-crop. This cover-crop is sown as early in July as possible and plowed down in late fall.

ROTATION DIAGRAM.

1	<p>PERENNIAL BORDER Remaining 10 to 15 years.</p>	<p>Grapes. Currants and Gooseberries. Brambles. Rhubarb. Asparagus.</p>
2	<p>Strawberries (fruiting) Early Potatoes.</p>	<p>Followed by leguminous cover-crop.</p>
3	<p>Strawberries (new bed) Sweet Corn.</p>	<p>Early planting. Late "</p>
4	<p>Onions. Radishes and Lettuce. Parsnips and Carrots. Turnips and Beets.</p>	
5	<p>Cabbage and Cauliflower. Beans and Peas. Cucumbers and Squashes. Tomatoes.</p>	

By rotating crops we accomplish certain things,—insects and fungous diseases are largely avoided; the amount of humus in the soil is increased by plowing the cover-crop; by growing leguminous cover-crops, nitrogen is added directly to the soil and the characteristic deep reaching roots allow the air to penetrate more readily, causing more thorough aeration, and deepening the surface soil; the plant food is used to better advantage by growing shallow-rooted plants after deep-rooted; weeds are more easily kept down where rotation is practiced and the cultivation is properly done.

PREPARATION.

The garden is capable of high productivity and is worthy of special treatment. This treatment should commence the year before the garden is planted, a heavy

coating of barnyard manure may be applied in the fall then ploughed under, leaving the land exposed to the action of frosts, or a green crop may be grown and treated in the same manner as the manure. This treatment will be of more benefit than if sod was plowed down in spring and the garden immediately planted, because in the latter case the vegetable material will not have time to decay and its effect as a fertilizer ordinarily will not be shown the first year. As soon as the land dries out sufficiently in the spring, work it up thoroughly with a disc harrow, follow with a set of light harrows and then roll. If taken at the right time, the land will work up into a fine state of tilth and a good seedbed is formed.

SEED SOWING AND TRANSPLANTING.

Heat, air, and moisture are necessary for successful germination of seeds. To secure these conditions sowing should take place in mellow soil and this packed slightly about the seed; loose top soil will cause the seed to dry out unless the season happens to be wet. Seeds will not sprout in the absence of air; hence the smaller seeds should be planted shallowly, one inch being an average depth. The larger seeds may be planted deeper. Always sow seeds in freshly stirred ground as they are then immediately in contact with moisture and stand a good chance of getting ahead of the weeds. The time for sowing seeds varies. Those of the hardier plants can go in as soon as the ground can be prepared. The seed of the more tender plants should be left till danger of frost is over. Put in seed the long way of the garden as this will make cultivation easier. A hand drill will plant all of the smaller seeds and do it quicker than sowing by hand. For those seeds which go in deeply a furrow is made before the drill is used. Level the soil with a rake and firm it slightly with the feet. The seed should be sown much thicker than the plants will stand when mature, to insure a good stand of plants.

Transplanting should be avoided if possible. It tends to check growth, yet it cannot be avoided in this region in order to grow some of the tender

vegetables. Cabbages and tomatoes are nearly always transplanted and strawberries require it. In moist weather great care is essential for success. Good healthy plants are necessary and late afternoon is the best time of day for the operation as the plants then have the cool night for recovery. In taking plants from the seedbed all the soil that will cling to the roots should be transferred with them and they should be kept moist until set out. After setting, the soil is packed firmly about the roots and the surface soil stirred to prevent evaporation. If a period of dry weather follows, watering becomes necessary. When it is practiced the soil should be well soaked, as light applications only start capillary action and do more harm than good.

CULTIVATION.

The chief object of cultivation is the conservation of moisture; a secondary object is the destruction of weeds. No definite rules can be given for cultivation. Every gardener has to be governed by the conditions of crop and seed. In Ontario frequent cultivation is necessary. It is well to start as soon as the seed is planted, going shallow at first and gradually increasing the depth as the season progresses. Cultivate after every rainfall and during a dry time at intervals of ten days. When plants cover the ground well, or have completed their growth, cultivation should cease as it is labor wasted. Hoeing should be practised to stir the soil immediately about the plants and kill weeds that the cultivator cannot remove.

CULTIVATION OF GARDEN FOR WINTER.

After the crops are harvested all refuse should be removed and burned; this destroys fungous diseases. The whole garden should be plowed up and a heavy coating of well rotted manure applied. By means of a disc harrow it may be worked thoroughly into the soil. The land should then be ribbed up and allowed to lie in this condition over winter in which state it serves as a good reservoir for moisture which the plants need the following season. R. G. B.

The O. A. C. Review

Editorial Staff.

H. R. MACMILLAN, '06	-	Managing Editor.
R. S. HAMER, '07	-	Editor.
C. W. ESMOND, '05, Agricultural		Miss L. L. ROSS, '05, Macdonald
E. D. EDDY, '05, Experimental		C. R. KLINCK, '06, Local
J. A. HAND, '05, Horticultural		F. C. HART, '06, College
H. A. CRAIG, '06, Personal		J. W. KENNEDY, '07, Athletics
R. E. MORTIMER, '05	}	- Artists.
D. H. JONES, '06		

Business Managers.

H. H. LEDREW, '05	J. B. FAIRBAIRN, '07
-------------------	----------------------

Subscription Rates.

Annual subscription—Students, \$1.00; ex-Students, 50 cents. Single copies, 15 cents.
Advertising Rates on application.

Editorial.

As students of the O. A. C., we point with pride to our spacious and well equipped gymnasium.

The Need of a Trainer. Our broad and beautiful campus is the admiration of every visitor. Why then were our Indoor Sports a failure from a competitive point of view? Why does our foot-ball team meet with such varying success? Why is a college hockey team this year impossible? While the latter is undoubtedly due to poor rink accomodation we must look deeper for answers to the two former questions. Undoubtedly we have the material, with our two hundred students whose early training has developed sturdy frames and muscles of iron. Nor does the fault lie with the Athletic Committee for they have worked zealously to promote a sporting spirit and have done wonderfully under present

conditions. In fact, it is they who have pointed out the way to remedy the unfortunate state of affairs in college athletics.

We must have a trainer if systematic and definite gymnasium work is to be possible, and if our foot-ball team is to win we must have a coach. Haphazard, aimless training does not make an athlete nor build up a foot-ball team. For some time our Athletic Executive have been advocating an appeal to the Government for a man competent to act as both trainer and coach. If necessary the present military drill, so little appreciated by the students could be done away with and the funds devoted to this new idea.

In addition to the advantages to the students this proposed innovation is a sound business proposition. A winning team, visiting all parts of the Province is

one of the best advertisements a College can have. Friendships made on the campus are most lasting and as a result of inter-collegiate games, graduates from other colleges would become interested in and attracted to our own Institution. We cannot have too many of this class of students and we should have the additional satisfaction of knowing that we were a recognized force in Athletic circles.

Let the students do all in their power to assist the Athletic to carry out this idea before another year passes round.



Agriculture is now being considered in its true light, Canada's support, hope and guide. This is evi-

The denced by the fact that this
Awakening. term the profession hav-
ing the most representa-
tives at the Provincial Council Board is that of farming. At the last election, a majority of the farmers was returned and this is as it should be. The truth of the law of Representation by Population is universally recognized. If this is applicable to districts should it not be applicable to vocations? Are not business interests as diverse as those put forth by localities? But have they been observed as faithfully?

Heretofore representatives of capital, parasitic professions, and paltry politicians, bound together by common ignorance and like financial interests enacted legislation greatly to the detriment of agriculture, in other words dangerously

inimical to national society. This has been true of all parties in all countries at all times.

The occasional superior education of non-agriculturists has oftener been used to lay deep schemes than to build high ideals. Their more extensive business experience has reaped them greater gain than it has brought glory to their country. Their knowledge of the law has enabled them to break it with impunity.

If farmers or representatives of the people had had more to do with the grafts and impositions masquerading to-day as laws on the American continent would that dread bird of prey, the trust vampire, which is multiplying with amazing fecundity, attaining Titian proportions and satiating its gluttonous appetite on the arteries of commerce under the cover of legal darkness, would that parasite be such a menace to modern society?

We do not wish to contend that in an ideal representative legislature nothing but the sturdy honesty of the tiller of the soil should be found but rather that the national professions and industries should be represented in order of importance. When this is an accomplished reality who will have the temerity to say that our Agricultural College has not done a great work and who will not acknowledge that the value of this lies as much in educating outsiders to the dignity in agriculture as in educating its advocates to proficiency in practicing it?

Our Alumni.



The Home of E. C. Drury.

ON January the 15th, a quiet wedding took place at the home of Mr. James Partidge, Crown Hill, Ont., when his daughter was united in holy wedlock to Mr. E. C. Drury, B. S. A. Mr. Drury graduated from this Institution in 1900, after which he returned to his farm where he has since been engaged in practical scientific agriculture.

The Review extends to Mr. and Mrs. Drury best wishes for a happy future, and we are confident that Mr. Drury will be happy if his bonny bride can bake brown bread.

James Ferguson '03 is engaged in Dairy farming near Vernon, Carleton County, Ont. His two hundred acre

farm is situated in one of the best parts of Eastern Ontario, and there is every reason to believe that Fergie will do his Alma Mater honor. He has already given evidence of this fact by his enviable showing in the judging competition at the fall fairs. While here Mr. Ferguson distinguished himself not only in the class room, but also on the campus and in the parlor.

The Pierce brothers write us that they are farming near Iona, Ont., making a specialty of Clydesdales and Shorthorns. They add that they have already purchased some valuable animals as foundation stock.

Mr. C. C. Thom, B. S. A., '04 has been at the College for the last few days.

Since graduation he has been traveling throughout the West in search of his fortune. He has already become quite fascinated with the country, having purchased a section of land in Alberta.

Mr. Alexander McPhaddin of Dominionville, Ont., has been appointed President of the Glengarry branch of the Farmer's Institute.

Although quite a young man he has closely identified himself with the agricultural progress of his own country. We are always pleased to see that our old friends are taking a prominent place in the agricultural community.

C. E. Craig '03, is spending the winter with friends at Norquay, Man. In the spring he intends to go ranching. No doubt this outdoor life will improve Judge's health, as we remember his delicate appetite while at the College.

A. T. Sutherland '03, has recently been engaged in Kamloops, B. C. to manage a shingle mill. He visited the College early in February on his way West.

Mr. W. G. Bond, Bloomfield, Ont., has taken a homestead near Qu'Appelle, Assa. He intends going West this spring to start a corner in wheat.

John Wier '03, has been spending the winter at the home of his parents near Hamilton. He has lately returned to his ranch in Alberta.

The classmates of '96 will be interested to hear that Mr. A. C. Wilson is amongst the list of our progressive ex-students.

After taking the associate course at this College he abandoned the profession which had heretofore interested him, entering railroad work in the United States. He is now connected with the Q. B. & Y. Railway, with headquarters at Aurora, Ill. In the social world Mr. Wilson

has also figured prominently. He has lately been appointed President of the Yeomen of America, a fraternal organization, now flourishing across the line.

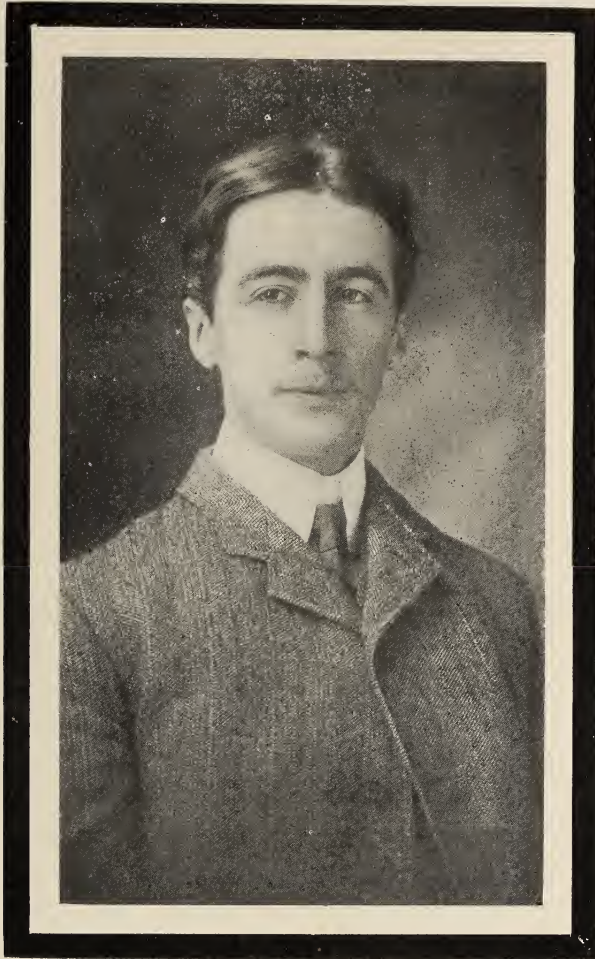
We have been kindly advised by T. H. Mason, B. S. A. that Mr. N. F. Willson, M. P., is not the first ex-student elected to the Dominion Parliament, as stated in our last issue, but that this honor is held by Dr. Rutherford, the Dominion Veterinarian.

Since our last issue we were pleased to have visit us J. Donaldson, one of the men who attended this College twenty-four years ago. He entered in 1881 and after taking the associate course returned to his farm at Port Williams, Nova Scotia. In 1903 he was appointed President of the Farmers Association of that Province, and this winter has been engaged in Farmer's Institute work in the Province of Ontario.

It is very gratifying to note that of late a number of the ex-students of this College have been promoted to important positions. We are also proud of the fact, that throughout the whole Dominion our men are gradually getting the reins of agriculture into their hands. Mr. G. H. Clark, B. S. A. has lately been appointed Seeds Commissioner for the Dominion. Until the time of this appointment he had been Chief of the Seed Division. Mr. Clark is a man of high personal character, and his application and integrity, coupled with an inborn determination, have won for him his present enviable position.

Death has this month claimed one of our brightest ex-students in the person of H. S. Stayner, whose demise occurred in Toronto February 27th.

"Harry" Stayner entered the O. A.



Harry S. Stayner, '06.

C. in 1902 taking the associate course, and at the same time two years of the arts course at Toronto University. From this fact it is evident that he was a man of exceptional ability and a student of whom the O. A. C. was justly proud. Last spring he returned to Toronto to complete his course in arts where he has since been studying.

During the two years spent here, he became deservedly popular with staff and students alike. He brought to bear upon College Literary, Athletic and Journal-

istic work those faculties which everyone believed would establish his fame in after years. Cut off in the very flush of young manhood, his Alma Mater mourns sincerely one of her brilliant sons, his classmates, an honored and beloved comrade, while Arts will suffer the loss of a worthy exponent.

The Review, of whose staff he was a talented member while at the O. A. C., joins in the profound regret and sorrow at the passing away of a lamented brother-student.

Dr. E. Cross, '81, is one of the Montreal men of the good old days. He took the associate course when the College was still young, assimilated the agriculture, proceeded to medicine, and upon earning his degree set out for Australia. Here his agricultural education stood him in good stead; investing his brains and money in stock and grain farming, he accumulated an independent fortune which has since enabled him to practice his more lately acquired profession with comparative ease. Dr. Cross says that no part of his education has he found more useful to him in acquiring a living or of more benefit in enabling him to enjoy it, than the agricultural. He is still deeply interested in agriculture and operates a large ranch near Ballarat, Australia.

L. W. Hutcheson, '00, of Aurora, Ont., is a most fortunate associate. Living upon a beautiful three hundred acre farm, with buildings unequalled by those of most luxurious amateur farmers, a residence unparalleled in many towns and a love for his profession, his fate will be success. Feeling lonely after lively life in residence at the O. A. C., in a few years he took unto himself a wife and now has everything heart could desire. "Len" will be remembered as vice-president of the athletic association and the fleet forward in the football team which won the championship of Western Ontario.

C. E. Dennis '02, is another of the associates who are now doing business for themselves. A year or so after leaving college he spent in acquiring valuable practical experience preparatory to tilling his own acres, which consist of a fine farm near Newmarket, Ont. Dennis is now married and has a family of one, which he will no doubt send, in due course, for a Guelph education.

R. K. Monkman, '06, on the strength of his course at the O. A. C. and a year's practical work on the farm of Hon. John Dryden, has secured a position managing a ranch in Indiana.

D. A. Robertson, '00, is doing his best for the West. Since leaving the East he has been engaged in almost every branch of agriculture, dairy work, harvesting operations and prairie forestry. During the summer of 1904 he held the position of foreman at the Nursery Station, Indian Head, Assa. He has joined the benedicts.

The students of the First year whose afternoon duties lead them to the Poultry Department will in future miss the familiar face of F. Bergin and sophomore students who occasionally wander over for lectures will be deprived of a reminder of old associations. Mr. Bergin has been with us only one year but his many business qualities have won for him promotion to the managership of Swift & Company's poultry plant in Chicago.

Chester Jarvis, B. S. A., who formed one of our illustrious class of '99 and who took a post graduate course here last fall in Horticulture is now at Cornell. For some years Mr. Jarvis was manager of the Hamilton district of the Scranton Correspondence College and the characteristic enterprise and energy which he displayed in that sphere of activity is now carrying him high in his chosen profession. In addition to his post graduate course at Cornell, Mr. Jarvis has assumed the duties of Lecturer in Horticulture.

The many friends of Mr. T. B. Rivett, B. S. A. '04, will join with the Review in extending congratulations to him upon his appointment as florist for a large concern in Philadelphia. The sunny disposition of our old friend "Rusty" cannot fail to make him as popular in his new surroundings as he was in the old.

Book Reviews.

NO "upset the applecart of public opinion" is a daring aim, especially when that applecart is laden with the fruit of many minds which we have been wont to regard as indisputable repositories of history. Yet this is the object expressed by the talented Canadian historian, Agnes C. Laut, in the dedicatory note of "Pathfinders of the West." And she does it. Armed with sound arguments, genuine documents and facts gleaned from French, British and Canadian archives she has been able not only to upset the applecart but to demolish it and render its fruit distasteful.

Avoiding everything in the nature of a controversy, the authoress has given us a book which more clearly than any other shows the relation between the discovered and the discoverers of this continent. Alive from beginning to end with thrilling adventure, romantic escapade and determinate foolhardiness it gives to places we know a new interest and presents early Canadian literature in a new aspect. Yet nothing is included for which satisfactory and seemingly sound references are not given.

Although it does not discount the actual travels of La Salle and Jolliet, it does discount the reputation which has accrued therefrom, and what is more to our national discredit it exposes the laxity with which our records have been searched and the easy manner in which many historians have built up their works from those of contemporaries and predecessors without making a careful enquiry into the merits of other authorities.

Wm. Briggs Co., Toronto. \$2.00.

It is interesting to trace the growth of forestry as a branch of horticulture. When first introduced this new subject being more closely allied to arboriculture than to any other existing science gradually came to be recognized as within the pale of landscape gardening. Naturally many of the first works in forestry were written or compiled, by horticulturists. And still more naturally, books thus prepared contain a great deal of reading matter on the different garden ways of propagation, cultivation and pruning, with many ingenious devices for expanding and adapting these time honored customs to the field of forestry.

Nevertheless, we are greatly indebted to these early horticulturists, the pioneer foresters of the continent. It was they who first started the agitation which has so grown that it has led to legislation which now places forestry on a firm and assured basis, as a profession by itself. Andrew Fuller, the author of Practical Forestry is such a man. He was one of the first Americans to produce a book on forestry, and although there is much in his book which is not now recognized, there is still a great deal which has not been improved upon. The most prominent feature, comprising the greater part of the book, and one which still holds good, is the list of the peculiarities of all the trees indigenous to the United States. Here are given complete descriptions of the appearance and value of even all arboricultural varieties of every genus and it is this alone which recommends the book to the present generation.

Orange Judd & Co., New York. \$1.50.

There is a proverb about the man who causes two blades of grass to grow where one grew before. But this man needs more than commendation, he is often in dire necessity of advice. It is an unfortunate fact that a great many of our grass growers do not know the virtues and evils of the different varieties which they may sow or allow to perpetuate themselves without sowing. If every farmer knew even the most pronounced characteristics of the commonest grasses would so many otherwise good farms be numbered among the assessments of insurance companies?

W. J. Spillman, Agrostologist in the U. S. Department of Agriculture has just issued a manual on Farm Grasses, which covers the ground most thoroughly. Every grass is treated from every point and just such information given as the farmer will find interesting and valuable. Distribution, habits and cultivation, feeding value, are presented together with illustrations, so that the only thing which could exceed this publication would be actual experience with and careful comparison of each and every variety.

In addition to the space devoted to different varieties there are chapters on meadows and pastures, grasses for special conditions and grasses for lawns. These serve to fill out the book into a general compendium of grass lore which should be in the hands of every farmer.

Orange Judd Co., New York. \$1.00.

The Illinois Agriculturist, a new exchange, is a business-like looking magazine and the best Agricultural College publication which has yet hailed from the United States. There is that indefinable

something about it which may be called life, and which impresses you with respect for its authors and managers. With many college magazines the atmosphere they emanate produces a greater impression than some of the articles they may contain. This should be particularly true with Agricultural College Organs, for with their unparalleled opportunities for applying professional principles to amateur efforts they are unique. An unlimited field of advertising, a close relation with live journalism and a large supply of public sympathy conspire to offer the embryo agricultural college journalist no excuse for not being the best.

"Resources" is, as its name implies, a national advertisement. Bright, wholesome, original and forceful from cover to cover it is typically Canadian. It is now published by the Montreal Board of Trade and the reception it has met should certainly encourage the production of a popular magazine embodying its outstanding features. If such a publication as Resources, well illustrated and typographically perfect were issued in standard magazine form, with bright stories of Canadian life by Canadian authors attractively arranged with authoritative articles on the history of Canada as making, the result would materially affect the importation of foreign magazines and would leave a decidedly different impression on the minds of many magazine readers at home and abroad.

With a population of six million we can support a successful magazine and will do so as soon as an experienced editor correctly gauges the taste of the people.

College Life.

THE greatest event in College literary circles took place on the evening of March 10th. The Oratorical contest is always looked forward to with the keenest of interest and anticipation, and this year there was certainly no cause for disappointment. Audience, programme and speeches were all of a high class order. In the gymnasium, tastefully decorated for the occasion, were seated the full force from College Heights and a large number of our Guelph friends, upwards of a thousand people.

Mr. F. M. Logan, President of the Society, occupied the chair, and he may well feel proud of this crowning effort to a series of excellent entertainments. Mr. Logan has worked untiringly in behalf of the Literary Society, as he does in everything he undertakes, and consequently success is assured. In an extremely neat and appropriate address, the following programme was introduced :

Cornet Solo—"The Lost Chord"—J. M. Dawson.

Oration—Position of the Press—C. W. Esmond.

Solo—Selected, Charles Reiner.

Oration—Principle in Democracy—E. D. Eddy.

Reading—Selected—Frank R. Conklin.

Oration—National Integrity—H. A. Craig.

Solo—"May Morning"—Miss Springer.

Oration—Shall Britain Fall—M. C. Cutting.

Reading—selected—Frank R. Conklin.

Oration—Race Prejudice—J. P. Atkin.

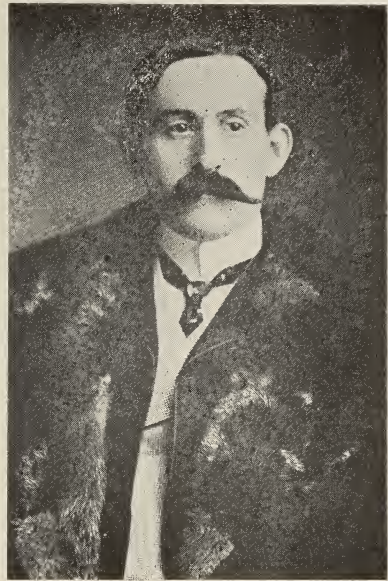
Duet—"Maying"—Miss Springer and Mr. Reiner.

Reading—Selected—Frank R. Conklin.

Awarding of prizes.

Chorus—"Last Night"—College Choral Club.

The National Anthem.



F. M. Logan, '05.

The enthusiastic, energetic, resourceful and successful President of the Union Literary Society.

The instrumental and vocal music and the inimitable fun and drollery of Mr. Conklin alternating with the eloquence of the orators, constituted a programme of the highest order. Mr. Dawson's cornet solo was enthusiastically encored. The vocal selections by Miss Springer and Mr. Reiner, both solos and duets, met with unbounded applause; Miss Springer is a general favorite, and her appearance before our audiences is always greeted with genuine pleasure.



Inside and Outside the Greenhouses.

Mr. Conklin, in his numbers, showed himself to be an artist, and his little comedies were richly enjoyed, receiving a hearty encore at each appearance. The College Choral Club, under the able direction of Mr. R. W. Mills, closed the programme.

The speeches of the evening were as the name would indicate, truly orations. At the previous oratorical contests the speeches have been of no mean order, and those of the present occasion were certainly creditable improvements on former contests. Each man treated his subject well, and deserves the highest praise, for though each had his peculiarities, yet not one of the speakers was outclassed by his fellows. Mr. J. P. Atkin presented his subject in a remarkably clear and forcible manner, leaving his audience in no doubt as to his meaning. It was this,

coupled with a perfect enunciation and an excellent command of English, that won him his place. Mr. M. C. Cutting was a close second with a speech full of eloquence and one that appealed to the audience.

The Judges, Messrs. Hugh Guthrie, M. P., J. P. Downey, M. P. P. and Rev. T. Eakin, considered the various speakers and their orations with regard to appearance and manner 20 points, voice 15 points, enunciation 20 points, eloquence 15 points, and matter 30 points; the decision was rendered as follows:—1st. J. P. Atkin, 2nd. M. C. Cutting, 3rd. C. W. Esmond, 4th. E. D. Eddy, 5th. H. A. Craig.

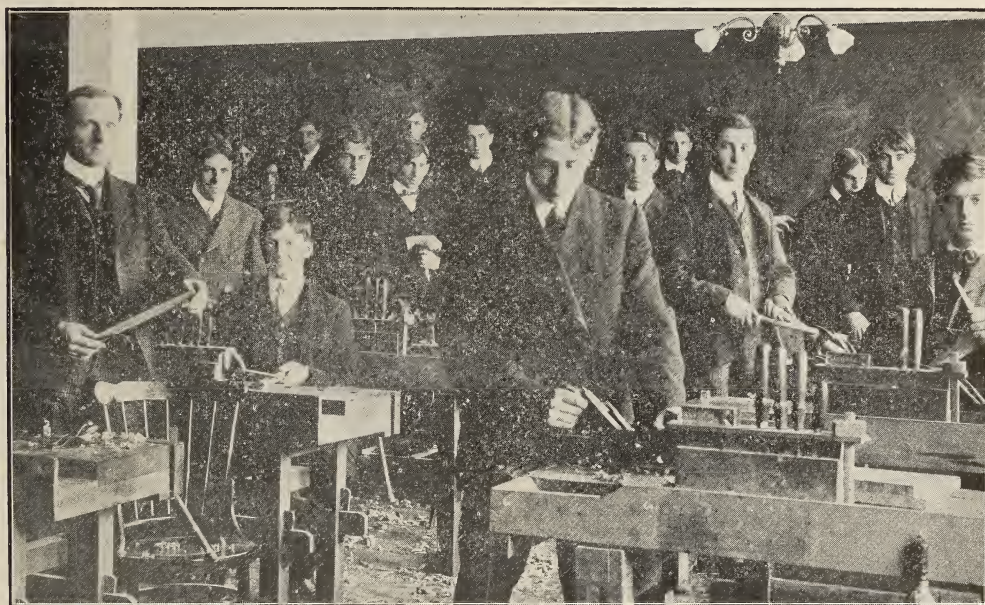
President Creelman was called upon to present the winner with the coveted trophy, a valuable Standard Dictionary and a two volume Life of Sir Wilfred

Laurier. In doing so, the president in a few felicitous remarks, (and the president's remarks are always of this nature,) referred to the members of his class who presented this annual prize.

He also spoke of the place agriculture is taking among the professions, and of the success ex-students were achieving in uplifting their vocation. The object of the present contest was to enable our

of the various planets. In fact, we all felt much better acquainted with our starry neighbors, and though we still keep our distance, yet everyone was well pleased with the introduction. Such addresses on topics outside of our regular courses of study, come as a pleasant as well as a profitable change.

Mr. T. D. Jarvis, our lecturer in the



Training the Hand and Eye. First Year at Manual Training.

students to become leaders, which indeed they were doing.

Book prizes were awarded the other speakers in order of merit, and the National Anthem closed the most brilliant oratrical contest in our history.

The students enjoyed a treat in the form of a popular lecture, Saturday evening, March 4th. Professor MacKay of McMaster University gave a very clear and interesting talk on the Solar System, illustrating his remarks with views and showing, in a manner in which all could understand, the relative position and size

Biological Department, is at present spending his holidays in the South. The various nature study courses require the lecturer's presence here during the summer months, and consequently the staff must take the winter for recreation. Mr. Jarvis is luxuriating in the sunshine of Cuba and Bermuda and incidentally learning something of nature's wonders in a tropical climate. He will return in time for the nature study course commencing April 15th, doubtless with renewed interest and vigor for the work.

Since the Executive Committee of the Young Men's Christian Association has



In the Good Old Spring Time.

appointed a Conference Committee to do what they can to influence men to avail themselves of the opportunities offered at the Student Conferences held at Lakeside, Ohio, and Northfield, Mass., it seemed that a word of explanation in the REVIEW would not be amiss.

The International Committee of the Y. M. C. A., knowing that a large percentage of the students in Canadian and American Colleges and Universities, spent their summer vacations in pleasant resorts, fishing or camping out, decided to organize a "Student's Conference" and invite delegations from each of these institutions to spend a portion of their vacation there. As a result the Northfield Conference became a reality. Here College Men may spend a ten days outing amidst the most profitable surroundings, and enjoy at the same time the pure atmosphere and healthy sport of a summer resort.

Their primary object is to give the men present some idea of the magnitude of the work they are undertaking, and the results to be derived from it, as well

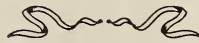
as to so train these men that they may be able to cope with their own problems with respect to Y. M. C. A. work, in their respective colleges. But to gain this desired end the Conference is not one continual round of meetings, discussions and addresses.

In all its phases the conference aims to develop the "four sided" man—the physical, the moral, the intellectual and the spiritual. For the development of the physical man, every afternoon from 1 to 5.30 o'clock is devoted to sport, and no meetings of any kind are allowed to interfere with the management of the athletic committee. Baseball, tennis, rowing, swimming and all other land and water sports are open to all. Yale and Harvard men meet others from the most insignificant colleges on the same athletic field, and the views of each are broadened. The confidential talks with such men as Brockman, Carter, Fisher, Speer and a score of others, and the contact one necessarily has with the best men from every University, as well as the general tendencies of the whole con-

ference are great factors in uplifting and strengthening the moral nature. The intellect receives a stimulus not soon to be lost when listening to the powerful arguments of Mott, or when drinking in the fountains of information, gathered from all sources by capable men, on the important problems of the church and body politic. And lastly the spiritual nature is perhaps most affected. We cultivate the acquaintance of strong christian men, and not without benefit to ourselves. "I am a part of all that I have met" is just as true now as in

the time of Ulysses, and each student that comes in contact with the strongest men at these conferences cannot help but feel that they have influenced his character for the better and this enables him to resolve that with God's grace his life will be spent working for the advancement of His kingdom.

Fellows, these conferences afford a preparation every one of us needs, to help us in the struggles in our own lives, and in the broader sphere of action which every college man must soon enter, to help us on to greater usefulness.



The Train Dogs.

BY E. PAULINE JOHNSON.

(Tekahionwake)

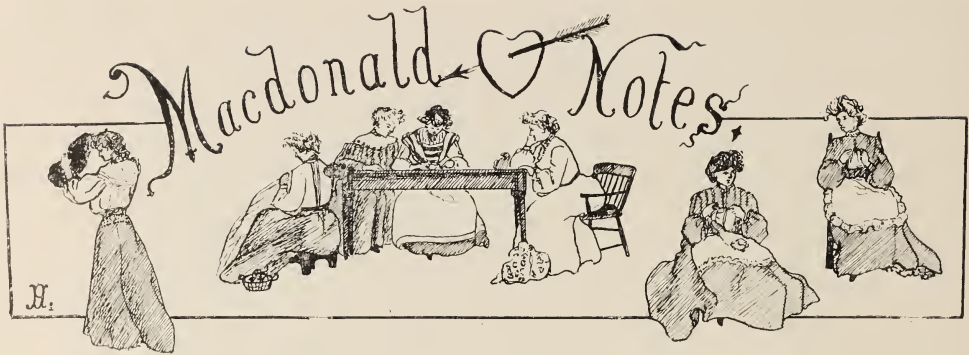
Out of the night and the north,
 Savage of breed and of bone,
 Shaggy and swift comes the yelping band,
 Freighters of fur from the voiceless
 land,
 That sleeps in the Arctic zone.

Laden with skins from the north,
 Beaver, and bear, and racoon,
 Martin and mink from the polar belts,
 Otter and ermine, and sable pelts,
 The spoils of the Hunters' Moon.

Out of the night and the north,
 Sinewy, fearless and fleet,
 Urging the pack thro' the pathless snow,
 The Indian driver, calling low,
 Follows with moccasined feet.

Ships of the night and the north,
 Freighters on prairies and plains,
 Carrying cargoes from field and flood,
 They scent the trail through their wild
 red blood,
 The wolfish blood in their veins.

—*Rod and Gun.*



A Cozey Corner in Macdonald Institute.

WESTIN is the name that has been chosen and given to those comfortable quarters in the west end of McDonald Institute, wherein dwell Miss M. M. Watson and Miss H. Givin, two of the faculty.

This cozey little spot has within its doors two bedrooms, storerooms, bathrooms, dining-room and kitchen with everything necessary to work with, which makes the housekeeper feel at home during her hours of duty.

The dining room is used also as a sitting-room, being furnished in a style

which answers both purposes very nicely.

It is in this little homelike corner that the students studying for Prof. and non-Prof. housekeeping, have an opportunity of getting some practical experience. Each is assigned this work for a week or so at a time, without an assistant, and left to her own resources to take full charge of the apartment, including all household duties, save washing and ironing. Meals have to be ready on time and the housekeeper ever ready for visitors on very short notice.

All moneys are kept account of which



Preparing for Easter.



Practical Floriculture.

makes the work more interesting and practical. A regular account book is audited at the end of each short term and the housekeeper's account closed, and the balance handed over to the judicious spending of her successor.

Another book is the record of all names giving the date and the number served at each meal. It is needless to say these are studied by the housekeeper, as "variety simply served" is one of the aims of each cook.

This little house is so cosy and so well equipped that it gives a home-sick feeling to go back to the apartment even when one knows her time has been spent, and she must, in spite of all efforts, give her sister student a chance to share the many comforts and delightful hours, which are in store for her, when once the key is put in her keeping for a few days.

This part of the practical training of

the house-keepers' course is the most enjoyable.

May the cosy home in "Westin" be always part of MacDonal Institute, and may its doors be ever thrown open to the students in the future as they have been for us.



The Macdonald Institute Literary Society.

Through the kindly zeal of President Creelman and Miss Roberts, we were fortunate in getting Professor Fraser of Toronto University to give his famous lecture on "Raphael and his Works." The lecture was illustrated by pictures representing some of the great master-pieces and so arrayed as to show the development of Italian Art from the earliest times.

The lecture was held in Massey Hall and was attended largely by the students



"And the Next Day is Monday."

of Macdonald Institute and the Agricultural College, as well as others. It was much appreciated and the students have the hope of hearing Professor Fraser again in the near future.

A rather interesting investigation has been carried on lately in connection with the making of various acid syrups.

The cooking classes upon several occasions were engaged in making marmalade, and in some cases it was found that the liquid upon the addition of the sugar turned a deep decided green.

The marmalade, after being allowed to boil undisturbed for some time regained its proper color but a green scum formed around the sides of the kettle.

Upon analysis of this scum, Prof. Harcourt found that the green color was due to an excess of indigo. During the progress of refining too much indigo had been added, but the excess was so slight as to be perfectly harmless.



On March 14th, the Macdonald Literary Society held their last regular meeting for the year in the Assembly Hall.

An unusually interesting programme brought out a good attendance, and concluded a very successful year.

The principal feature was a debate, "Resolved that opportunity makes a great man, rather than the great man the opportunity." Miss Pringle and Miss Atto upheld the affirmative while the negative was championed by Miss Robertson and Miss Wolfe. The points on both sides were well developed, but according to the decision of the judges the negative had the advantage in logic.

An instrumental by Miss Tennant was much appreciated by the audience, after which followed a Spelling Match in which all present took part. Miss McDunnough and Miss Lory acted as captains and Miss Robrats acted as referee. The contest was more or less exciting and to some extent amusing as one by one the contestants were ruled off for unintentional abuse of the orthography of innocent and unsuspecting words. The issue was in doubt for some time but the honors were finally carried off by Miss McDunnough's representatives.

Athletics.

The End of the Hockey Season.

THE hockey match on March 4th between the first and second years ended the inter-year games for this season, and brought to a close one of the closest and most interesting hockey series ever played on our rink. From the beginning of the season, the first year team played a good game, showing both speed and skill. At times they lacked the combination and powers of endurance possessed by the other teams, but their individual play and spirit always combined to give them the victory. The third year team played with their usual vim and dash and gave the winners a close race for the championship. The team from the second year was a good aggregation of hockey players and at times showed remarkable skill and speed, but for the most part they did not seem to do themselves justice on the ice, and seemed to be unceasingly pursued by an implacable ill fate which always contrived to give them second place. The fourth year team seemed to feel that hockey was not their forte, and realizing the futility of striving for first place, they allowed the last two games to go by default and reserved all their time and strength for the struggle for the baseball championship.

The following is the standing of the teams :

	Won	Lost
First Year.....	5	1
Third Year	4	2
Second Year.....	3	3
Fourth Year	0	6

This is the first time since 1902 that the hockey trophy has been won by the freshmen. The present senior year had the honor of winning it in their first and second years. Since then it has gone to the sophomores and this year the freshmen have earned the privilege of having "First Year" inscribed on the cup.



Indoor Sports.

If there is one department more than any other of which the O. A. C. students have reason to feel proud and yet which they neglect more than any other, it is our college gymnasium. We have a fine large brick building, well lighted, well heated and well ventilated, and supplied with horizontal and parallel bars, vaulting horse, travelling rings, swimming tank and all the modern up-to-date paraphernalia requisite for the most complete system of physical training. We have here a department which is a most valuable supplement to any training or education, a department which offers us something for nothing, beyond a little effort, a department which should be patronized by the students as much as any other, and yet a department which, this term especially, has been singularly conspicuous for its desertedness. Enter our gymnasium when you will and you will find the swimming tank empty, the wrestling mats lying unused in a corner, the swinging rings hanging motionless and even the boxing gloves taking their

large share of repose. Indeed were it not for the fact that the gymnasium is also suited for a concert hall and can be used by the student organizations for their meetings, it were a pity to waste so much brick and mortar on such a building. That such is the case is certainly not very creditable to the students of the O. A. C. The students are assuredly to blame for not taking greater advantage of the opportunities and privileges offered by our gym. But must they bear all the blame? I think not. We have a large chemical department with several laboratories equipped with all the apparatus necessary for ascertaining the composition of substances such as soils, foods, etc., and the application of such know-

ledge to agriculture; every facility is afforded the students for investigation along this line, and much benefit results from such study. But may I ask, how many students would take advantage of those opportunities valuable as they are, were it not for the fact that such study and training is under the direction of one who understands how to make the best use of the books and apparatus necessary for such a course of training. Take our

instructors in chemistry out of the chemical department and its classrooms and laboratories will soon be as deserted as our gymnasium. This principle also applies to our library and to all the other departments of our college. Experience is doubtless a great educator but his charges are extremely high, and the question of education, other than that gained by experience) involves an educator, instruction requires an instructor, training requires a trainer. If we need instructors to teach us how to get the most good out of the physical, chemical and all the other departments, it is just as essential that we have an instructor to teach us how to make the most out of the opportunities offered by our



Marshall-Hains Hockey Trophy.

gymnasium. It is customary for the Athletic Association to hold an annual Sports' Day for indoor sports, and to give medals to the winners in the different events or groups of events. This has to some extent stimulated a few students, who possessed particular ability along that line to take systematic training in the gymnasium, but their number has always been small, and this year there were so few entries for the different

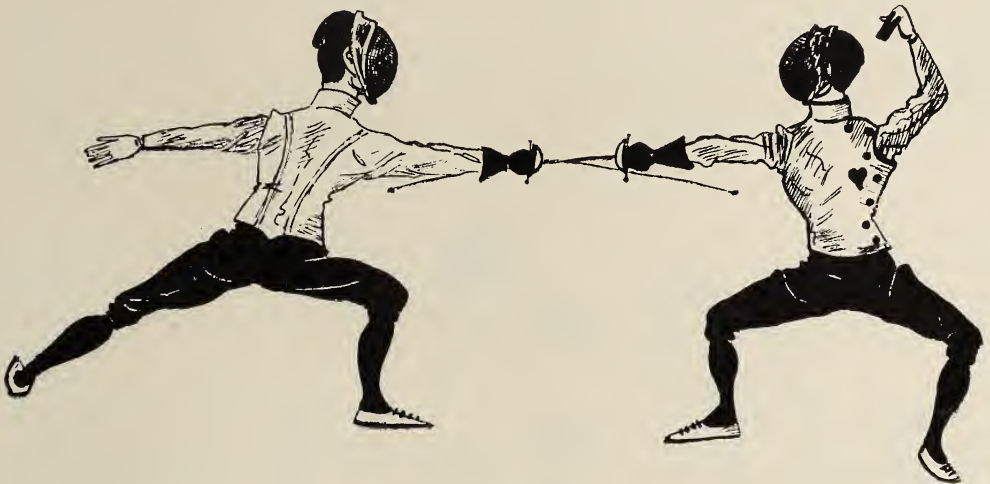
events that the athletic association did not feel justified in carrying out a programme of sports and giving medals when there was practically no competition. However on the evening of March 4th, the O. A. C. A. A. furnished us with an entertainment which was calculated to inspire the students with more zeal and enthusiasm along this line.

The portions of the programme furnished by our own athletes, the boxing and fencing bouts were very interesting and exciting, but it may here be said that the men who took part are men

regret felt by the student body being the fact that from our own number we could not select men who would give us such an exhibition as that given by Messrs. Archibald, Reid and Fidler of Toronto University.

The following is the programme :—

- MusicOrchestra.
- Exhibition on parallel bars.....
- Messrs. Archibald, Reid and Fidler.
- Physical Culture Drill.....
- Ladies of MacDonald Institute.
- Boxing Bout..... Granel and Hodson.
- Solo.....Mr. Charles Reiner.



who had attained considerable efficiency in those sports before they came to the O. A. C. ; the drills given by the ladies of Macdonald Institute were pleasing and attractive, but the chief attraction of the evening was furnished by three students of Toronto University, (one of them a freshman), who gave us some interesting exhibitions on the parallel and horizontal bars and on the vaulting horse. The programme as a whole was excellent and thoroughly enjoyed by all, the only

- Exhibition on vaulting horse.....
- Messrs. Archibald, Reid and Fidler.
- Music.....Orchestra.
- Boxing Bout.....Jenkins and Atkin.
- Solo.....Mr. R. W. Mills
- Fencing Bout.....Granel and Godoy.
- Barbell Drill
- Ladies of Macdonald Institute.
- Solo.....Mr. C. Reiner.
- Exhibition on horizontal bar.....
- Messrs. Archibald, Reid and Fidler.
- Music.....Orchestra.

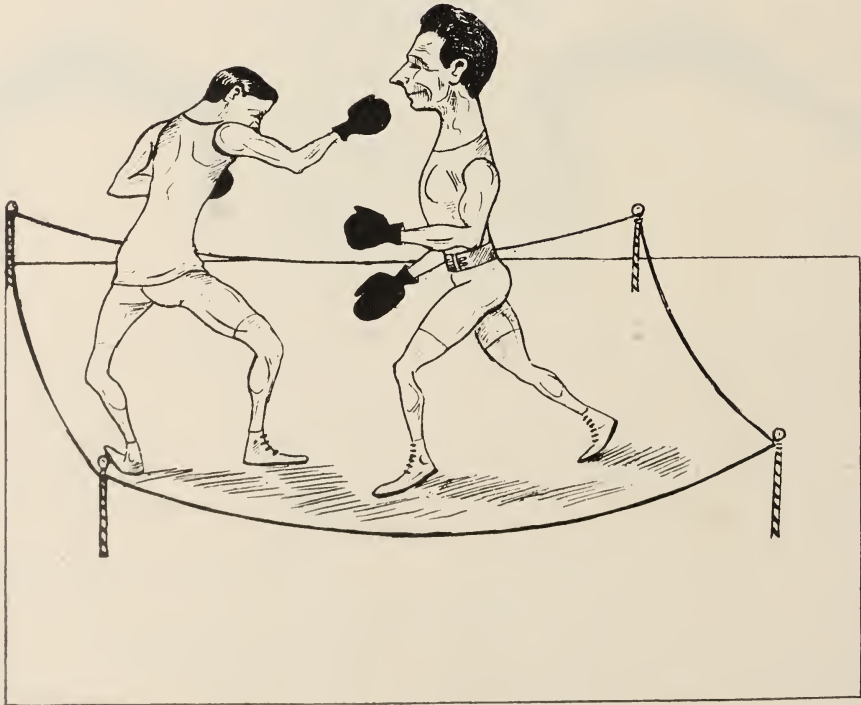
Base-Ball.

It is not very often that our students have the opportunity to indulge their liking for the Yankee's national game while at the College, but this year base-ball has figured largely in winter sports. Our gymnasium has proven an admirable place to play this game during the winter months. With windows barred and lights removed out of reach of the ball, our enthusiasts have been able to give free rein to their boisterous proclivities, free from the danger of incurring the wrath of the powers that be for damage to property. Baseball games between teams from the different years have been progressing merrily, rousing almost as much enthusiasm and excitement as hockey. From the first of the series the

fourth year to the casual observer were easy winners, they played with a coolness and precision difficult to equal. They were good men in the field but proved exceptionally good at the bat sometimes scoring an enormous number of runs at an innings. However, the first year team by steady play have worked their way forward until they are now almost abreast of the fourth year team and promise to give them a close run for first place.

The following is the standing of the teams :—

	Won.	Lost.	To Play.
Fourth year	5	1	0
First “	4	1	1
Second “	1	4	1
Third “	0	4	2



Locals.

A few questions for our Dairy students:—

Is milk a stable compound?

If milk contains 87.5 per cent. of water how often should you water the cows?

If one man can milk a cow in ten minutes, how many men will milk her in half an hour?

How many "solids not vat" are there in cheese?

If milk has *case* in it what has *oc-curd* and in what *they*?

If a cow hung herself in her chains how would you exchange her? What would be the specific gravity of such an accident.

—

We feel that the gymnasium is not so popular as it ought to be and would like to emphasize its general utility. For instance:—

Zoological students could examine the vaulting horse, the several bats, the flies and the fowls and could watch others "skin the cat."

Temperance enthusiasts might try to abolish the horizontal bar and insist that the pool below be done away with.

There is also a great field for philanthropists, The poor, blind exercisers might be made to see-saw, the dumb bells could be made to "ball" and every "halt" in the drill could be attended to.

Manual training students could get full value for their board bills by learning to box, thus developing a chest instead of being pale.

Card players could utilize that old base-ball diamond, the clubs on the walls, the

spades in the basement, the hearts which are in the mouths of the spectators, the aces by which so many games are lost and could also make use of the Jacks which are often "on deck."

Any who have a Physics Department Thesis to write should examine the many and various soils on the clothes of the base-ball men. There is also considerable sand in most of the players and occasionally a little dust is raised when dirt is seen in the game.

In addition the "straight and parallel" bars should appeal to all good stock-men and so should a good side, while all horsemen are usually interested in "rings."

In fact there is nothing to prevent all patronizing the gym, even if the lazy have to come by the stage, or by one of the coaches of the different teams.

—

Our resident master has a distinct disinclination to make "fine" distinctions.

Some of our distinguished fined students of the Senior Years wish he would finally find finer fines finest to distinguish them.

—

We have now in the 3rd year an example of co-education on the intensive plan, "Sister" Jim and "Brother" Dan may be found here sharing the same household worries.

—

There is the evening bell

Time for freshies to go to —

Now don't get excited, don't be misled,

Time children should be in bed.

—

The Belated Thesis.

I sat in my room at midnight
 As the clocks were striking the hour,
 And the moon rose o'er the campus
 Beneath the college tower.

I watched the dim reflection
 Of my midnight's burning oil,
 With its ghastly shadows falling
 And glimmering o'er my toil.

And hard, in the hazy dimness
 Of tobacco smoke and gloom ;
 I strove to commence my thesis
 And avoid approaching doom.

Among forgotten memories
 My neglected subject lay,
 And, hard as I strive to recall it,
 Seemed fading further away.

While littered and scattered around me
 Lay volumes of every kind
 Seeming to try to remind me
 Of facts I had to find.

And like the students rushing
 To dinner down the hall,
 A flood of thoughts came o'er me
 That made me want to crawl.

How often, oh, how often
 In the days that had gone by,
 I had bummed around at midnight
 Enjoying each yarn and lie ?

How often, oh, how often
 I had wished my thesis was in,
 And yet had never commenced it
 And now could not begin.

For now I was hot and restless,
 And my brain weighed down with care,
 Till the burden of gaining knowledge
 Seemed greater than I could bear.

And I thought of how many dozens
 Of studious Sophomore men
 Could hand in their thesis to-morrow
 And mine only started by then.

And I fancied the long procession
 Still filing to and fro
 Into the President's office
 Without a thought of woe.

But even while cursing my folly,
 And calling myself a mark ;
 The shadows were growing dimmer
 And leaving me more in the dark.

My lamp burned lower and lower
 And wondering how much I had done
 I saw by the last dying flicker
 The title on page Number One.

Mac—(who has been in bed four days.)
 "The doctor says I shall be able to get
 up in a few days if I take care of myself.
 I suppose that means I might better be
 my own doctor."

Prof.—(marking the roll.) Where is
 your seat, Mr. Jacobs?
 Jacobs—Somewhere among the jays I
 suppose.

Prof.—You had better sit between
 Hosmer and Jull then.

H. G. Bell—"I don't like that hymn.
 I would rather not sing it."
 "What! Hold Thou my hand. Isn't
 that all right, Mr. Bell?"

Prof. Gamble, after an unsuccessful
 search for a missing article, inquires,
 "Where is Warner's drawer. Its likely
 there."

Fairbairn—Well, Twigg, how do you
 place these cattle?
 "Pat"—First, second and third.

Willie fell in the molasses barrel,
 Out in the shed.
 Now, I'll lick you,
 Willie's mother said.

Our friend, Mr. Higgins of the Opera House, has spent the winter in the Opera House devising schemes to entertain the college students. The successes he has achieved in the past are but a guarantee of what is coming. Contrary to fashion this opera season is going to end in a climax. The next special attraction is one which will appeal particularly to nature students, "The Bonnie Briar Bush." This, with admirable forethought, has been arranged for April 6th, the night before exams, in order to give the boys one last chance.

If President Creelman can uproot a weed in a second, how long will it take him to weed out a first year *lot*?

Prof.—Have you any fault to find with this cow's head.

Munro—Her nozzle is hardly broad enough.

Our brilliant Literary Committee recently drew up a programme for the Union Meeting but unfortunately it was lost. The following, which was found between the O. A. C. and the Macdonald may possibly have been the one:

Opening Address by President Logan, (not to exceed 40 minutes.)

Quartette—Selected—Nag-Tany.

Reading—The evils of selecting an unsuitable room-mate.—Cutting.

Debate—Resolved, "That all students should attend church regularly."

Affirmative—Foster and Russell.

Negative—Cotwell and Bracken.

Address—Value of Education—A. B. Smith.

Solo—The Vitality of Hair Restorer—Jordan and Warner.

Critic's Remarks—Morewood.

Prof.—What is the matter Green-shields?

Greenshields—I was just thinking, Sir.

Prof.—Well, don't let it occur again; you disturb the class.

Our late editor, "Bob" Deachman is always looking after the best interests of the Review with a zeal that passeth all understanding. He is now, rumor says, engaged in trying to get a "grant" from the Telephone Company.

Professor in Chemistry—"If celluloid collars are not properly made they are likely to explode."

Dukson—"That's when you get it in the neck."

Prof.—How would you compare base.

Brooks—First base, second base, third base.

Prof.—Sulphur is a good disinfectant. We usually allow one pound to every thousand cubic feet of space.

McKinnon—How in the dickens would you mix it.

Astronomer—"There is Mercury with Venus." The students all looked, but it wasn't Venus Mercury had.

The President—"Now that we are all here—"

But Mason looked as if he weren't.

Billy Munro is becoming disgusted with the Big Sing. Every time he hears the Bell he says "Oh! Shaw."

MacVannel—That chap's hair is mineral wool off the hydraulic ram.

Baker—(coming into room 54, dressed for the evening.)—Have any of you fellows a deck of cards?

Broderick—Why? Are you the missing Jack?

Baker—No, but I am going out.

Craig—Not going to play solitaire, eh?

Kennedy—No, nor a lone hand either, I'll bet.

Clark—Don't forget to lead hearts Baker.

Craig—I'd like to follow suit.

Clark—Yes! You would likely be euchred though.

The laugh's on Craig.

Leach—It is a good thing to be behind in your studies, you know.

Kerr—Why?

Leach—It is much easier to pursue them then.

Wade—They say the turnips are as big as foot-balls down south.

Cam.—That's nothing, I saw three policemen asleep on one beat in St. Louis.

A short refrain from a former Review :
Little Willie had a mirror

And he licked the back all off
Thinking in his childish error

It would cure his whooping cough.

At the funeral, Willie's mother

Sadly said to Mrs. Brown
'Twas a chilly day for Willie

When the mercury went down.

Freddie—What's the difference between a politician and a statesman, dad?

Cobwigger—Well, when they run against each other the politician gets elected.

Continued on page xxiv, advertising.



Dunlop
Solid Rubber
Carriage
Tires

This mark on every genuine Dunlop Carriage tire

Make a carriage more comfortable to ride in. Worth their cost in the wear and tear they save. Lasts as long as iron rims on all ordinary roads.

Dunlop Tire Co.
LIMITED
TORONTO

ST JOHN VANCOUVER MONTREAL WINNIPEG

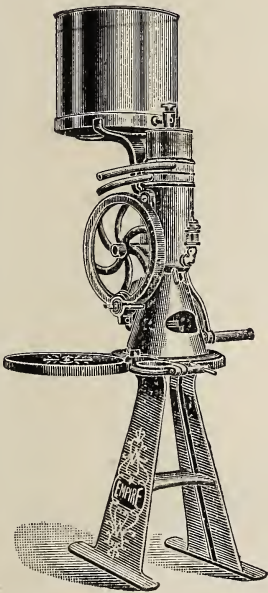
400

— THE —

EMPIRE

CREAM SEPARATORS

Though not the oldest is the most popular Separator in the world to-day Why? Simply because it is doing better work and giving greater satisfaction than any other can.



It will pay you —————
 ————— To get the Best

Send for our free books on the

“Empire Way”

of dairying. They will give you information that is worth to you \$10.00 per year for every cow you own.

Empire Cream Separator Co., of Canada, Limited.

28 Wellington Street West Toronto, Ontario

Macdonald Institute



✦ Nature Study ✦


(1) Year's Course. September to June. (2) Three Months' Courses. For actual teachers. September to December, January to March, April to June

✦ Manual Training ✦

(1) Year's Course. Teacher's or Specialist's Certificate. September to June.
 (2) Three Months' Courses or longer, in Woodcarving, etc.

✦ Home Economics ✦

(1) Two Years' Formal Course in Domestic Science. (2) Two Years' Normal Course in Domestic Art. (3) Three Months' Courses—(a) In Domestic Science. (b) In Domestic Art. September to December, January to March, April to June. (4) One Year's Course in Housekeeping.



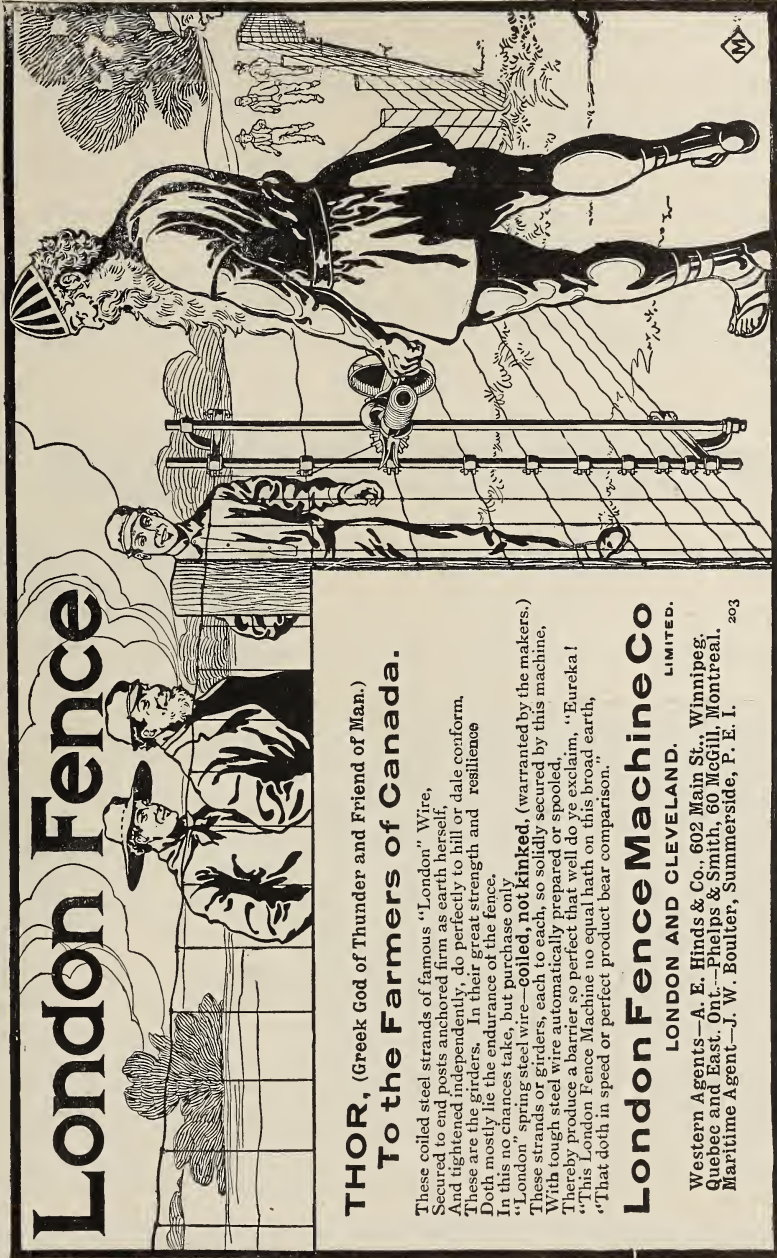
The Macdonald Institute, through the Ontario Agricultural College, is affiliated with Toronto University, and the work of the above classes will be recognized *pro tanto* in the courses leading to the University degree in Household Science.

G. C. Creelman



President

London Fence



THOR, (Greek God of Thunder and Friend of Man.) To the Farmers of Canada.

These coiled steel strands of famous "London" Wire, Secured to end posts anchored firm as earth herself, And tightened independently, do perfectly to hill or dale conform. These are the girders. In their great strength and resilience Doth mostly lie the endurance of the fence.

In this no chances take, but purchase only "London" spring steel wire—**coiled, not kinked.** (warranted by the makers.) These strands or girders, each to each, so solidly secured by this machine, With tough steel wire automatically prepared or spooled, Thereby produce a barrier so perfect that well do ye exclaim, "Eureka!"

"This London Fence Machine no equal hath on this broad earth,
"That doth in speed or perfect product bear comparison."

London Fence Machine Co
LONDON AND CLEVELAND, LIMITED.

Western Agents—A. E. Hinds & Co., 602 Main St., Winnipeg,
Quebec and East. Ont.—Phelps & Smith, 60 McGill, Montreal.
Maritime Agent—J. W. Boulter, Summerside, P. E. I. 203

Carnefac

Gives Quick and Permanent

Results

West L'Ardoise, Cape Breton, Jan. 27th, 1905.

To the Carnefac Stock Food Co.:

Dear Sirs—Enclose please find balance due on "1 Pail" Carnefac, which duly arrived here on Dec. 24th, 1904. Must say that Carnefac has proven very satisfactory. As a matter of fact, do not think I shall ever be without it again. I have recommended it and you shall certainly hear from me when this pail is empty.

Yours truly,

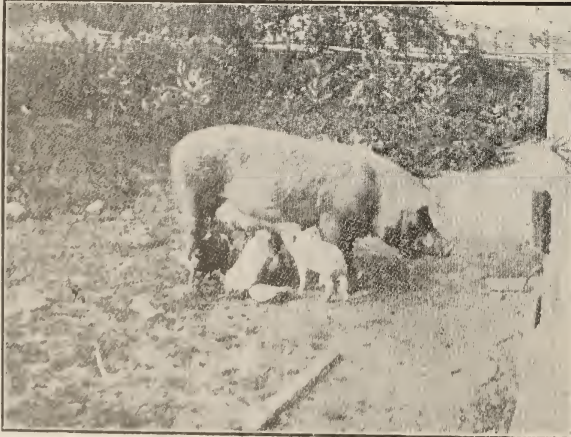
(Signed) JEFFREY MAUBOURQUETTE.

THE above is but a sample of letters we receive every day from farmers who have had 25 lbs of Carnefac on trial. A few points in these are worthy of especial notice, namely, the short-time use, the small quantity, the trifling cost, and the satisfactory results. If any of these points concern you in the feeding of your stock a few weeks use of Carnefac will satisfy you that it does all claimed for it. We would particularly invite you to try it, if you have any stock seriously out of condition.

The Carnefac Stock Food Co.

WINNIPEG

TORONTO



IMPROVE YOUR STOCK
and
SAVE HAY and OATS
by using
International Stock Food

THIS FOOD, "THREE FEEDS FOR ONE CENT," is a purely vegetable, medicinal preparation, composed of nature's remedies such as roots, herbs, barks, seeds, etc. It is entirely harmless, even if taken into the human system, and is fed to stock in small quantities in addition to the regular grain ration in order to promote digestion and a better assimilation.

FREE

A \$3 000 Stock Book and Colored Lithograph of Dan Patch 1.56 1-1.

We will pay you \$10 if Book and Lithograph are not as described.

The cover of the Stock Book is a beautiful live stock picture printed in six brilliant colors. Book is 9 1-2 inches long by 6 1-2 inches wide. It cost us over \$3,000 to produce the engravings. It contains an up-to-date veterinary department, which will save any farmer or stockman hundreds

of dollars, as it treats of the ordinary diseases to which stock are subject, and tells how to cure them. The large colored lithograph of Dan Patch is 2 feet 4 1-4 inches long by 9 inches wide, printed in six colors. It shows the International Stock Company's model barn in the background, and is worthy of a place in any home.

Write to us to-day and answer the following questions:

1st—Name this paper.

2nd—How much stock have you?

Capital Paid in
\$2,000,000

International Stock Food Co.

Largest Stock Food
Company in the World

Toronto, Canada.

MELOTTE

CREAM SEPARATORS

EASY TO TURN

Owing to the suspension of the bowl from a spindle turning on ball bearings and to the admirable arrangement of the gearing, whereby the entire weight is thrown on the lower bearings, which all turn in oil, the "MELOTTE" is probably easier to turn than any other Separator in the world.

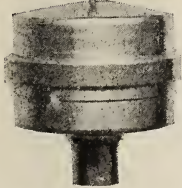
So easily does the Machine run that it has been found necessary to introduce a brake, which is now a feature of all "MELOTTE" Cream Separators, and of no others.



EASY TO CLEAN

In the manufacture of the "MELOTTE" special care has been given to this matter. The simple skimming device here illustrated can be cleaned with facility, whilst the thickly-enamelled surface of the bowl casing in sizes 1 to 5, is specially provided as being the easiest possible surface to clean.

The "MELOTTE" has no long tubes or complicated devices of any kind to be cleaned. The bowl itself is self-emptying, and every part is easily accessible.



Melotte Self-Balancing
Self-Emptying Bowl

AND DURABLE

The durability of the "MELOTTE" is shown by the fact that we have never yet had occasion to replace a single worn bearing, notwithstanding that these Machines have been on sale throughout Ontario, Quebec, and the Lower Provinces for the last seven years.

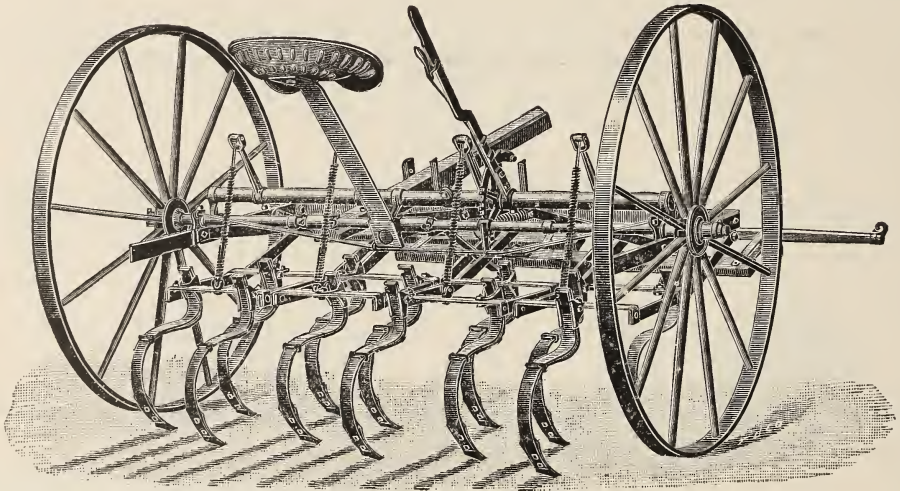
R. A. LISTER & CO., Limited
MONTREAL

The Frost & Wood Co., Limited

Have built for 1905, a line of

Seeding and Cultivating Machinery

That will increase the production on your farm, and at the same time lighten your work.



Champion 12 Tooth Cultivator

This Cultivator may be equipped with grain and grass seed boxes and be used as a broadcast seeder.

The teeth are of steel; the proper size and shape to do the best work. They are arranged in sections and will adapt themselves to any condition of land.

FROST & WOOD HOE DRILLS, SEEDERS, CULTIVATORS and HARROWS

always satisfy the prosperous farmer; they are good machines. There's a reason for it—See our Catalogue.

THE
Frost & Wood Company
LIMITED.

HEAD OFFICE AND WORKS

SMITH'S FALLS, ONT.

Winnipeg, Toronto, Montreal, Quebec, St. John, Truro, Charlottetown.

The London Mutual Fire Insurance Co. of Canada

Established 1859

Head Office, Toronto

☞ FULL GOVERNMENT DEPOSIT ☞

Losses paid since Organization.....\$4,000,000.00

Assets 755,707.33

HON. JOHN DRYDEN, President.

GEO. GILLIES, Vice-President.

H. WADDINGTON, Sec'y and Managing Director.

L. LEITCH, Supt.

D. WEISMILLER, JOHN KILLER, Inspectors.

Keleher & Hendley's Tailor Store



The Charm
of
Refinement

To the discriminating people the
elegance and charm of good clothes
is always apparent. Our hand-
some suits and overcoats are dis-
tinctive in design and finish giving
to the wearer that quiet air of
refinement. :- :- :-

Golden Fleece

“Gee Whizz, I’m Gettin’ Sleepy.”

It’s gettin’ dark—got all my chores done ;
 Jes’ settin here a-restin fer a spell an’ lisnin’
 Hear that funny screek—that’s paw drawing water at the well—
 Gee Whizz, I’m gettin sleepy.

Haint washed my feet—guess they don’t nead it bad :
 Hear them old crickets hollerin’ in the yard—
 What good is crickets—Hi ! there goes a bat !
 Hear Rover snoring, ain’t he breathing hard.
 Gee Whizz, I’m gettin’ sleepy.

That little tree toad hollerin’ like he feels as big as a bull frog,
 Smell that hay—’isht I’se layin’ in it ;
 Feel that wind—I like to have it blow my hair that way :
 Gee Whizz, I’m gettin’ sleepy.

It’ most awful long since supper,
 ’Isht I had a piece of Huckleberrpy pie.
 I’d like to be a cow what chews it’s cud and sleeps same time :
 I ’isht that I could fly.
 “Gee Whizz, I’m gettin’ sleepy.”

By D. G.

The Traders Bank of Canada.

Assets Twenty Millions, (\$20,000,000.00.)

IT IS THE FARMERS’ BANK.

Next
 Door
 to
 Post
 Office



W
 Y
 S
 N
 T
 D
 R
 H
 E
 A
 E
 M
 T

Special Attention Paid to FARMERS’ BUSINESS.

LOANS MADE

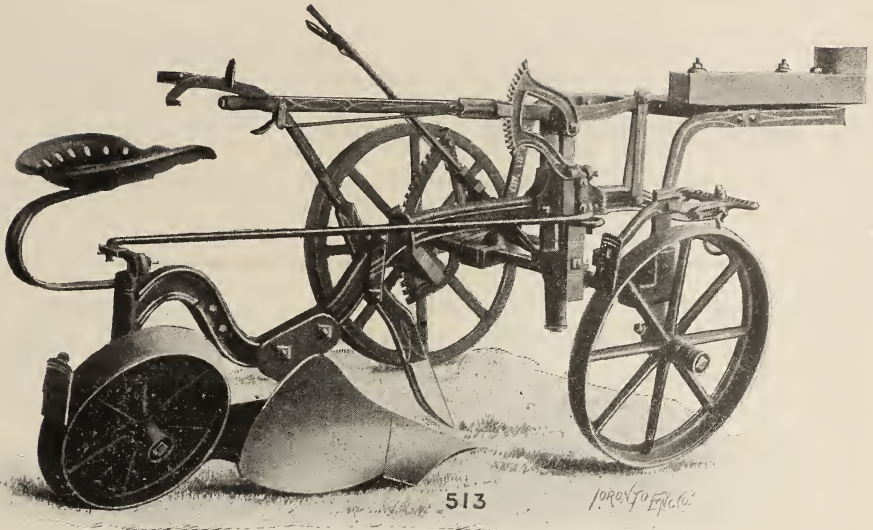
DEPOSITS RECEIVED

The Most Favorable Rates and Terms Given.

A. F. H. JONES ✻ ✻ ✻ ✻ ✻ MANAGER

" THERE
ARE
NO
PLOWS
LIKE
FLEURY'S "

This is
said by
hundreds
of
Plowmen



"GOOD-LUCK" SINGLE SULKY PLOW

This cut shows our "Good-Luck" Single Sulky Plow which we furnish with wide bottom 21A., or with narrow bottom 13A. This plow is the result of long experience in making Sulky Plows and combines EVERY CONVENIENCE for handling easily with VERY LIGHT DRAFT and most PERFECT WORK. Where these plows came into competition with others in the fall of 1904 they drove others out of the field.

Fleury Plows Lead wherever introduced

Walking Plows. Gangs, large and small. Sulky Plows.

LETTERS—From West and East,

"I have had no other field trial with the P— Sulky Plow in Chatham township and have sold your plow. The P— Plow was not in it in any way."
C. W. Peters, Dresden, Oct., 7th, 1904.

"I have some good plowmen operating your Sulky Plow and they claim it is ahead of any other Sulky Plow they ever used. It has beaten the ——— and the P— Sulky Plow here by letting a good plowman take them all to the field and test them. He has taken a FLEURY Sulky Plow."

J. Fleury's Sons, Aurora, Ontario, Canada

MEDALS AND DIPLOMAS, WORLD'S FAIRS, CHICAGO AND PARIS

Education Department Calendar for 1905.

MARCH:

31. Night Schools close (session 1904-1905).

APRIL:

1. Returns by Clerks of counties, cities, etc., of population to Department, due.
14. Examination in School of Practical Science begin.
15. Reports on Night Schools, due.
20. High Schools, second term, and Public and Separate Schools close.
21. GOOD FRIDAY. Annual Examination in Applied Science begins.
24. EASTER MONDAY.
25. Annual Meeting of the Ontario Educational Association at Toronto.
30. Notice by candidates for the High School Entrance Examination, to Inspectors, due.

MAY:

1. High Schools, third term, and Public and Separate Schools open after Easter Holidays.
1. Toronto University Examination in Arts, Law, Medicine and Agriculture begin.

May:

5. ARBOR DAY.
23. Empire Day. Notice by candidates for the District Certificate, Junior and Senior Teachers' Examinations, University Matriculation and Commercial Specialist examinations to Inspectors, due.
24. VICTORIA DAY.
26. Inspectors to report number of candidates for District Certificate, Junior and Senior Teachers' University Matriculation and Commercial Specialist Examinations.
31. Close of Session of Ontario Normal College. Assessors to settle basis of taxation in Union School Sections.

EXAMINATION PAPERS

Circulars giving list of Departmental Examination Papers, with prices, free on application.

Single copies, 25c. Five copies, \$1.00. One dozen copies, \$2.00. Trade supplied

Address:

THE CARSWELL COMPANY, LIMITED,

30 Adelaide St. E., Toronto.

Most People Have No Idea

of the size of our establishment. Call in some time and let us show YOU through. Visitors are Always Welcome.

John M. Bond & Co.

CONCLUSIVELY

“ THE ”

Hardware Store

of

Guelph and Wellington County

<u>We</u>	}	Largest Premises 4 Stories and Cellars
<u>Have</u>		Largest Staff of Clerks And Most Important of All
<u>The</u>		Largest Stock for You To Choose From

John M. Bond & Co.

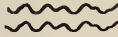
GUELPH

Wholesale & Retail

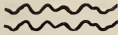
Two of a Kind



The Ontario Agricultural College is the best of its kind in the world.



The Clothes made here are in keeping with the College.



The Best, only, is good enough for the boys of the O. A. C.

J. A. Scott

MAKER OF MEN'S CLOTHES

26 Wyndham Street
GUELPH

FOSTER & FOSTER

Dentists



Office and Surgery: Corner Wyndham and
Macdonnell Sts., over Dominion Bank.
Residence, "Sunset," Paisley Street.

Telephone, 14

We Lead

Them all in Oil, Gas, Coal and Wood Heaters,
Graniteware, Tinware and Sheet Metal Goods
of every description.



H. Occomore & Co.

Stoves, Tinware and House Furnishings, Etc. Etc.
86 Upper Wyndham St.
GUELPH

The Authorized College Pin



Adopted March 30th,
1903, by Joint Committee
of Students and Faculty
elected by O. A. C. A. A.
Design Registered at De-
partment of Agriculture,
Sept. 17th, 1903.

For sale at

Pringle's Jewellery Store
Sterling Gilt, Price 50c.

J. A. McCrea

Invites You

To inspect his beautiful dis-
play of China, fancy Art Ware,
and Cut Glass on the second
floor. It is one of the sights of
Guelph and as such should not be
missed. We consider it a pleasure
to show our goods and do not ask
you to buy. We supply the O. A.
C. and Macdonald Hall with gro-
ceries and can deliver anything you
might require. Fresh Oysters,
Oranges and Chocolates are our
specialties.

Noted Tea Store
and China Palace

J. H. McCrea

'PHONE 48

Lower Wyndham St. - GUELPH

2nd Year O.A.C. Group of

"47"

Was taken at—

D. H. BOOTH'S Photo Studio,
95 Upper Wyndham

Our large operating room is specially suited
for large or small college or family
groups.

John D. McKee, Phm. B.

The above name on your package stands for

“Quality”

We Keep no Inferior Goods and our Prices are Always Right

SOME THINGS WE MANUFACTURE

McKee's

Aperient Salts, Cold Cream, Camphor Ice, Liniment, Pain Reliever, Carolina Pine Balsam, Witch Hazel and Benzene Cream, Household Ammonia, Antiseptic Toothwash, Orris Tooth Powder, Toothache Gum, Carbolic Ointment, Kidney Pills, Antibilious Pills, Iron Tonic Pills, Emulsion of Cod Liver Oil, Worm Syrup, Dyspepsia Tablets, Florida Water, Shaving Cream, Tasteless Castor Oil, Little Liver Pills, Liquid Corn Cure.

Smith's

Blood Tonic, Sarsaparilla, Headache Powders, Hair Restorer, Cherry Balsam, Neuralgia Powders and each above preparation is a winner.

YUNORA PERFUMES

Our three specials—"Princitia," "Wild Lily," "Vesta Violet." These odors are unexcelled.

Wampole's Fermolid Cream

Every O. A. C. Student should have a tube of this excellent dentrifice. We recommend it because it is positively superior to all others

25 Cents Per Tube

John D. McKee, Phm. B.

THE CONFECTIONER'S SECRET



is his ability to please the customer. The result of our work is seen in the popularity of the candy we sell.

BOYS REMEMBER

when down town, we have Hot Soda, in 10 different flavors, also

Oysters as you like them,

15c., 2 for 25c.



Ice Cream Every Day in the Year.

The Kandy Kitchen

STUDENTS...

Please make note of the fact that we have THE MOST COMPLETE and BEST STOCK of

Sporting Goods
IN THE CITY



WE are agents for the FAMOUS SPALDING ATHLETIC GOODS and the CELEBRATED FORSYTH FOOTBALL. We carry a full line of FOOTBALL, BASEBALL, LACROSSE, TENNIS, GOLF and HOCKEY GOODS. We stock BOXING GLOVES, PUNCHING BAGS, WHITELEY EXERCISERS, SANDOW DUMBBELLS, CLUBS, FENCING FOILS, MASKS, SABRES, Etc., and we have an extensive stock of GUNS, RIFLES, REVOLVERS and AMMUNITION. Anything we do not have in stock, we will be glad to procure for you.

Come in any time and see our Sporting Goods Department, we will not expect you to buy.

G. B. MORRIS,

**HARDWARE,
22 LOWER WYNDHAM.**

The Guelph Cartage Co. deliver baggage and do General Cartage Work.

Please mention the O. A. C. Review when answering advertisements.

Robert Mitchell,

The Grocer

Fruits and Fancy Groceries,
Chocolates, Coconas, Etc.

No. 22 LOWER WYNDHAM STREET.

The Tysons

Wholesale and Retail

BUTCHERS AND CATTLE DEALERS

J. & A. Tyson, Stall No. 1,
Guelph Market, 'Phone 78.
Tyson Bros., Shop cor Green
and Norfolk Sts., 'Phone 152.

NEILL THE ... SHOE MAN

SOLE AGENT FOR

**THE
SLATER
SHOE**

GUELPH, - ONTARIO.

T. H. GEMMELL & CO.

STEAM DYERS AND CLEANERS

No. 70 Wyndham Street, West Side
Suits Cleaned, Dyed and Pressed
Pressing Done on Shortest Notice
Also Agents for Parisian Laundry

FOR YOUR SKIRT AND TROUSER HANGERS

GO TO

JAMES STEELE'S
Woolwich Street,

Opposite Wellington Hotel.

Yours truly,

JAS. STEELE.

SAM LEE HING.

* * *

Me Want your Washee!
Do it Quickee!

* * *

Call on

MONDAY.

WEDNESDAY
AND FRIDAY.

* * *

SAM LEE HING,

St. George's Square.

DR. COGHLAN, DENTIST

Co. Cardigan and Woolwich Streets.
TELEPHONE 223.

W. A. CLARK

Watchmaker
Jeweller and Optician
79 Upper Wyndham St., Guelph
Issuer of Marriage Licenses

STUDENTS

If you want SHOES that fit well, look
well, and wear well, go to

Rowen's Shoe Store,
WYNDHAM STREET.

WATERS BROS.

Wyndham Street

Supply all you need in Mounting Sheets, Seed
Bottles, Scales, Compasses, Squares, Entomo-
logical Supplies, Artists' Supplies.

Picture Frames and Souvenir Presents.

For
Convenience of
Students



Our driver will be at the main building of the O. A. C. MONDAY, WEDNESDAY and FRIDAY mornings from 7.15 to 7.45 to collect your Laundry. A Thorough Wash and Perfect Finish Guaranteed.

Guelph Steam Laundry

D. W. HUNTER,
Manager.

O. A. C.
Students

If in need of SPECTACLES or EYEGLASSES, come to us. We have Graduate Expert and Experienced Optician Charge nothing to

Test the sight

We Guarantee Satisfaction



Savage & Co.
JEWELLERS

Robert Stewart

Limited.

The Pioneer Industry of Guelph

Manufacturers of

**SASH
DOORS
BLINDS**

And all House Furnishings
for over half a century

Largest dealers in Canada of

**B. C. Shingles and
Hardwood Lumber**

Telephone 26 Guelph, Ont.

Central Bookstore

Opposite where the Street Cars stop



Text Books. Exercise Books.
Foolscap. Writing Pads. Up-to-date Note Papers and Envelopes. Papeteries, Etc., Etc.
Bibles. Hymn Books. Books by Standard Authors. Poets.
Prayer Books. :- :- :- :-

In fact, everything that is kept in a well-ordered Bookstore.



C. ANDERSON & CO.

THORNTON & DOUGLAS, LIMITED

Makers and Importers of wearing
apparel for men and boys ❁ ❁

Dairy Suits
a Specialty

Stratford, Chatham,
Guelph.

W. J. STEVENSON. ANDREW MALCOLM,
Phone 143.

Stevenson & Malcolm Co

Late Members of THE BENNETT & WRIGHT Co., LIMITED,
TORONTO.

❁ CONTRACTORS ❁

FOR Steam and Hot Water Heating,
Ventilation and Hydraulic Engineering,
Plumbing and Gas Fitting,
Specialties in Sanitary Appliances.


Masonic Block, - Guelph, Ont.

C. Henry Burgess

| PHOTO ARTIST |

Special Scenery—For Groups.
Platinum and Carbon Finish.

The Leading Drug Store

LAW, The  **Druggist**

95 Upper Wyndham St. - - Phone 61

When you Want ❁ ❁

Material to Smoke or Chew Call at the
SENATE CIGAR STORE

You will find everything you want there.

McHugh Bros., 26 Lower Wyndham

FOR THE MOST DELICIOUS ❁ ❁

Confectionery, Ice Creams, Oysters,
Pastry, Fancy Cakes, Wedding Cakes
and Plain Goods.

Catering Promptly attended to.

GEO. WILLIAMS.

The 

ELECTRIC BOILER COMPOUND CO., Ltd

PHONE 396, BOX 45, GUELPH, ONT.

Walker's Electric
Boiler Compound

High-Grade Lubricating Oils, Greases, Packings
Belt Lacings, Flue Scrapers, Etc.

Crystal Cream Separator Oil
A Specialty

The Lion

Guelph's Leading and
Largest Store.

5 and 7 Wyndham 56 McDonnell Streets

3 ENTRANCES

D. E. Macdonald & Bros.

Clothiers and Furnishers

R. B. Kennedy



Photographer



The best place to get a good
Group Photograph or a Por-
trait of yourself.



The
Students
of the

O. A. C.
and
Macdonald
Institute

are invited to make
this store their buy-
ing centre for
everything in

DRUGS
TOILET ARTICLES
FINE PERFUMES
COLLEGE SUPPLIES
ETC., ETC.

Interior view of Stewart's 20th Century Pharmacy
"The Store with a Good Record."

2 Doors Below
the Post Office

ALEX. STEWART, CHEMIST.

COON

IS THE

College Barber



GO TO

COON

FOR
DRUGS and TOILET ARTICLES
GO TO
BEATTIE'S DRUG STORE
LOWER WYNDHAM

ROGERS

The Artistic Photographer
YOUNG'S OLD STAND

IF YOU WANT
School Apparatus and Supplies
Write
The
**Steinberger
Hendry Co.**

37 RICHMOND STREET W., TORONTO

Fine Footwear

"Patrician," "Hagar," Victoria" Shoes for the Macdonald Girls.

"Sovereign," "Doctor's Special," and the Slater Invictus for the O. A. C. Boys.

We lead in fine Shoes.

W. McLaren & Co.,

THE LEADING SHOE STORE

Day's

Bookstore

We have a full line of everything a student requires. Note Books, Pencils, Fountain Pens and Stationery.

A Complete Stock of Text Books always on Hand

Come and participate in our Low Price Sale

Scott & Tierney

Successors to T. J. DAY

Commencement Parts

Contains *models* of the salutatory, the valedictory, orations, class poems, class songs, class mottoes, class will, ivy poem and song, Dux's speech; essays and addresses for flag day, the seasons, national and other holidays; after-dinner speeches and responses to toasts. Also *models* for occasional addresses—social, educational, political, religious. Also models for *superintendents* and *principals*' addresses to graduating class, debating team, educational conference; on dedication of school building, public building, library; for holidays, festival days, and scores of social and other occasions. Also themes for essays, and lists of *subjects* for orations, essays, toasts.

20% discount to teachers

Commencement Parts (as above described)...	\$1.50
Pros and Cons (complete debates)	1.50
Pieces That Have Taken Prizes	1.25
The Best American Orations of Today.....	1.25
Character (epigrams by hundreds, <i>indexed</i>)...	1.50
<i>Instantaneous</i> Parliamentary Guide.....	.50

HINDS & NOBLE, Publishers

31-33-35 W. 15th St. New York City

Schoolbooks of all publishers at one store

Snow

White

Windsor

Salt



SNOW WHITE

Windsor Salt is as pure and as white as driven snow. There is no dirt or black specks in it—it is all salt. You hear this everywhere, "As pure and white as Windsor Salt." Snow White

WINDSOR SALT

Gowdy Bros.

Market Square, Guelph

PHONE 445

Wholesale and Retail Dealers in

Coal and Wood

SEWER PIPE

DRAIN TILE

CHIMNEY FLUES AND TOPS

PORTLAND CEMENT


PLASTER PARIS

PLASTERERS' HAIR

FIRE CLAY

BRICK

LIME

PROMPT  DELIVERY



Craigieburn Stock Farm

CLYDESDALES, SHORTHORNS,
and SHROPSHIREs,

Imported and Canadian bred.

Young Stock Always for Sale.

For particulars apply to

G. A. BRODIE,
BETHESDA, ONT.

Stations—

Stouffville, G. T. R.; Claremont, C. P. R.

Telephone service from stations to residence.

CLYDESDALES!

Smith & Richardson

COLUMBUS, ONT.

Importers of Clydesdale Horses

Now on hand a grand number of Stallions and
Mares, among them the Toronto Show winners

R. R. Stations—G. T. R., Oshawa
Brooklin

C. P. R., Myrtle

Long Distance Phone at Residence

Shorthorn Bulls

Shropshire Sheep

Yorkshire Swine

of the highest standard
of their respective breeds

Richard Gibson

DELAWARE, ONT.

Pine Grove Stock Farm

ROCKLAND, ONTARIO, CANADA

BREEDERS OF CHOICE

SCOTCH SHORTHORNS
and SHROPSHIREs

W. C. Edwards & Co., Ltd.

PROPRIETORS

JOSEPH W. BARNET, Manager

✦ DENTONIA ✦

PARK FARM

COLEMAN P. O., ONT.

Breeders of

Jersey and

Guernsey Cattle

Stock of both sexes For Sale

Photographs and descriptions sent on
Application

Alva Farm Guernseys.

Awarded First Prize at Montreal for Breeder's
Young Herd.

Young Animals of Merit for Sale

Pedigrees and particulars to parties wishing to
purchase, address:

SYDNEY FISHER, Knowlton, Que.

✦ J. DRYDEN & SON ✦

MAPLE SHADE FARM, BROOKLYN, ONT.

Home of the oldest and largest herd
of Cruickshank Shorthorns in America
Shropshire flock founded 1871.
Stations—C. P. R., Myrtle 3 miles;
G. T. R., Brooklyn, 1½ miles.

Have You
a Farm of
Your Own ?



OR do you think of buying one? In the latter case it will pay you to investigate the agricultural possibilities of the land offered by the Crown in some sections of

New Ontario 

For Information write to the Bureau of Colonization, or

Hon. J. J. Foy, K.C.
Commissioner of Crown Lands,
TORONTO.

Toronto and Hamilton Electric Co.

HAMILTON, ONTARIO.

Manufacturers of

DIRECT CURRENT * *
* * **MOTORS and DYNAMOS**

in all types

ALTERNATE CURRENT * *
* * **GENERATORS and MOTORS**

Repairs of all apparatus promptly done at reasonable cost.

The Waterous Engine Works Co.

BRANTFORD, CANADA.

Limited.

Manufacture

All Lines of Agricultural Engines
Single and Double Cylinder Tractions

Plain Engines

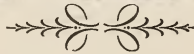
Dairy Plants, for Cheese Factories
A Large Line of Saw Mill Machinery

Drop us a card for Special Catalogues

WESTERN BRANCH * * WINNIPEG, MAN.

WE

CAN SUPPLY YOU WITH ANYTHING YOU MAY
BE NEEDING IN THE WAY OF

KODAKS**Cameras—or Supplies.**

CATALOGUES
FOR THE
ASKING.

J. G. RAMSEY & Co.

Limited

89 BAY ST., TORONTO.

☀ **This Season's Successes** ☀

OLD GORGON GRAHAM

More Letters from a Self-made Merchant to his Son. Cloth, Illustrated, \$1.25

THE PROSPECTOR

A true Connor Book

GOD'S GOOD MAN

A Story Grand in its Simplicity

PATHFINDERS OF THE WEST

The Romance of Discovery Thrillingly Told

THE MYSTIC SPRING

Sketches of the First Days of the West

BY THE QUEEN'S GRACE

A Graceful Tale of London in Elizabeth's day.

George Horace Lorimer

Ralph Connor

Cloth, Illustrated, \$1.25.

Marie Corelli

Paper, 75c. Cloth, \$1.25.

Agnes C. Laut

Superbly Illustrated, \$2.00

D. W. Higgins

Illustrated, \$1.50

Virna Sheard

Cloth, \$1.25

William Briggs,
Publisher

29-33 Richmond Street West
Toronto

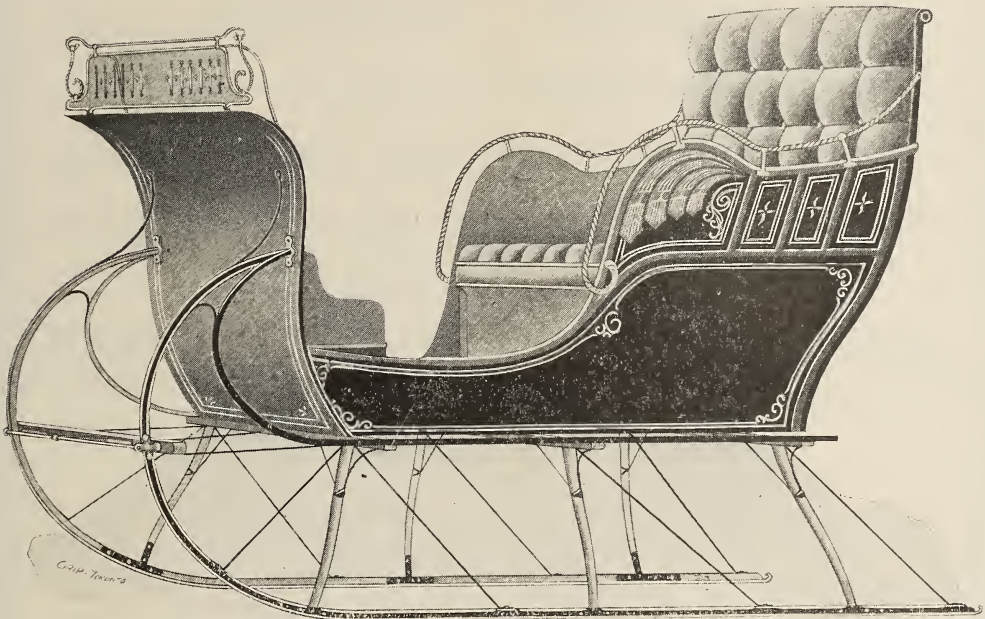
J. B. Armstrong Mfg. Co.,

(THE GUELPH CARRIAGE GOODS CO.) **Limited.**

GUELPH, CANADA.

MANUFACTURERS OF

Fine Carriages and Sleighs



O. A. C. Students and ex-Students when purchasing a Cutter, Buggy, Carriage or Democrat, remember that the home of the College which made you a **good farmer** is the home of the firm making **Armstrong Carriages**, which are good carriages. Sold by live dealers everywhere. Catalogue on application.



Lockshutt Plow Co., Winnipeg,

General Agents for Manitoba and N. W. Territories.

THE
WILKINSON PLOUGH CO. LIMITED
Toronto, Canada

Manufacturers of

PLOUGHS, HARROWS,
LAND ROLLERS (All Steel with closed ends)
Pneumatic Ensilage and Straw Cutters,
Scrapers, Wheelbarrows, etc., etc., also
The **GREAT WESTERN**
ENDLESS APRON MANURE SPREADER




Our line of goods will be found
EVERYWHERE

We ship to Great Britain, South
Africa, Australia, New Zealand
and, of course, from Ocean to
Ocean in Canada.

To succeed on any soil you must use the "Wilkinson."

CATALOGUES FREE
A Post Card will Bring One

Ryan's

**Guelph's Acknowledged
Style Centre** 

The New Season ~ Spring 1905

The arrival of the New Goods for Spring and Summer makes the store a very interesting place these days.

The beautiful new things create interest and inspire enthusiasm. They enjoy the new most who have it first. Fashion is a queen to those who follow her, a tyrant to those she is compelled to drive.

From a dozen different countries goods are gathered here for your selection. The mechanical and the fine arts contribute to our needs, or what we call, needs.

At this time of the season, a place like this is a splendid school for the lover of beauty and style. And yet, it is only a store; and all these goods bear prices, plainly marked, which is their own guarantee of fairness.

G. B. RYAN & CO.

GUELPH'S LEADING DRY GOODS STORE

FOR

Your Hats, Shirts, Collars, Ties, Sox, and all Men's Furnishing Goods, no better choice for values in the City than we give.

I DO

An Up-to-date Tailoring Business. Large Stock of the very Choicest Suitings, Trouserings and Overcoatings to select from. Satisfaction Guaranteed. One Price. Goods marked in plain figures. Be sure and give me a call.

Next to Traders' Bank

R. E. NELSON

Men's Furnisher, Hatter and Fine Tailoring

MEN'S
GOODS**E. R. Bollert & Co.**LADIES'
GOODS

THE Faculty and Students of the O. A. C. and Macdonald Institute will find this store ready to serve their wants to the best advantage. We are pre-eminently a Ladies' and Gentlemen's Outfitting and Furnishing Store. No matter what your needs this store is ready to supply them with good goods at moderate cost. We have always been favored with a large business from the personnel of the College. We shall pay special attention for it's continuance and increase.

Men's Section.

Fine Ordered Clothing at Moderate Prices.

Fit-the form, Ready-to-wear Clothing, very good and very cheap.

Best styles of Hats and Caps at closest prices.

Up to-date Shirts, Collars, Ties, Gloves, and Fancy Furnishings, not at fancy prices.

Underwear, Hosiery, Etc., grand values.

Ladies' Section.

Dressmaking at very reasonable rates. Ready-to-wear Coats, Skirts, Blouses, Etc., in great variety of new things.

MILLINERY—All the Novelties of a first-class Millinery Business constantly received.

The Underwear and Furnishing Stocks are crowded with good goods at low prices.

Belts, Collars, Gloves, Hosiery, Handkerchiefs, Etc., Etc.

25 and 27
Wyndham St.**E. R. Bollert & Co.**25 and 27
Wyndham St.**O. A. C. and Macdonald Hall****The Big Bookstore—**

(UPPER WYNDHAM ST.)

is the only store in Guelph carrying all the requisites and Text Books for the two places.

O. A. C. Fountain Pens, \$1.00.

High Class Note Papers and Envelopes embossed with College and Hall.

Prices the Lowest ✖ ✖ Stock the Best
Parcels Delivered Each Day at 3 p. m.

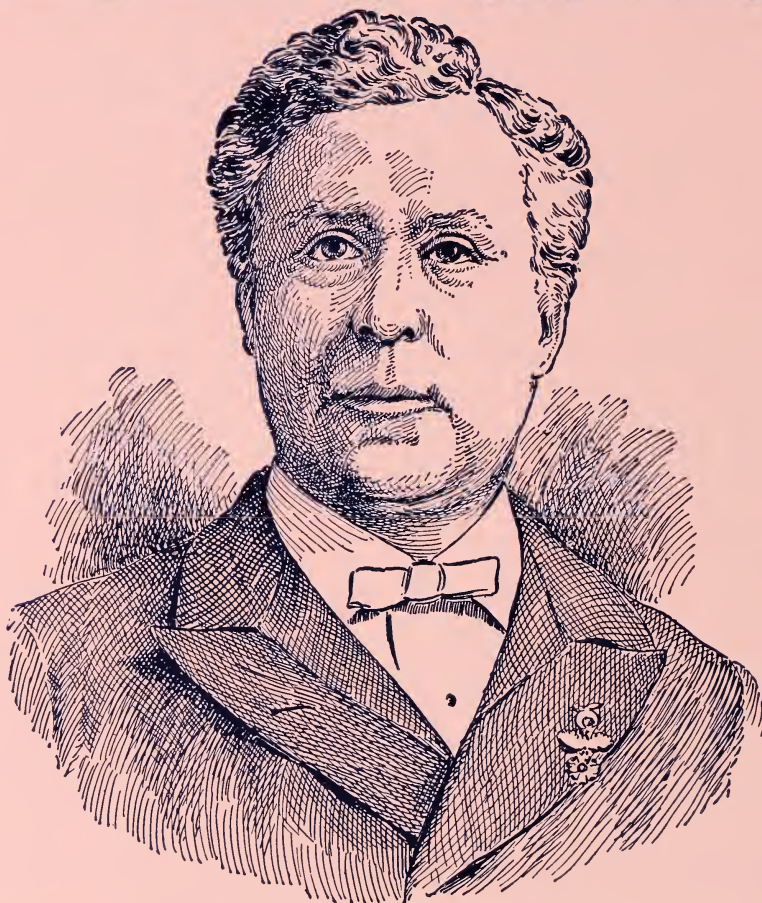
CHAS L. NELLES, THE BOOKSELLER,
UPPER WYNDHAM.

In this issue
Mr. H. J. Pettypiece,
author of the famous
Pettypiece Bill, is showing
a few of the inconsistencies
of railroad legislation
and is putting his finger
on the sorest spot
in Canada's constitution

A Few Who are Coming.

E. Stewart, H. B. Cowan, G. H. Clark, W. P. Gamble,
Prof. Lochhead, Principal Cumming,
H. J. Pettypiece.

Now, when every newspaper, every faddist, every thinker, is to the fore with a new solution of the re-adjustment of Nature Study, Agriculture and Education, we are favored with an article outlining the combination of the entire scheme, and proposing machinery for its execution. This is the outcome of the lifelong experience, close study and hard thinking of Mr. J. H. Smith, School Inspector, Wentworth County, the man who knows.



DR. ORONHYATEKHA, S. C. R.

ASSESSMENT SYSTEM

INDEPENDENT ORDER OF FORESTERS

Record for 1903

Paid to Widows and orphans and disabled Members...	\$ 1,658,108.92
Paid Sick and Funeral benefits.....	192,163.71
Increase in membership.....	14,123
Membership December 31st, 1903.....	219,492
Increase in accumulated funds during the year.....	1,234,236.97
Total accumulated fund December 31st, 1903.....	7,453,308.14
Total benefits paid to December 31st, 1903.....	16,290,991.78
Total accumulated funds February 1st, 1904.....	7,518,852.09

DR. ORONHYATEKHA,

JOHN A. MCGILLIVRAY,

Supreme Chief Ranger

Supreme Secretary

Home Office, Temple Bldg., Toronto

Students desiring further information, apply to F. M. Logan, O. A. College.

SEMI-MONTHLY.

SEMI-MONTHLY.

THE Farming World

A PAPER devoted to all branches of Agriculture. It is read by the leading Farmers and Stockmen throughout Canada. Everybody engaged in farming should subscribe, and receive The Farming World regularly.



One Year, 60 Cents.

Two Years, \$1.00.

Sample copy free on request. Address

THE FARMING WORLD,

90 Wellington Street West.

Toronto, Canada.

The Guelph Herald &

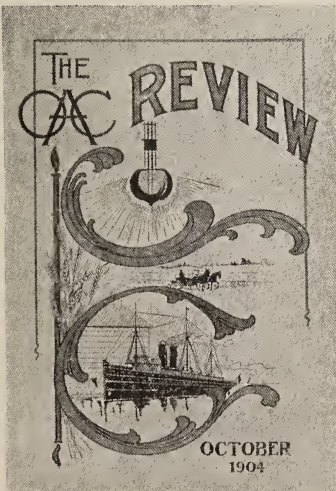
Job Department

replete with all the latest novelties requisite for the production of first-class work

The following with reference to the O. A. C. REVIEW, is from the *Canadian Thresherman*, Winnipeg:—

A CREDIT TO CANADA

“Most publications aim to do their best at Christmas time but none have succeeded more admirably than the O. A. C. Review. This magazine published by the students of Ontario Agricultural College, is indeed a long step towards magazine perfection in Canada. The editors and publishers are to be highly commended for the good work they are doing and any one desiring good, clean, interesting reading should not fail to investigate this publication.



THE REVIEW is the production of this office

You Cannot Afford

To let your home be lacking in the very best that you can give it in the line of Good Literature, High-class Art and the most up-to-date Practical Suggestions of this Twentieth Century age in regard to Farming, Gardening, Flower Culture, Housekeeping and Home-making.

To Be Without

these things is to be without a great share of all that goes to make home on the farm what it should be, the most pleasant place on earth. Besides, the reading and thinking farmer of to-day is the one who fills the highest place in the profession of agriculture. The man who reads the best methods by his fireside is the one who goes out and makes a success in his fields.

The

aim of the Farmer's Advocate and Home Magazine is to supply every requisite to the farm home at the smallest possible cost to the subscriber. We wish to help young and old, rich and poor alike—to help our people to be better farmers, better home-makers, better housekeepers, better men and women for the country. Think of it—a comprehensive home paper joined with the best farm paper published in America to-day—and then ask yourself if you can afford to be without the

Farmer's Advocate and Home Magazine

There must be many intelligent farmers in your vicinity who would appreciate our paper. Why not secure some of our valuable premiums by sending us the subscriptions of these people? Premium lists may be had by applying to our office at London, Ontario.

Remember the Subscription Price is \$1.50 a Year, in Advance

Send For a FREE Sample Copy.

ALL O. A. C. GRADUATES

Should Subscribe for
Guelph's Leading Paper,

The Weekly Mercury



It will keep them in touch with important matters pertaining to their Alma Mater, will furnish them with full information concerning the Ontario Winter Fair; will give them the news of the Royal City, and the Farm and Live Stock News of the District.



Daily \$4.00; Weekly \$1.00, in advance.

McINTOSH & GALBRAITH.

Practice with Science
THE BRITISH BUTTER MARKET

demands

SALTLESS BUTTER

necessitating the use of certain Preservatives permitted by the British Government.

ROYAL CANADIAN
PRESERVATIVES

fully conform to the requirements and are quite as
PURE, HARMLESS and EFFICIENT
as any of the more expensive imported articles.

MADE IN CANADA

under expert supervision.

Particulars on application to

CAMPBELL ARNOTT & CO.
114 VICTORIA STREET, TORONTO

C. Richardson & Co.

MANUFACTURERS OF

Cheese Factory, Creamery and Dairy Machinery

AGENTS FOR

Alderney Butter Color

“American” Cream Separators

St. Mary's, Ont.



THE
Harold A. Wilson Co.
 Toronto

SKATES
 BOOTS
 HOCKEY STICKS
 SWEATERS
 BOXING GLOVES
 FENCING FOILS
 ETC., ETC.

FREE Catalogue No. 32 FREE
The Harold A. Wilson Co.
 35 King St. West, Toronto

POTATO RAISING

As a business, or for home consumption, can be carried under old methods, but with **ONLY MODERATE SUCCESS**. Best results are obtained by using **CHURCH'S**.

BUG FINISH

It kills the bugs, and promotes the growth of the vines, which is essential to the development of the tubers.

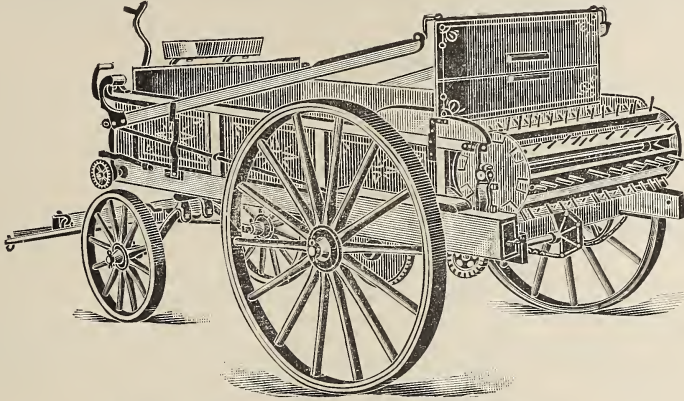
BUG FINISH is stocked by the trade generally, hence is handy to get, and don't cost much.

Every farmer should use **LAND PLASTER** about his stables every day in the year. It does away with offensive odors, and absorbs and retains the ammonia in the manure heap.

Information about **BUG FINISH**, **LAND PLASTER** and **ALABASTINE** sent free. Address:

THE ALABASTINE CO. LIMITED
 PARIS, ONTARIO

MASSEY - HARRIS 20th Century Manure Spreader



Massey-Harris 20th Century Manure Spreader

"The man who makes two blades of grass grow where one grew before, is a public Benefactor."—EMERSON.

MASSEY-HARRIS MANURE SPREADERS ARE WITHOUT A DOUBT THE FINEST MANURE DISTRIBUTERS ON THE FARMS OF CANADA. THEY PUT YOUR FARM AT DOUBLE ITS VALUE IN CROP PRODUCTIONS. MAKE YOUR FERTILIZER DOUBLE THE VALUE TO THE SOIL. THEY ARE THE ONLY TIGHT-BOX SPREADERS, SPREAD EVENLY FROM STARTING POINT, DO NOT CLOG AND BREAK THE BEATER. SIMPLEST, SUREST AND LIGHTEST DRAFT.

One man and team with a Massey-Harris Manure Spreader will do more work than four men and four horses with two ordinary Manure Wagons, and do it better.

Massey-Harris Co., Limited

Toronto

Brantford

Stratford

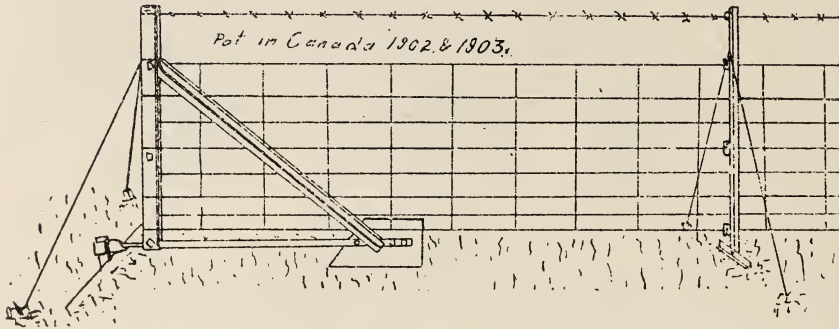
**Farm Implements
For All Kinds of
Good Farming**

PORTABLE FENCE

Manufactured only by

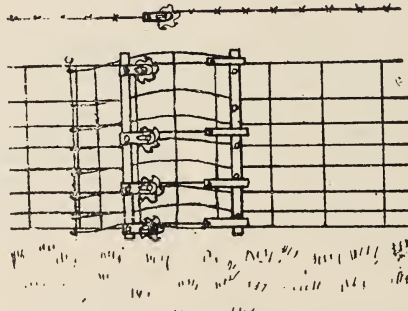
The Canadian Portable Fence Co. Ltd.

TORONTO, CANADA



SHOWING END and INTERMEDIATE POSTS of PORTABLE FENCE

**STRETCHER ALWAYS
IN PLACE IN MIDDLE
OF FENCE, READY
AT ANY TIME TO
TIGHTEN OR SLACK
OFF YOUR FENCE**



PORTABLE FENCE STRETCHER

**STRETCHER CAN
BE ADJUSTED TO ANY
LENGTH OF FENCE
CONNECTORS SUP-
PLIED TO SIMPLIFY
COUPLING UP
SECTIONS**

Did you read the article on FENCING in February O. A. C. REVIEW? (p.289). OUR PORTABLE FENCE meets the requirements of the case and meets the requirements of the farmers of Canada, because :—

1. It is PERFECTLY PORTABLE ; No Post-holes to dig.
2. No Staples to Drive ; WEB HELD in place by HOOKS.
3. No Waste Headlands ; No Permanent Fences between standing crops.
4. Quickly SET UP AND TAKEN DOWN.

It will pay you to find out more about it

Please mention the O. A. C. Review when answering advertisements.

MADE IN CANADA
FARMING WITH
DEERING MACHINES
MAKES FARMING WORTH WHILE

**BINDERS, HEADERS, HEADER-BINDERS, REAPERS, MOWERS, RAKES, TEDDERS,
 BINDER TWINE, CORN BINDERS, HUSKERS AND SHREDDERS,
 KNIFE GRINDERS, HARROWS, DRILLS, CULTIVATORS,
 SEEDERS AND FARM WAGONS.**

Canadian Farmers Unhesitatingly Endorse
DEERING

HARVESTING MACHINES, TILLAGE AND SEEDING IMPLEMENTS.

INTERNATIONAL HARVESTER COMPANY OF AMERICA

CHICAGO, U.S.A.

CANADIAN BRANCHES

**Montreal, P. Q.
 Ottawa, Can.**

**Toronto, Ont.
 Winnipeg, Man.**

**Regina, N. W. T.
 St. John, N. B.**

**Calgary, N. W. T.
 London, Ont.**

Made in Canada
North - East - South - West
McCormick

STANDS FOR PERFECTION IN
HARVESTING MACHINES
TILLAGE AND SEEDING IMPLEMENTS

**BINDERS, MOWERS, REAPERS, HEADERS, HEADER-BINDERS, RAKES,
 TEDDERS, CORN BINDERS, HUSKERS AND SHREDDERS, BINDER
 TWINE, KNIFE GRINDERS, HARROWS, DRILLS, CULTIVATORS, SEEDERS
 AND**

FARM WAGONS

INTERNATIONAL HARVESTER COMPANY OF AMERICA

CHICAGO, U.S.A.

CANADIAN BRANCHES

**Montreal, P. Q.
 Ottawa, Can.**

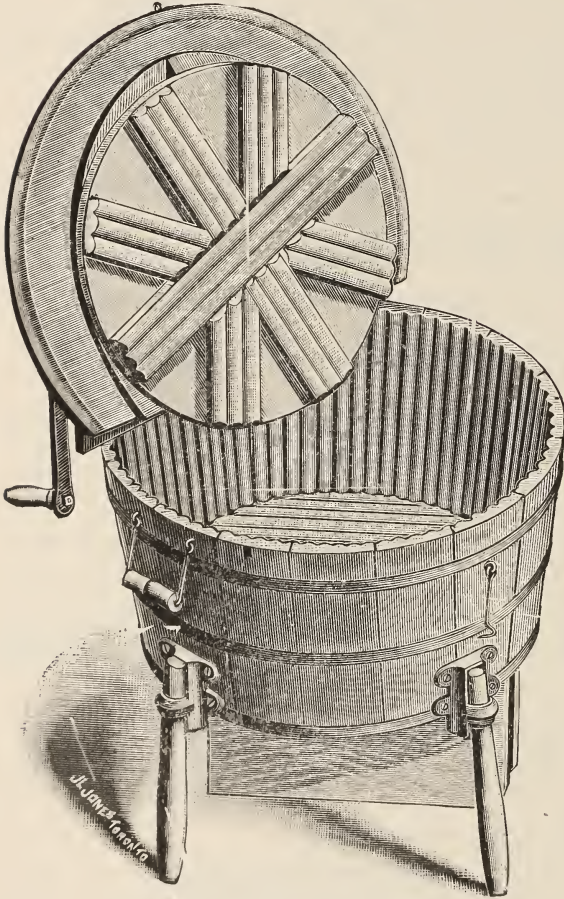
**Toronto, Ont.
 Winnipeg, Man.**

**Calgary N. W. T.
 London, Ont.**

**Regina, N. W. T.
 St. John, N. B.**

“STEPHENSON”

Washing Machine.



No. 2 with Wringer Attachment.

The most easily operated washer in the market.

A boon to the family.

Reduces labor, and saves time.

The machine will wash from 75 to 100 napkins in about five minutes, and about 40 to 50 towels in the same time.

From 4 to 6 sheets, or 8 to 10 sheets can be washed in the machine at once.

You can wash QUILTS or BLANKETS as easily as small articles, and wash them perfectly clean.

Agents Wanted Everywhere.

For Particulars Address:

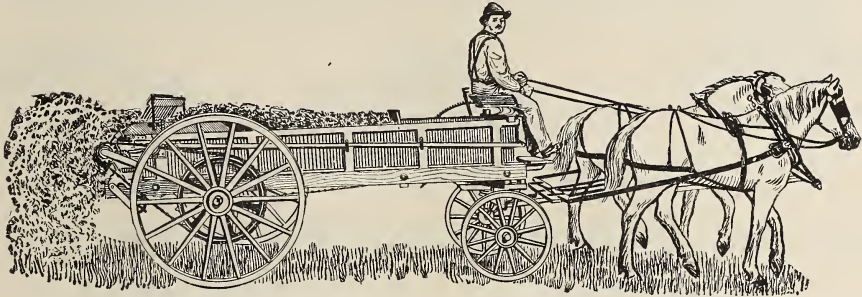
Taylor-Forbes Co.,

Limited

GUELPH, - CANADA

'Success' Manure Spreader

Pays for itself in one year by Saving in Labor
and Manure and the increased crops produced.



A "SUCCESS" MANURE SPREADER will economise labor more than any other farm implement.

It will make the manure go two or three times as far as when spread by hand, and every acre spread will produce from 10 to 15 per cent. more crop.

After the first year the results secured are all profit.

You can sit still and the machine and team will do the work.

With a "SUCCESS" you can spread a load in five minutes.

The spreading is even to the end of the load.

Our beater chain driving device gives us the easiest running and strongest machine on the market.

A Manure Spreader is a necessity on every farm. Investigate the situation and buy now.

Write for Booklet, "Worth its Weight in Gold."

Manufactured by

THE PARIS PLOW COMPANY, LIMITED
PARIS **ONTARIO**

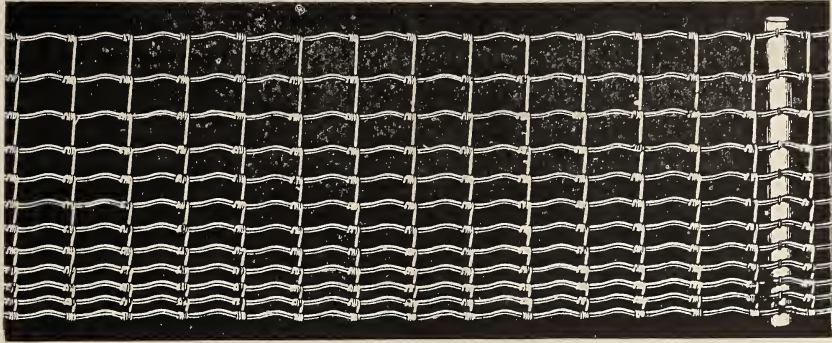
Western Agents—THE STEWART NELSON CO., Limited, Winnipeg, Man.

Agents for Quebec and Maritime Provinces—

The FROST & WOOD Co., Ltd.

Montreal, Quebec, St. John and Truro.

Cyclone Spring Steel Fence



For eight years we have been continually engaged in the manufacture of wire fencing and fence building machinery. In presenting for your consideration **CYCLONE SPRING STEEL FENCE** our foremost idea has been to make fence, with full provision for the changes of heat and cold, having the lateral wires made of high carbon Bessemer steel and the cross wires of the best annealed wire on the market, drawn especially for us. Every piece of fence we put out will be perfect in workmanship and material.

We also manufacture a full line of **LAWN FENCES**.

Write for Catalogue. Agents Wanted in every District.

Cyclone Woven Wire Fence Company

Dundas and Dufferin Sts., Toronto, Ont.

8,000 Canadian Agriculturists co-operatively United

GRAND SUCCESS FROM START TO FINISH

Farmers' Binder Twine Co.
LIMITED
Brantford.

Opposition of every kind helplessly helpless against such an aggregation.

The Kingdom of Denmark's mighty success at home, and with its products in the great markets of the world, is allowed to hinge wholly on true co-operation, properly operated.

Joseph Stratford, General Manager

Please mention the O. A. C. Review when answering advertisements

LADDERS!



Pruning comes in March and April.

Painting and Repairing April and May.

Hay Fork work June and July

Fruit Picking
August to November

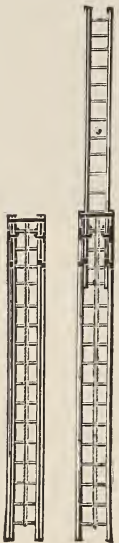
Storm Sash April and November.

Fire Protection January to December.

For all these you need a good ladder. The qualities of a good ladder are: *First—Safety*
Second—Handiness

The Waggoner Extension Ladder combines these qualities better than any other. There are lower priced ladders, but no other so really cheap. Our steel safety lock and our steel wire reinforcement enable us to combine strength and lightness in the highest degree.

Send for free descriptive circulars, prices, etc. When writing ask about our CLOTHES LINE REEL for the yard. The women want it—so do the men.



The Waggoner Ladder Co., Ltd
London, Ont.

MAXWELL'S

FAVOURITE CHURN

LIST.

NO.	HOLDS	CHURN
0	6 gal.	1/2 to 3 gal.
1	10 "	1 to 5 "
2	15 "	2 to 7 "
3	20 "	3 to 9 "
4	26 "	4 to 12 "
5	30 "	6 to 14 "
6	60 "	8 to 20 "



Patent Foot and Lever Drive

Patent Steel Roller Bearings

Improved Steel Frame

Bearings Bolted No Screws Used

Easy to Operate

Superior in workmanship and finish

If not sold by your dealer, write direct to

David Maxwell & Sons

St. Mary's, Ontario, Canada.

We Pay Special Attention

To the making of Suits, Overcoats and Trousers for O. A. C. Students.

Our stock is always new and up-to-date. We buy only the best material and employ only the most skilled workmen.

Our prices are such that you can save money on every garment we make for you.

R. J. Stewart

The Little Tailor Store

Quebec St., opposite Knox Church

WALTER E. BUCKINGHAM, B.A., LL.B.

Barrister Solicitor

Notary, Conveyancer, Etc.

Douglas Street, Guelph

Office Phone 175

Residence Phone 404

WHEN YOU ARE IN NEED OF CUTS IN HALF-TONE, ZINC & WOOD.

SEND TO

SPECIAL FACILITIES FOR PROMPT DELIVERY



16 ADELAIDE ST WEST

TORONTO

DESIGNERS.

ILLUSTRATORS.

COMMERCIAL PHOTOGRAPHERS.

The Goldie & McCulloch Co.

Limited.

Galt Ontario Canada

Extensive Builders of

Wheelock Engines, Corliss Engines, Ideal High Speed Engines, Gas and Gasoline Engines, Boilers, Pumps, Water Wheels, Flour Mill Machinery, Oatmeal Mill Machinery, Gyrators, Emery Choppers, Wood Working Machinery, Shingle Machinery Heading and Stave Machinery, Wood Rim Split Pulleys, Iron Pulleys, Shafting, Hangers, Friction Clutch Couplings, Friction Clutch Pulleys, Safes, Vaults and Vault Doors.



Should you be interested in any of the above we shall be pleased to furnish you Catalogues, Etc., if you will write us.

Reliability

Has been our motto in everything we sell whether for the

Garden, Field, Farm, or Dairy

Farm Seed Catalogue, Field Root Grains, Fodder Plants, Etc.

Flower and Vegetable Seed Catalogue, giving full particulars of the best Seeds for the Garden.

Market Gardeners' Catalogue, for the use of those who are raising Vegetables and Flowers for Market.

Bee Supply Catalogue, for Bee-Keepers.

Poultry, Dairy and Creamery Supply Catalogue, for Poultry Keepers, Cheese and Butter Factories and Home Dairies.

Wheat Catalogue, issued in the Fall.

Flowering Bulb Catalogue, also issued in the Fall.

We will be pleased to send any of these Catalogues to interested parties.

Darch & Hunter

"Seedsmen to the Canadian People."

London

Canada

FOUNDED 1863

Waterloo, Ontario.

The Waterloo Mutual Fire Insurance COMPANY

42ND FINANCIAL STATEMENT

RECEIPTS.		EXPENDITURE.	
Balance brought forward.....	\$212,433 35	Losses.....	\$160,829 67
Premiums.....	220,217 66	All other Expenses.....	89,869 38
Interest, Rent and Re-Insurance...	26,262 68	Balance.....	208,214 64
	<hr/>		<hr/>
	\$458,913 69		\$458,913 69
ASSETS		LIABILITIES, ETC.	
Real Estate.....	\$ 17,475 72	Unadjusted Losses.....	\$ 5,284 38
Bonds, Mortgages and Cash.....	178,121 12	Re-Insurance Fund.....	111,882 37
Other Assets.....	16,040 58	BALANCE.....	94,470 67
	<hr/>		<hr/>
	\$211,637 42		\$211,637 42
Cash Balance over all Liabilities...\$		94,470 67	
Unassessed Premium Notes.....		249,049 92	
Total of Assets.....		460,687 34	

Audited and found correct

(Signed) J. M. SCULLY, F. C. A. }
 (Signed) BENJ. DEVITT } Auditors.

WATERLOO, January 21st, 1905.

FRANK HAIGHT, GEORGE RANDALL, President. T. L. ARMSTRONG }
 Manager. WM. SNIDER, Vice-President. R. THOMAS ORR } Inspectors.

Chas. A. Cyphers' Announcement.



SINCE my withdrawal from the Presidency and General Managership of the Cyphers Incubator Co., a year ago, my "Model Incubators and Brooders" have become as well known as the "Cyphers," my older invention. That the newer invention, the "Model," has been doing better work than the older has also become well known.

The progressive poultryman needs the best, and will have it at any cost, but, at the same time does not like to pay a premium over that which another has to pay who is situated perhaps only across a river. To place my Canadian customers on an equal footing with their brother poultrymen across the border, avoiding the duty and giving them the machines at the same price at which they are sold in the States, I have decided to manufacture in Canada. I have made arrangements with MR. C. J. DANIELS, of Toronto, to take charge of the manufacture, and the Canadian branch will be entirely under his management. Mr. Daniels is too well known to Canadian Poultrymen to need any commendation from me. I place the Canadian business in his care with full confidence in his integrity and ability, and the assurance that my Canadian customers will receive courteous and honorable treatment at his hands.

CHAS. A. CYPHERS

Manufacturer,

BUFFALO, N. Y.

TORONTO, CANADA

Please address all Canadian business communications in the future to

C. J. DANIELS, 196-200 RIVER ST., TORONTO, CANADA

Please mention the O. A. C. Review when answering advertisements.

Free Zenoleum Booklets

"Piggies' Troubles"

Tells all about the prevention and cure of the common diseases of the hog. Written by scientific authorities. If you own pigs you should have one.

ZENOLLEUM

Veterinary Adviser

A valuable handbook concerning the many diseases common to cattle, sheep, horses, dogs, etc. Vest pocket size, handy and convenient.

"CHICKEN CHAT"

Deals with ailments and diseases to which poultry are liable. Prevention, cure and treatment are fully explained. Wonderfully interesting.

ZENOLEUM DISINFECTANT AND DIP

Non-Poisonous—Non-Irritant—Non-Explosive.

SAFEST, SUREST AND MOST ECONOMICAL GERMICIDE IN THE WORLD.

PRICE LIST.	(1 Gal. can, making 100 gallons Zenoleum solution	\$1.50)		
	2 " " " "	200 " " "	3.00	FREIGHT
	3 " " " "	300 " " "	4.50	PREPAID.
	5 " " " "	500 " " "	6.25	

Most Druggists sell Zenoleum. If yours does not, order of us. Canadian shipments made from Brampton.

ZENNER DISINFECTANT CO.
 BRAMPTON, ONTARIO. DETROIT, MICH.

FORTY COLLEGES ENDORSE ZENOLEUM

Avoid Disappointment

Buy Bruce's Seeds

Bruce's Re-Cleaned Farm Seeds

Farmers all over the Dominion are awakening to the fact that it pays to buy the very best seeds that can be procured, and our long connection with the best growers in the seed-producing districts gives us exceptional advantages in securing the best samples offered, while our cleaning facilities are unequalled. The large annual increase in our trade with the farmers of the Dominion is an evidence of the superiority of our stocks and of the personal attention we give to the interests of our patrons. Our first grades of Clovers and Timothy are in all cases export seed.

We offer as follows for early orders, subject to being unsold:

Clover Seeds

Per bushel 60 lbs

Alsike, 1st Grade	\$ 8 00
do 2nd Grade	7 50
do 3rd Grade	7 00
do and Timothy	3 50
Crimson, 1st Grade	6 00
Lucerne, 1st Grade	8 00
do 2nd Grade	7 50
Red, 1st Grade	9 00
do 2nd Grade	8 50
Mammoth, 1st Grade	9 00
do 2nd Grade	8 50
White, 1st Grade	13 50
do 2nd Grade	12 00
Yellow, 1st Grade	6 50

Grass Seeds

Per bushel, 14 lbs

Blue Grass, Canadian Fancy	\$ 1 10
do Kentucky, Fancy	1 75
Bromus Inermis, Fancy	2 00
Meadow Fescue, Fancy	1 75
Orchard Grass, Fancy	2 25
Red Top, Fancy	1 75
do Common	1 25
Lawn Grass, Bruce's	2 80
	Per bushel, 48 lbs
Hungarian	\$ 1 00
Millet, German	1 25
do Common	1 00
Timothy, 1st Grade	2 25
do 2nd Grade	2 00

Prices of Seed Grains, Feeding Stuffs and Poultry Supplies on Application

Remit 20 Cents Each for Two-bushel Cotton Bags

Our Beautifully Illustrated Catalogue of Seeds and Supplies—88 pages—mailed free to all applicants.

LITTLE GIANT GEARED HAND SEED SOWER

The best Seeder offered; gives universal satisfaction; \$1.75 each; smaller size, \$1.50 each.

John A. Bruce & Co.

SEED MERCHANTS

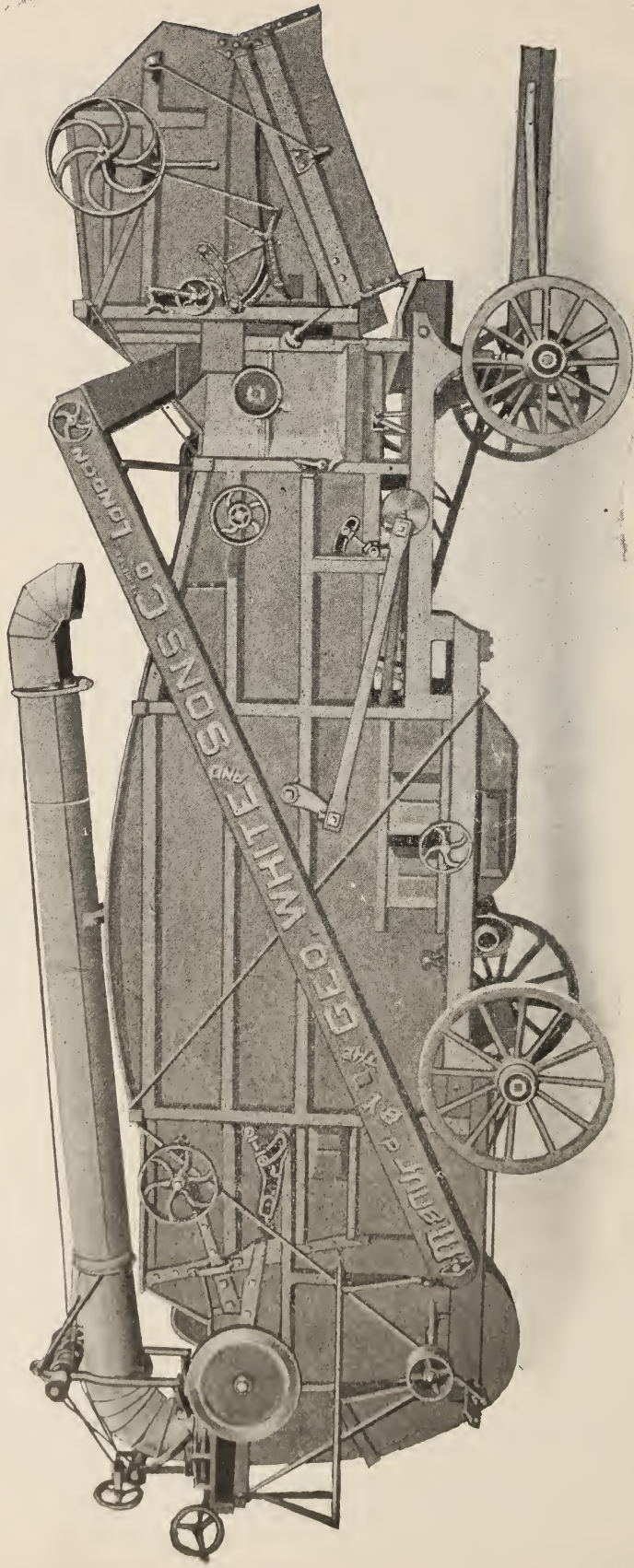
HAMILTON, CANADA

Established over half a Century.

Please mention the O. A. C. Review when answering advertisements

The New White Challenge Thresher

With Cutting Box Attached



Write us and we will send you some opinions of satisfied farmers and threshermen.

The GEORGE WHITE & SONS CO., Limited

London, Ontario



A Sure Money Maker On the Farm



When you buy a Cream Separator you cheat yourself if you don't get the machine that saves the most money for you. Cream repairs and oil all represent money. The

U. S. Cream Separator

holds the world's record for clean skimming. It will save you cream every day which any other separator would lose in the skim-milk.

Its substantial and simple construction insures extreme durability. It has no joints to work loose, no ratchet pin to break off, no exposed gears to be injured. With moderate care a U. S. will wear for years without repairs.

The working parts are so adjusted that they require little oil and waste none.

You can't make your cows pay as they should without a U. S. Cream Separator. Don't delay any longer, write for a free illustrated catalogue to-day.

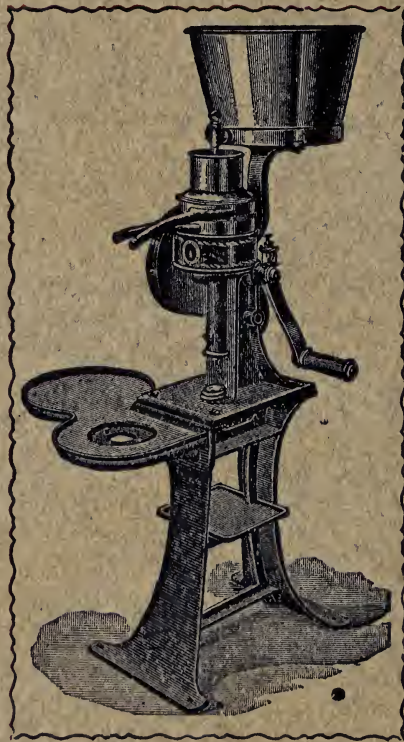
VERMONT FARM MACHINE CO.
BELLOWS FALLS, VT.

Warehouses at Chicago, Minneapolis, Omaha, La Crosse,
Wis., Sioux City, Ia., Kansas City, Mo., Salt Lake City,
Utah, San Francisco, Cal., Portland, Ore., Buffalo,
N.Y., Portland, Me., Montreal and Sherbrooke,
Que., Hamilton, Ont. Address all letters to
Bellows Falls, Vermont.

De Laval Cream Separators

Are enough better than the best
of the others to make it
Business to get the

DE LAVAL



Grand Prize Winner

The De Laval Separator Co.

77 YORK ST., TORONTO
WINNIPEG MONTREAL