

Vol. XVII.

No. 3.

The
DANCING
Review

Christmas Number,

1904

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 their. Each of our



guarantee is absolute knowledge of Tubular quality. Several tests of Tubulars surpass the doubts of every time. Here is a highlight. On Aug. 2, 1904, we attached a No. 8 Dairy Tubular to a mechanical driving apparatus that turns the machine non-manual. This Tubular was not specially selected, but was taken at random from the many finished Tubulars in our warehouse. This Tubular, at time 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



Dairy Tubular Bowl

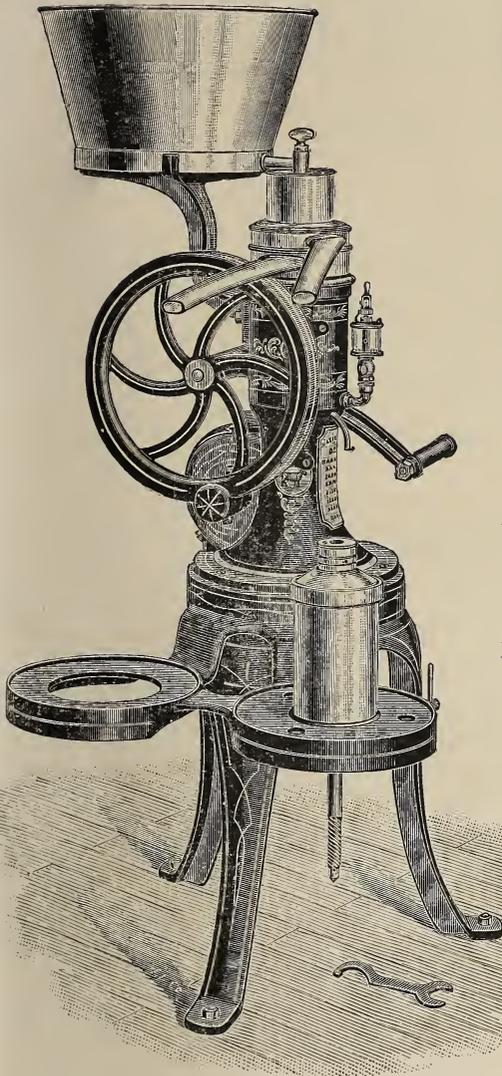
Machine under test	No. 8 Tubular.
Capacity	900 lbs per hour.
Hours in operation	750.
Total time adjusting	Not any.
Total time oiling	Not over three minutes.
Total repairs	Not any.
Total oil used	Not over two quarts.
Revolutions of crank	1,975,075.
Revolutions of bowl	120,000,000.
Number pounds separated	375,000.

375,000 lbs of milk is about equal to the yield of ten average cows for a period of 11 years, 8 months and 28 days. This test is unequalled. It confirms all we claim for the Tubular—its 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 Searles Co., The Searles Co.
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.

IOWA STATE COLLEGE

of Agriculture and the Mechanic Arts

AMES IOWA

A FACULTY of eighty-eight Professors and instructors; an Engineering Hall that Dr. Thurston pronounced at its dedication "The best of its kind in the United States"; courses in Science and General Domestic Science; for four year courses in Agriculture, viz: in Agronomy, including departments of Soils, Agricultural Engineering and Farm Crops; in Animal Husbandry; in Dairying and in Horticulture; four year course in Veterinary Medicine; four year courses in Civil Engineering, Mechanical Engineering, Electrical Engineering and Mining Engineering. Among the new buildings are a fire-proof Agricultural Engineering Hall, a brick Stock and Grain Judging Pavilion, a new Greenhouse, new Central Hall, costing upwards of \$400,000, in course of erection. A large number of graduate students in Agriculture and Animal Husbandry, in Dairying and in the Sciences. For catalogue and information address the President,

ALBERT B. STORMS, Ames, Iowa

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., Greta, 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 Denver, New Westminster, Rossland, Vancouver, Vernon, Victoria.

IN NEWFOUNDLAND.—St. John's—Bank of Montreal, Birely 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. Hebdon and J. M. Greata, 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.

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

Agricultural College

GUELPH,  ONTARIO



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.

FARMERS'

Sons and Daughters

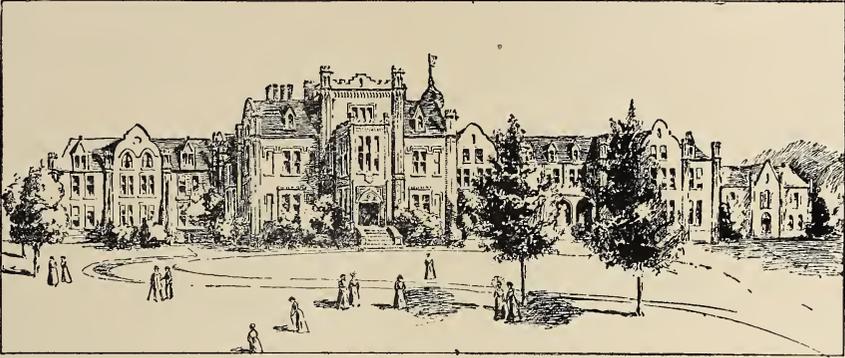
REQUIRE a special Business Training in this age, quite as much as any other class of young people. We provide a very special course in Farm Accounting and Business Methods, which can be completed nicely in a term of three months, or taken by *mail* in a term of a year or more. It is quite inexpensive either way you take it, and it has proved most valuable to many who have studied with us and are now applying the results with great success and satisfaction in their agricultural pursuits. Write for our Prospectus and our Booklet, "Back to the Farm." Address

*Central
Business College*

TORONTO

W. H. SHAW, Principal.

ONTARIO LADIES' COLLEGE



and

Ontario Conservatory of Music and Art, WHITBY, ONTARIO

The Largest and Best Equipped College for Women in Canada.

Palatial buildings, beautiful grounds, magnificent site, overlooking Lake Ontario, steam heating, electric lighting, modern sanitation, large pipe organ, concert grand pianos—in short, a pleasant

Healthful Home of Christian Culture

As well as a live, progressive institution, offering highest facilities for study of

Literature, Music, Art, Oratory and Commercial and Domestic Science.

Proximity to Toronto gives city advantages without the distraction incident to city residence. Several special trains from the city during the year.

Write for Calendar or further information to

REV. J. J. HARE, Ph. D., Principal.

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.

FACTS

Our Specialty ❖ ❖

Preparing Teachers and Students for Junior and Senior Non-Professional Standing; Junior and Senior Matriculation; School and College Examinations, Etc.

Our Record ❖ ❖

For two years we have passed an average of over 95 per cent. of our candidates at public examinations.

Our Faculty ❖ ❖

Is the Best. We *teach by mail*. Less than 2 per cent. of our Students drop their courses.

Our Curriculum ❖ ❖

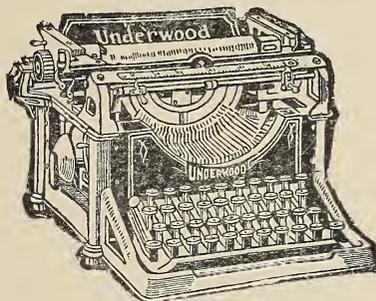
Includes nine departments of Study, *i. e.*, Academic, Commercial, Industrial, Household Science, Library Science, Advertising, Agricultural Science, Civil Service, Insurance Courses, Etc.

Send for Announcement, Etc.

Canadian Correspondence College, Ltd.

161 Bay St., 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.

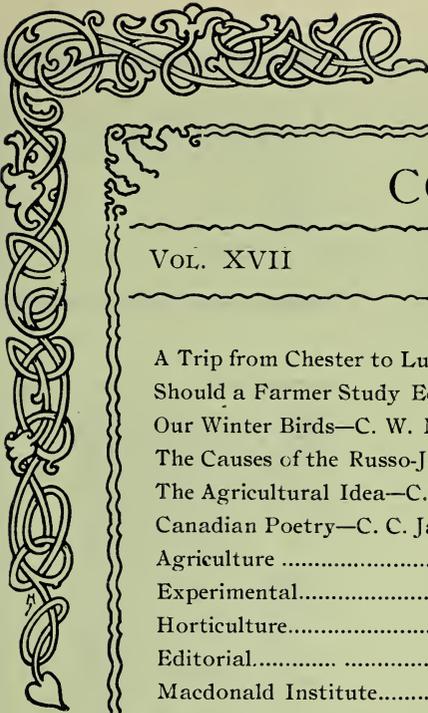
Plants.

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

DECEMBER.

No. 3.

	PAGE
A Trip from Chester to Ludlow—W. P. Gamble.....	115
Should a Farmer Study Economics—W. J. Brown.....	121
Our Winter Birds—C. W. Nash.....	124
The Causes of the Russo-Japanese War—B. R. Nag-Tany.....	129
The Agricultural Idea—C. A. Zavitz.....	133
Canadian Poetry—C. C. James.....	142
Agriculture	145
Experimental.....	153
Horticulture.....	165
Editorial.....	179
Macdonald Institute.....	182
Book Reviews.....	189
College Life.....	191
Our Old Boys.....	199
Athletics	206
Locals.....	211

ADVERTISING.

- Agricultural Implements and Sundries :—Pages 216, xx, xxi, xxxiv, xxxvii, xxxix.
- Railways, Banks, Insurance and Financial :—Pages ii, vi, viii*b*, ix, x, xi, xii, xxii, xxx*b*.
- Newspapers and Journals :—Pages xxx*a*, xxxi, xxxii.
- Business Houses for you in Guelph :—Pages xxiii, xxiv, xxv, xxvi, xxvii, xxviii, xxix, xxx, xxxiii, xxxiv, xxxv.
- Household Furnishings and Sporting Goods :—Pages xiii, xv, xx, xxvi, xliii.
- Educational :—Pages ii, iii, iv, v, vi, vii, xli.
- Cream Separators and Dairy Supplies :—Both inside and outside Cover, and pages i, xvii, xlii.
- Seedsmen and Farmers' Supplies :—Pages x, xv, xvi, xviii, xx, xxxiv, xxxv, xxxvii, xxxviii, xl, xlii, xliiv, xlv, xlvi.
- Books and Book Publishers, Kodaks, Engravers, Typewriters and Office Specialties, Builders and Contractors :—Pages vii, viii, xiv, xv, xxxv, xxxviii, xli, xliii.
- Crown Lands :—Page xxxvi.



An Ideal, Strong, Vigorous COMPANY



Is 34 years old. Has Assets now exceeding \$8,000,000. Has a surplus (on Government Valuation Standard), of nearly \$900,000. Has nearly 30,000 policyholders. Has nearly \$40,000,000 of Insurance in force. Has paid over \$6,500,000 in cash to policy holders, or to their families, and still has in Reserve, for their security, over \$7,000,000, in solid assets.

✻ SECURITY ✻

This Company holds in **Reserve a Greater Sum** than the Government Standard calls for, thus affording its policyholders **Absolute Security**.

✻ IT LEADS ✻

This Company **Stands at the Head** of Canadian Companies, Canadian business, in the net amount of insurance in force **Gained** over all its competitors during the past **Five Years**, as shown by the Government Reports.

HEAD OFFICE, WATERLOO, ONT.



Robert Melvin,
President.

A. Hoskin, K. C.,
Hon. Justice Britton, Vice-Presidents

Geo. Wegenast, Manager.

W. H. Riddell, Secretary.

Geo. Chapman ✻

General Agent.

McLEAN'S BLOCK ✻

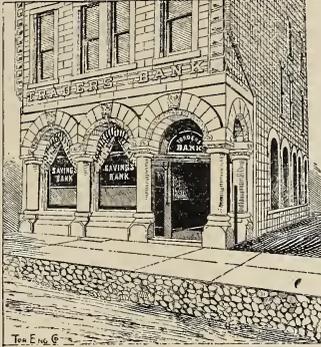
GUELPH. ✻

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**

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 rates 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.

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.

Royal Agricultural Society of England.

TELEGRAPHIC ADDRESS: "PRACTICE," LONDON. TELEPHONE No. 3675 GERRARD.



13, HANOVER SQUARE,

LONDON, W. *June 30th* 190*3*

DEAR SIRS,

I take pleasure in handing to you the enclosed Cheques,
Nos *22001** *22003*, value £*50* v £*10*, for *First Prize awarded*
and return of Deposit in Hind Engine Trials
and shall feel obliged if you will kindly present it through a
Banker at the earliest possible date.

The receipt at the foot of the Cheque must be signed by
you and dated before presentation to the Bankers, as the Cheque
without the receipt is of no value.

Yours faithfully,

ERNEST CLARKE,

Secretary.

Messrs Gould, Shapley & Muir Co, Ltd

No acknowledgment to the Society is required.

N.B.—Cheques outstanding more than six months after date will not be paid by the Bankers until certified by the Secretary

GOULD, SHAPLEY and MUIR CO., LIMITED, BRANTFORD, ONTARIO.

Also Manufacturers of high grade Gas and Gasoline Engines.

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



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**

CHRISTMAS

SINGLE FARE

Good going Dec. 24, 25 and 26, returning until Dec. 27, 1904. Good going Dec. 31, 1904, and Jan. 1 and 2, 1905 ; valid for return until Jan. 3, 1905.

FARE AND ONE - THIRD

Going Dec. 23, 24, 25, 26, 30 and 31, 1904, and Jan. 1 and 2, 1905 ; returning until Jan. 5, 1905.

Between all Stations in Canada, Port Arthur and East
Full particulars from any Canadian Pacific Agent, or
C. B. Foster, D.P.A., Toronto.

J. HEFFERNAN,
City Agent.

A. C. BROWN,
Depot Agent.

NEW CENTURY BALL - BEARING WASHING MACHINE

MADE RIGHT
BUILT
TO LAST



RUNS LIGHT
NEVER
SURPASSED

Not the cheapest, but decidedly the best Washing Machine made. Five to seven minutes only required for a tubful. The operator need not stand when using it, and there is practically no wear on garments. Full information given on application.

The Dowsell Manufacturing Co., Ltd.
Hamilton, Ontario.

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,"

Guelph Foundry Co.

LIMITED.

Office and Warerooms, Paisley Street, Guelph, Ontario.

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

CANADIAN OFFICE & SCHOOL FURNITURE CO. LIMITED
PRESTON, ONT.



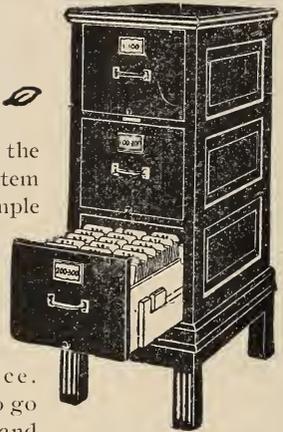
OFFICE, SCHOOL, CHURCH, & LODGE FURNITURE
 FINE BANK, OFFICE, COURT HOUSE AND DRUG STORE FITTINGS
 A SPECIALTY

SEND FOR CATALOGUE

Vertical

Filing

Have you tried the Vertical Folder System of Filing? By this simple method all correspondence to and from any single customer is kept intact, ensuring the quickest reference. Space too limited to go into detail. Write and we'll be pleased to send you a circular which will tell you just how the successful business houses are run. We keep a Full Line of Office Furniture (in wood and steel) and Labor Saving Devices on hand.



KEEP-TOGETHER SYSTEM

The Office Specialty Mfg. Co., Ltd.

55 Yonge St. Factories, Newmarket.

New City premises almost ready

97-103 Wellington St. West, Toronto

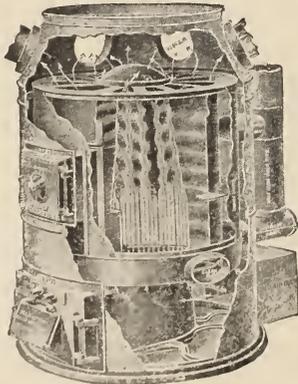
KELSEY

✻ ✻ CORRUGATED
 ✻ ✻ WARM AIR

✻ ✻
 ✻ ✻

GENERATORS

SAVE
 MONEY
 WHILE
 THE
 SNOW
 FLIES
 HEAT
 MAKERS
 FUEL
 SAVERS



NOTE CAREFULLY

Long Hollow Sections
 Great Heating Surfaces
 Large Air Capacity
 Cast Iron Back Pipes

KELSEY RECORD

3 only, made and sold in 1889

Over 25,000 at present in use

More than 2,500 in use in it's home city
 (Syracuse, N. Y.)

Used for proper and economical warming and ventilating of nearly 100 Canadian Schools.

Over 70 per cent of an increase in sales in the U. S. for September and October 1904, as compared with same months in 1903.

Sales in Canada for first six months of 1904 were considerably more than doubled as compared with 1903. Sales have largely increased each and every year.

Direct Contracts Made. Proper Results Guaranteed. Send for 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

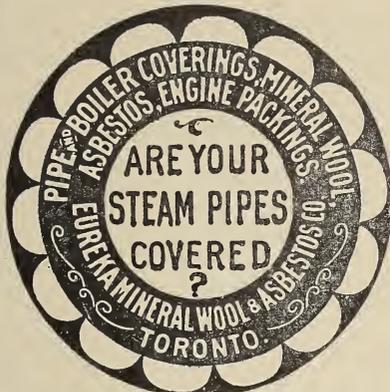
Piano-Players, Organs,

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.

FLOWER POTS

Do you use

Foster's Pots

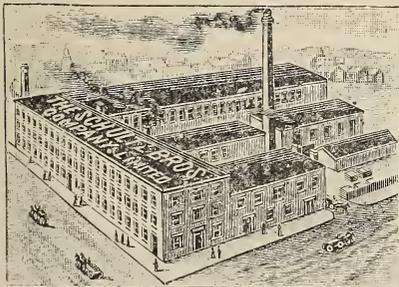
Strong, Durable, Light



POROUS AND CHEAP
Those who do will have no other
Post Card brings Price List and Catalogue

THE
Foster Pottery Co'y.
LIMITED
HAMILTON - CANADA

ESTABLISHED OVER 30 YEARS



Builders and Contractors.

Manufacturers of Packing Boxes
and Novelties.

WE SOLICIT YOUR PATRONAGE.

Contractors of the Massey Hall and Library,
Macdonald Institute and Macdonald Residence
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,
DECEMBER, 1904.

No. 3

A Trip from Chester to Ludlow.

BY W. P. GAMBLE.



DURING the past summer it was the writer's good fortune to accompany Professor Day on a trip through the south of England. Our passage across the ocean was uneventful, and everyone was delighted when, on the eight day after leaving Montreal, we sighted the bold, rugged outlines of the Irish coast. The weather on this day was particularly charming, and most of the passengers spent the hours on deck admiring the rocky coast, now hidden by the mist, and again standing forth in majestic grandeur as the clouds were shifted about by the breeze. The flight of the great gulls, too, was interesting. Sitting on the deck we watched these beautiful birds as they flew from point to point among the rocks, or swooped down by the side of the ship to pick up morsels of biscuit which the passengers had thrown overboard. Thus the hours flew quickly by. In the evening we had the pleasure of witnessing a most glorious sunset, and the long summer twilight which followed was a source of new delight to many of our company.

Everyone was on deck at an early hour on the following morning to watch the course of the steamer as she made her way up the river Mersey. The waters of the river as they empty themselves into the sea, are extremely muddy, a fact which elicited the remark from one of the passengers that "the quality of Mer(c)y is not strained." The chief objects of interest which meet the passenger's gaze are the outer walls and lofty warehouses of the Liverpool Docks. These immense docks are the most interesting feature of this great commercial city. They flank the Mersey for a distance of six or seven miles, and cover a total water-area of nearly four hundred acres.

We landed shortly after eight o'clock, and tarried for a while to watch the unloading of the cargoes from many large steamers. As one great ship was relieved of her cargo of merchandise she would move along to give place to another, and so the work went on. Later in the day we made a tour of the city, and in the afternoon we left by train for Chester.

Chester is, perhaps, one of the most

interesting cities in England to the average tourist. Here the Romans established a permanent camp about A.D. 60. After the departure of the Romans, Chester was occupied in turn by the Welsh, the Saxons, and the Danes. In 607 it was destroyed by Aethelfrith of Northumbria. After that time the city is supposed to have been desolate until 894, when the Danes found refuge in it, and held it for a year against King Alfred. Chester was the last city in England to yield to William the Conqueror. In the Great Civil War the citizens held out stoutly for Charles I., but were finally starved into surrender.

Chester is beautifully situated on the river Dee. The walls completely surround the city, a circuit of nearly two miles, forming a delightful promenade, from which we obtained a splendid view of the Cathedral and the country round about. The ascent to the walls is made by a flight of steps. The Phoenix Tower, near the point from which we started, bears the inscription "King Charles stood on this tower Sept. 25, 1645, and saw his army defeated on Rowton Moor." Continuing our walk we next visited the Water Tower. This Tower contains a small museum. There are also some interesting Roman remains in the garden outside.

The cathedral, though not one of the largest in England, has many interesting features. It was originally the Abbey Church of St. Werburg. The first church erected upon the site appears to have been built in the 10th century. It was reconstructed in 1095, and part of the present walls are remnants of that structure. The work upon the present church began sometime in the 12th century. The whole eastern part of the church is Early English in style, the rest

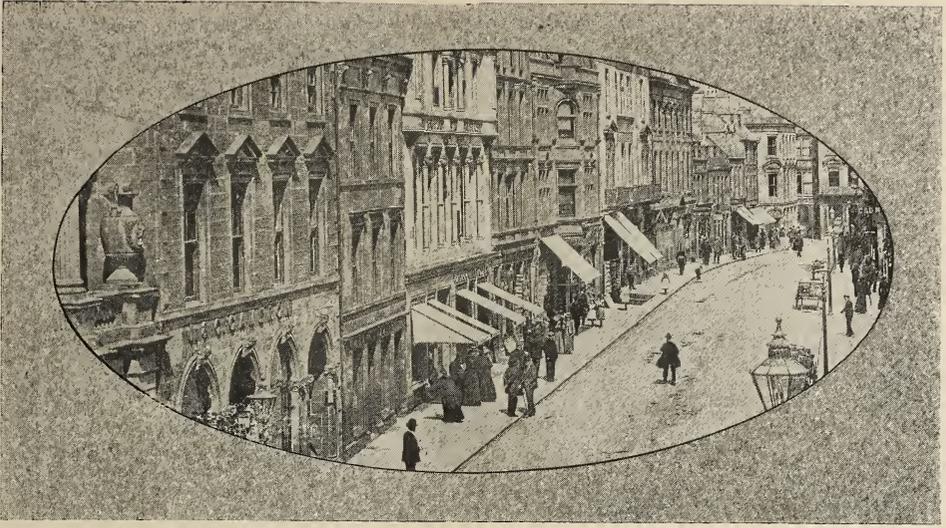
is decorated with perpendicular additions and attractions. The stalls in the choir are rich Perpendicular work of the 15th century, unsurpassed in its way.

The most curious and unique feature of the two main streets of Chester are the Rows. Besides the ordinary sidewalk of these streets there is a continuous covered gallery through the front of the houses. On this "upstairs street" all the better class of shops are situated, the others being beneath the level of the roadway.

Another interesting feature of this quaint old city is the old houses with their timbered fronts and carved gables. Among these the mansion or "Palace" of the old Earls of Derby, is probably the most interesting. This building is now occupied by the humblest class of tenants. The wood in the front of the building is richly carved and is well worthy of the admiration of the thousands of tourists who throng to examine it.

On the evening of our first day in Chester, we went out by the electric train to a small village (Saltney) a few miles from Chester. The pastoral scenery between these points is unsurpassed by any in England. There is an attraction in the landscape which is hard to explain, and even more difficult to describe. Our impression was that Nature had grown mellow under humid skies, as in our fiercer climate she grows harsh and severe.

From Saltney we had a clear view of the Clwydian Hills some miles distant. The sun had just gone down behind a broad, dark cloud as we reached this small town, but the beauty of the landscape, seen to best advantage in the summer twilight, and a certain pensive, reminiscent feeling in the air itself amply repaid us for the lack of sunshine.



Up-to-date Business Street.

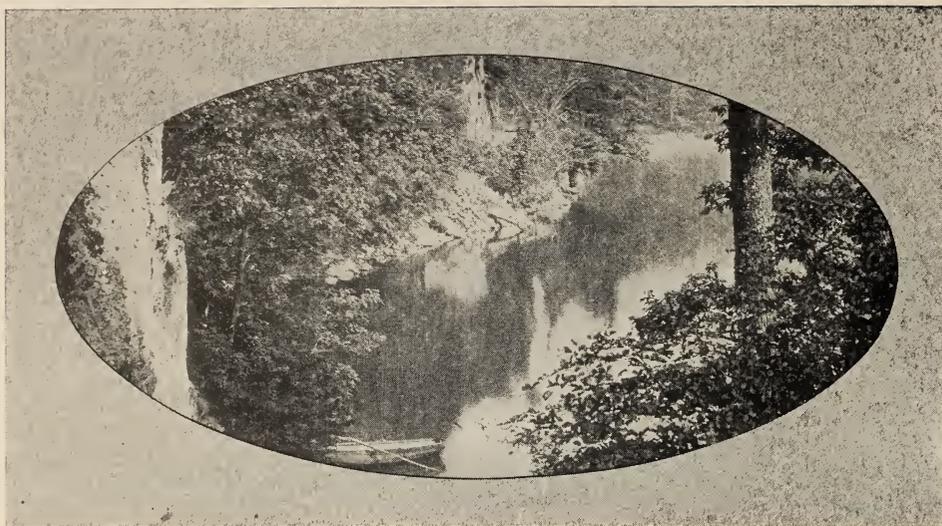
On our way back to the city we were very much interested in watching the crowds of people as they leisurely sauntered through the walks and drives which surround Chester. All worry and care appeared to be left behind, and they were out to enjoy the grandest scenery in this grand Old Land. We were indeed sorry that our duties would not permit us to spend more time in this delightful spot, but as we had many places to visit we decided to leave the next day on the "Old Times" stage coach for Shrewsbury.

The morning was cold and gloomy, and the weather forecast was not wholly encouraging, but we were cheered by the hope that the day would be fine. Our hopefulness was justified in a great measure, and by noon the heavy clouds had dispersed, and bright sunshine, not indeed too oppressively hot, with a fresh, pleasant breeze to temper it, gave promise of ideal conditions for a most delightful drive.

We left Chester about eleven o'clock

and after a brisk drive of about an hour, behind four spirited horses, we arrived at a small village called Rossett. On the way we passed Eaton Hall, the seat of the Marquis of Westminster. It is said to be one of the most elegant mansions in England. The park surrounding the Hall, is extremely fine. Grand old trees line the driveway which increase the impressiveness of this fine country seat.

Leaving Rossett the coach road passes through some of the very finest agricultural land in Chester. A rich farming landscape spreads around us. Away to the right we can plainly see the gently undulating outlines, and smooth, grassy tops of the Welsh Hills. To the left is a beautiful stretch of pasture land; again as we move along our view is obstructed by huge trees. Passing these we catch a glimpse of a beautifully winding brook, whose silvery waters dance in the glorious sunshine. Anon we pass a herd of deer grazing peacefully in a hedge-encircled field, and further we see



Forest Glade.

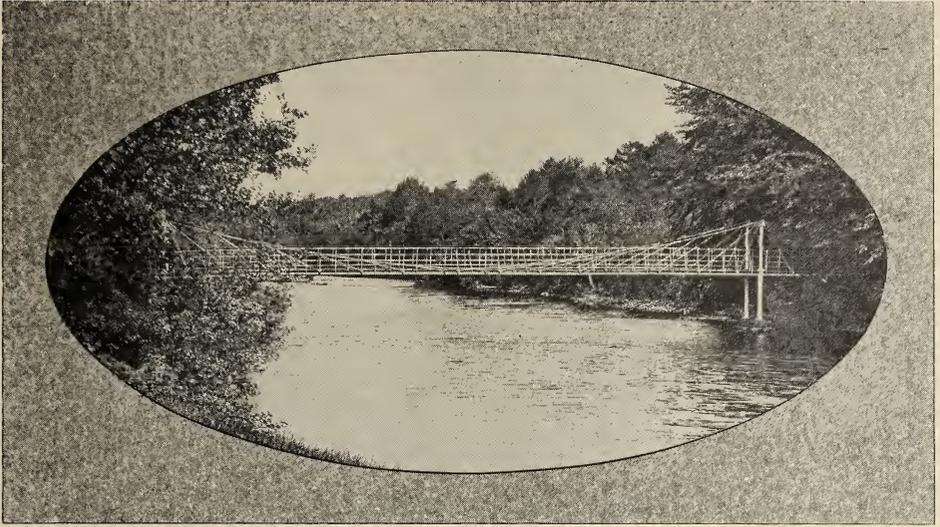
numerous rabbits making a hasty retreat at the sound of our horses' hoofs beating along the hard, stone road. Sometimes the road winds through the landscape like a footpath with only a hedge between it and the rank growing grass. An occasional field of grain seems strangely out of place in this pastoral country. All along the way the air is filled with the odor of the meadow-sweet in bloom. A wild rose here and there in the hedge, or a wild clematis nearly ready to bloom next attracts our attention. All these and other cases equally as interesting meet our gaze as we glide along. It is quite impossible to adequately depict scenes such as this, but the reader may be able to gather some idea of the varied beauty of this typical English scenery.

At Gresford we changed horses and continued our drive through scenery which rivals even that of the English Lake District. We next passed in succession Wrexham, Marchwiel and Overton Bridge. At the latter place we again changed horses and continued our drive

to the very picturesque little town of Ellesmere. Here we lunched, after which we pursued our journey along the beautiful, winding road which leads to Cockshut. Everywhere there is a marked repose and moderation in the scenery. The whole appearance of the land from Ellesmere to Shrewsbury bespeaks the action of slow, uniform conservative agencies. The dominant impression all along the route is repose. It is hard to imagine a more restful land to the eye. This look of repose is, no doubt, due in part to the maturity and ripeness brought about by time and ages of patient and thorough husbandry, and partly due to the gentle, continent spirit of Nature herself.

Shrewsbury, the home of Charles Darwin, is picturesquely situated on a hill surrounded on three sides by the Severn. It was once an important position on the Welsh march, and was at one time surrounded by walls, of which but few traces remain.

A short distance from the station



An English River Scene.

stands the Castle of Shrewsbury, which was founded by a vassal of William the Conqueror. The Castle is now used as a barracks.

The house in which Charles Darwin was born stands on the Mount which overlooks the Severn. The Welsh bridge which crosses the river is but a short distance away. Crossing this bridge we return through the Mardol to the centre of the town, where many up-to-date business houses may be seen.

Leaving Shrewsbury we proceeded by train to Ludlow. The latter is an extremely interesting old town with many fine, old houses. It is prettily situated at the confluence of the Teme and the Corve. In years gone by it was the seat of the Lords President of Wales, whose castle, still magnificent in decay, was built in the twelfth century. It was here Milton wrote his "Comus" to celebrate the appointment of the Earl of Bridgewater to the office of Lord Marcher, and a great part of Butler's Hudibras was also written with-

in its walls. The hall in which Comus was first presented in 1634 is still in situ.

There are many beautiful walks in the neighborhood of Ludlow ; in fact a walk in any direction is certain to prove interesting. The whole country abounds in the most beautiful scenery. Nowhere is the foliage of the trees more dense and massive than in this part of England. It is probable that here, as in other parts of Great Britain, the leaves of the trees droop more, and the branches are more pendent because of the slow, dripping rains and excessive moisture, which fall in this and many other parts of England. The rays of light are fewer and weaker, and the foliage disperses itself so as to catch them all, and thus presents a fuller and broader surface to the eye of the beholder.

It is quite impossible in an article of this kind to give any correct impression of the South of England, but perhaps enough has been said to give the reader a faint conception of a land, every foot of which is a well-kept lawn or garden.

The repose of the landscape is enhanced, rather than marred, by the part that man has played in it. How those old, arched bridges rest above the streams; how easily they conduct the trim, perfect highways over them: Then the ivy-clad walls and ruins, the finished fields and rounded hedgerows, the embowered cottages and that gray massive architecture all contribute to the harmony and to the repose of the landscape. One cannot well overpraise such rural and pastoral beauty, the beauty of fields, parks, downs and holms.

The dreamy peacefulness of the country through which we passed was everywhere evident. Indeed to drive on a "stage coach" from Chester to Shrewsbury and Ludlow means to be saturated with the impression that nowhere in the world can one obtain a better idea of the orderly, the permanent,

the well-kept in the works of man, and of the continent, the beneficent, the uniform in the works of Nature. It is here we see the most perfect bit of garden-lawn of England; and the history of many centuries written in grass and verdure, a district where waste and desert are unknown. The fields so green and peaceful; the cattle beaming contentment; the flocks of sheep grazing peacefully on the hillsides; the streamlets that have never left their banks; the open forest glades, half sylvan, half pastoral, clean, stately, full of long vistas and "Cathedral-like aisles." Such were the varied scenes through which we passed. Living among such scenery, one can readily understand why this beautiful country has so dominated the affections and imaginations of our Artists and Poets.



Giant's Causeway.

Should a Farmer Study Economics?

BY WALTER JAMES BROWN.

EVERY year the practice of agriculture is becoming more scientific and more truly professional. A few years ago it was a common thing to hear people ask, "Of what use is an education to a farmer?" Then they would question the utility of a knowledge of chemistry, botany, geology, physics, etc., to the practical farmer. Conditions are changing rapidly. Thoughtful people now realize that successful agriculture requires a liberal intellectual endowment, wide and accurate knowledge and high grade technical skill. Those who have the interest of the country at heart no longer attempt to fix the maximum for the farmer's education. No intelligent man now suggests to the farmer that he is wasting his time in studying sciences. The fact is that the farmer should know so many things that it is difficult to state just what he may leave out of his curriculum. He has a trade to learn, just as any other mechanic, only in his case he must learn to do many things instead of one thing. He has to learn something of commerce, how to buy and sell, how to keep his farm books and how to make his business pay. Up to twelve or fifteen years ago a farmer who had met these two requirements was fairly successful. He was so considered. But to-day the farmer must also be a scientist, or at least be able to apply, in his own practice, the teachings of science and the modified results of scientific investigations.

If the farmer has a trade to learn, then must get a business education and be trained to conduct commercial transactions with intelligence and skill, and still further, must become familiar with many branches of science to be able to utilize them in his calling, are we not asking him to do enough? How can we expect those who have very little education to do so much? The farmer, of all men, should have the best education. He needs it most. Everything he does requires knowledge. Everything about him appeals to the intelligence. If he has eyes to see he can learn something new every minute in the day. But to be a farmer means more than being merely a tiller of the soil, however delightful. In Canada it means to occupy

a position of first importance in the nation. This is an agricultural country, the majority of our people are farmers, the bulk of our capital is invested in agricultural lands and we derive the greater proportion of our wealth from agricultural products. Therefore, the farmer is our most important citizen. From a selfish point of view he is more vitally interested in everything that effects the country's progress than any other man. There is hardly a problem offered for solution, or a question suggested to the public mind, that does not directly or indirectly touch the individual farmer. Then why is it, that in thousands upon thousands of cases, the farmer is found absent from the point of duty, or is passed over when men of ability are required? There is but one answer. It is a question of education!

Should a farmer study economics? In other words should he have an intelligent grasp of the fundamental principles operative in business, in governmental functions and in society. As a citizen no more important matters can engage his attention. [The word economics as here used embraces the terms political economy, political science and sociology.] The farmer should take a conspicuous part in the government of his country and should put away his politics between elections and direct his attention to the history and functions of government, the principles of jurisprudence, the study of constitutional history and development. He will find an abundance of interest and variety in studying our military and judicial systems, national, provincial and municipal forms of administration, etc. Then if he turns his thoughts to the social needs of the rural districts he will find some of the most difficult and vital problems in our national life awaiting solution. Too many farmers are ashamed of their calling and speak discouragingly of it to their children. They should rather be ashamed of themselves and instead of driving their boys and girls into the cities, they should make the farm so attractive and life there so interesting, dignified and remunerative that the young people will be proud to follow agriculture as a profession and happy in the opportunities offered by country life for social pleasures and intellectual achievement.

Another phase of this important subject of economics which should receive careful attention, is the study of the production, distribution and consumption of wealth, or as it has been called by some, "the science of earning a living." This involves questions of labor, exchange, methods of employing capital, land, rents, taxes, supply and demand, markets, trusts, monopolies, money, banks, interest,

trade, profits, wages, public and private expenditures, public finance, railways, corporations, transportation of products, profit sharing and co-operation, etc. Every one of these questions is a matter of importance to the farmer and should be studied by him.

In future articles an effort will be made to throw some light on a few of the more important problems awaiting our solution.



Our Winter Birds.

BY C. W. NASH.



FEW years ago I read an article in one of the famous British magazines in which the writer (an eminent Scotch naturalist) stated that the "Snow Bunting and the little blue Sparrow, called the Snow-bird, or Chip-bird, are the only two birds which brave the whole Canadian winter, but the latter is domestic and clings to man's abodes for shelter and sustenance," and I thought at the time that I should very much like to take the writer of that article out for a walk on some fine winter day through one of our woods and show him the variety of animal life which is to be found there during our much abused winter season. One properly selected walk would, I believe, convince him that very many birds not only *brave* the severity of our Canadian winter, but that, like our human population, they live through it in the fullest enjoyment of existence.

Very few of our own people even know what a large number of birds spend the winter months in this Province, because, as a rule, country walks are not popular at that time of the year, and our birds as yet have not generally acquired the habit of seeking food and safety in the vicinity of houses; some of them, however, and the number is increasing every year, do frequent our lawns and gardens, more particularly those in which evergreen and berry-bearing bushes are



"Bob White."

grown, the evergreens affording shelter from the wind and roosting places at night, while the berries provide food, the mountain ash being especially desirable in this respect, as the berries remain on the tree all through the season and are readily accessible to the birds.

Putting out of consideration all the Ducks, Gulls and other waterfowl which spend the winter on the open water of our lakes and streams, there are forty-three species of birds which may be found in greater or less abundance every winter. Some of them, such as the Spruce Partridge, (Canada Grouse), the Three toed Woodpeckers, Cock of the Woods, Canada Jay and Raven, being almost entirely birds of the North woods, are not often met with in the cultivated parts of

the Province, and some of the birds of prey have become rare. I have not included the Wild Turkey in my calculation, as it is in all probability now extinct. Besides these, it is not unusual to find representatives of our Summer visitors remaining with us through the cold season. Robins, Cedar Waxwings, Meadowlarks, and Song Sparrows, can generally be found in Southern Ontario, by those who know where to look for them, while in Kent and Essex Red-headed Woodpeckers, Flickers, Carolina Doves, and even Cardinal Grosbeaks, occur with surprising frequency; and even the Belted Kingfisher, whose rattling cry we associate with rippling waters and glancing sunbeams, often finds abundant food and comfortable quarters on a running stream which never freezes up. One I saw at Bala, in the District of Muskoka, in January, 1901, was plunging into the water and bringing out fish with the same easy complacency these expert fishers always exhibit. Then again, a season seldom passes without our being favored with a visit in force of one or more species of those erratic migrants from the North, whose movements seem to be governed by laws peculiar to themselves. Sometimes the Evening Grosbeaks come and attract universal attention by the beauty of their plumage, and their gentle unsuspecting manners; in other years it may be the Bohemian Waxwings, or Lapland Longspurs; this season it is the Canada Jay which drifted down from its home in the spruce woods to visit civilization. I wonder how many of the poor creatures will be permitted to return to their Northern wilds? Not many, I fear. Perhaps the most impudently familiar creatures that wear feathers are these Jays; every man who has had occasion to spend the winter in the north woods

of Ontario must have had some experience with the Canada Jay, or "Whiskey Jack," as it is commonly called. Usually this bird lives altogether in the woods beyond the pale of civilization, and never having been subjected to persecution has not yet learned to treat men as enemies to be avoided, but rather as good friends to be sought out and made much of; consequently, as soon as a camp is made and the first fire started, a party of "Whiskey Jacks" will be sure to appear and make themselves at home. They drop in, as it were, to take pot luck with you. Nothing that you eat comes amiss to them, and they are thankful for even the refuse that you have no use for. Their impudence in helping themselves to anything they want is bounded only by their ability to carry it off. I have never seen them actually take the pot off the fire, but I have many times caught them stealing its contents, after it was on it and before it got too hot for them; and I have had them peck at the body of a hare I was skinning whilst it was still in my hands. All the time they are doing these things they will look at you in the most innocent way imaginable, and whisper their soft notes as if taking you into their confidence. It is impossible to help liking them in spite of their thievish tricks.

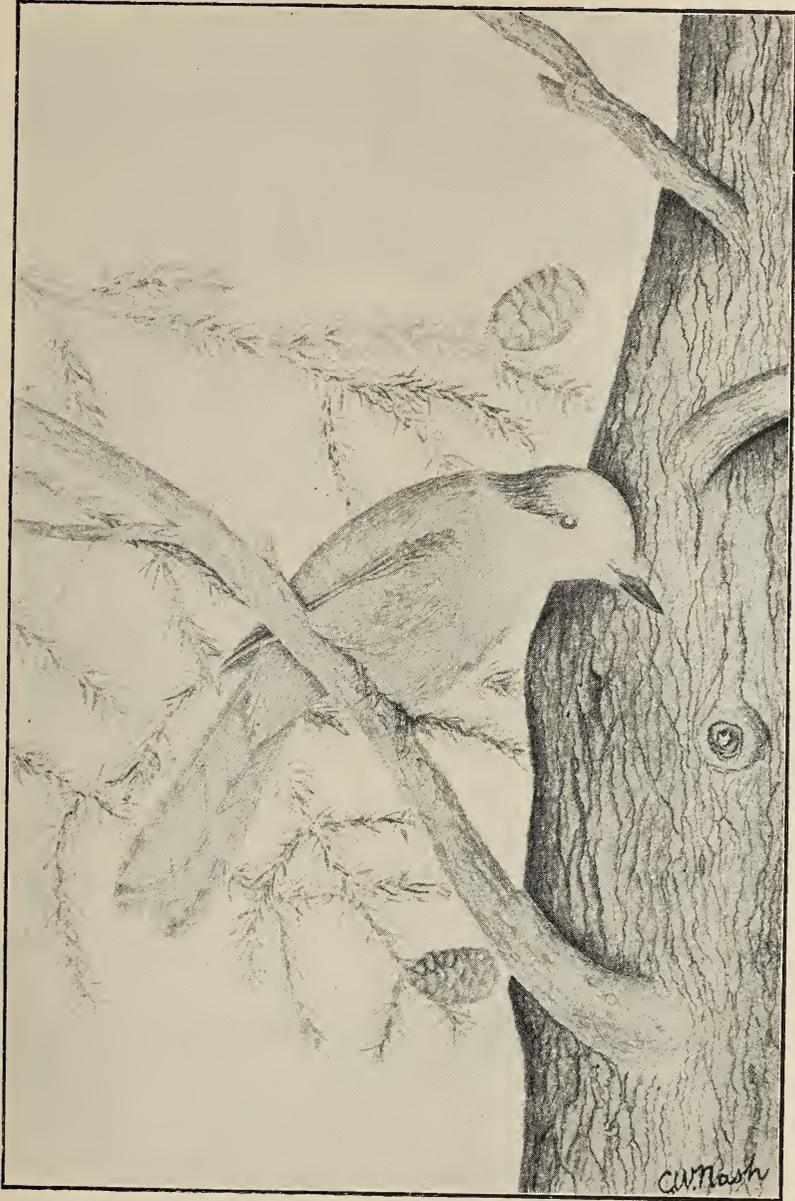
The Blue Jay, which resides in the cultivated portions of the Province throughout the year, has a good deal of the impudence of its cousin, the "Whiskey Jack," but sad experience has taught it to avoid the familiarity, for although it is one of the most beautiful of our birds, yet it is possessed of certain traits of character which have not endeared it to human beings. It is very destructive to the eggs and young of other birds, and is partial to small fruit in season, conse-

quently it is looked upon generally as a rather unwelcome visitor to our gardens and orchards, and is more often shot off than encouraged. In spite of that the cunning of the bird enables it to hold its own even in the neighborhood of our towns and cities, and it seems to prefer nesting in shrubberies under the very eyes of its greatest enemy to retiring for that purpose to the seclusion of the woods, as birds of less courage and more modesty are apt to do; but although its nest is frequently placed in positions where it can be readily seen, yet the birds themselves are not so easily observed, for they abandon for the time all their noisy and obtrusive ways, and slip so silently through the bushes that, although their nest may be within a few yards of the house, its presence will be quite unsuspected until after the young are well grown, when the frequent visits of the old ones with food will sometimes attract attention to it. In the winter they do no harm, but as at that season they eat large quantities of insects then in a dormant condition they do some good, and a prettier picture than that made by a merry troop of Blue Jays foraging among the snow-draped evergreens is very hard to find.

After winter has fairly set in and snow covers the ground, every orchard and shrubbery in the country is sure to be visited by that little feathered acrobat, the Chickadee. He rambles everywhere and does almost everything, except stand still in the attitude usually accepted as the correct one for a bird. If you think there is any position which is impossible for a bird to assume, just watch a Chickadee foraging for insects among the pine tassels and you will soon abandon that idea. If he has any "customary attitude" I have not yet discovered it; but

he certainly seems to prefer taking his meals head downward, with the rest of his body adjusted any way to suit the occasion. If a garden contains a few evergreens or shrubs of any size, Chickadees may easily be induced to remain about the premises all through the season by a little feeding; they are particularly fond of fat, and a few pieces of this stuck about the trees and bushes will be sure to attract them. After they have once found it, if the little store is kept replenished, they will not fail to come regularly to feed on it, and will at the same time aid materially in clearing the premises of insects.

Perhaps the typical bird of a Canadian winter is the Snow Bunting, or Snowflake, as it is very appropriately called. Its habit of keeping to the open fields and frequenting the snow-covered highways brings it under the immediate notice of every one who travels in the country when the sleighing is good, for it is only when the snow is deep and the thermometer well down towards zero, that these hardy little wanderers visit Southern Ontario in large numbers. At such times flocks of them may be seen drifting about the country in a careless, happy-go-lucky fashion, sometimes dropping for a few minutes near a bunch of weeds sticking up through the snow and gathering the seeds; then whirling off again like snowflakes picked up by the wind, and all the time keeping up the merriest jingle of notes imaginable. The most intense cold has no terrors for them, they are always jolly and contented and well able to take care of themselves. As the snow disappears they retreat northward, and their summer is spent far up in the Polar regions, so far indeed that no explorer has yet pushed his way beyond them. This season I was surprised



CANADA JAY.

to find these birds abundant in Algoma early in October. The visitation, like that of the Canada Jay, is unusual. We may find out what it means later one.

In this article it is, of course, impossible to refer to all our winter birds in detail. A fine winter afternoon spent in a piece of bush, consisting of a mixture of hardwood and coniferous trees, will show enough birdlife to convince the most sceptical that at no time is our climate so severe and the country so ice-bound that birds cannot live happily in it. If there are birches and alders in the woods, flitting about in the tops will be Goldfinches, Pine Siskins and Redpolls, with probably a few Purple Finches. In the hemlocks and pines Crossbills and Pine Grosbeaks are likely to be seen, though the latter are as often found in the hardwoods as among the evergreens; while from all around come the lispings notes of the Golden Crowned Kinglet, the Tree Creeper and the Chickadee, mingled with the harsher calls of the Nuthatches, the Woodpeckers and Jays.

Many of our small winter birds could, no doubt, be induced to become regular

visitors about our premises if they were afforded some little encouragement and protection, for they soon lose their fear of man when they find they can feed in safety in his presence, and they will quickly find and resort to places where food is provided, no matter what is going on, so long as no direct hostility is shown them. This is very noticeable when chopping is being done in the wood lot. As soon as the work begins, and the first few strokes of the axe sound through the bush, parties of Chickadees, Nuthatches, Jays and Woodpeckers gather round the workmen and investigate every piece of bark and decayed wood thrown open, no matter how close it may lie to a person's feet. They have learned by experience that when a farmer gets out his cordwood their chance for a feast has come, and like wise creatures, they act upon the knowledge they have gained.

Nearly all our birds are well worth caring for and protecting, but none more so than the farmer's friend, "Bob White" whose portrait appears at the head of this article.



Causes of the Russo-Japanese War.

BY B. R. NAG-TANY.

THE STRUGGLE FOR THE POLITICAL
SUPREMACY OF COREA.



GLANCE upon the map of the Far East will soon discover the prominence of the great peninsula called the Kingdom of Corea. It

Geography of Corea.

occupies an area of 82,000 square miles, and is surrounded by a coast line of 1,740 miles. Running about 600 miles lengthwise from the north to the south, it spreads about 135 miles crosswise towards the east and west. It is situated between $33^{\circ} 13' - 43^{\circ} 2'$ N. lat. and between $124^{\circ} 12' - 130^{\circ} 35'$ E. long. In the north it comes in contact with Russian territory for a short distance, and is separated from it by the Tumen river. From the end of the Russian territory to the western coast line there runs a river called the Yalu, which is the boundary between Manchuria and Corea. The country is very hilly everywhere and consequently there are a great many rivers. Although the country is devoid of prairie land, small fields of a very fertile nature are abundant along these rivers. Three great mountain ranges called Hakutow, Conton and Himalaya, occupying the greater space of the peninsula, are thickly wooded and richly gifted with all sorts of minerals. Boundless wealth exists in the farming, lumbering and mining industries.

Corea is a kingdom of twelve millions.

Social Condition in Corea.

The system of government is aristocracy, but when the King is an influential man it becomes a monarchy. The people have absolutely no power in the government,

and the high offices are exclusively held by the nobles. No matter how foolish he is a man of noble blood is exalted, and no matter how heroic he is, a man of common blood is despised. The social condition is worse even than that of China. People are cranky, poor and have no emotions whatever. It is supposed to be due to the lack of education, but authorities state that the Coreans can not rise above the level of coolies. The nobles are supported by the government, and have no more occupation than circling around the king. Commoners live by farming, fishing and trading. There are a great number of slaves in Corea, descended from olden times. Corea is the only country in Asia that has had slaves, and it is also the only existing example of slavery in the world. The national religion of Corea is Shamanism, whose teaching is composed of strange ghost stories. Christians, although they are yet in the minority, are increasing in numbers.

Corea is a country that has a history extending over 2,900 years. This history is decorated with stories of internal struggle, foreign invasion and successive subjugation by China and Japan in turn. From the beginning of the old kingdom to the present age the country never enjoyed perfect independence nor continued peace. The native inhabitants of the peninsula were first conquered by the Mongolians who occupied and populated the country.

Short History of the Korean Kingdom.

For 900 years, from 1000 B.C. to 100 B.C., it was ruled by China. During her control China colonized Corea with her people. In 100 B.C. China lost her control and Corea was divided into threestates, namely, Shiragi, Koma, and Kudara, under three different kings. About 200 years after the establishment of these kingdoms, they were subjugated by the Mikado of Japan, who levied a huge tribute. This lasted over 200 years and ended in the annexation of Kudara, by China and the subsequent re-establishment of her control over the rest of the kingdoms. Although China again attained supremacy over Corea, she could not maintain it. The gradual weakening of Chinese influence caused many revolts. Soon the whole country was thrown into great confusion and the darkness of internal insurrections.

In 965 A. D., there arose a great man called Woken, whose ancestors were the kings of Koma. He conquered the whole country, established a new kingdom and named it Koma. The dynasty of the new kingdom continued to flourish 400 years, although internal rebellion and foreign invasions always troubled it. The great Manchurian named Gin-Gis-Kang invaded Koma, and penetrated the country with the ambition of conquering Japan.

From 1300 the Japanese navy under the command of the federal Lords began to menace the kingdom of Koma. Constant attacks by sea caused the fall of the dynasty and gave rise to the present rulers.

The present dynasty is called Lee after its founder. He began his reign in 1385. Being a great man he succeeded in restoring peace and obtaining absolute command in the whole nation. For

many years, during the first period of the present dynasty, Corea suffered repeated raids and attacks from China and Japan. But she successfully defended herself by skilful diplomacy, calling upon one and the other's help alternately.

The most important personage in the modern history of Corea is the king Tai-En-Kung, the father of the present Emperor.

He was a man of exceedingly wilful, and pleasure-loving nature. He was an iron despot and boasted that the "whole nation is my slave." People could not endure his tyranny.

In 1894 a strong revolt called To-Gaku-To, broke out in the Southern

**The Chino-
Japanese War.** part of the peninsula. The rebels concentrated their forces and marched

upon the capital, Seoul. Troops were sent to meet them, but were defeated. Having been terribly frightened the king petitioned the Chinese authorities to send troops to overcome the rebellion. China immediately responded by sending her troops in large numbers to Corea across the Yalu River, which caused an intense agitation in Japan. For generation after generation those two nations had been struggling for the control of Corea. For many years in the past he succeeded in preventing the interference of Japan by depending upon China. Fearing the Chinese annexation of Corea as the result of successful protection of the throne, Japan also landed troops in order to restore peace and independence. The Japanese fleet on the way to Corea met the Chinese fleet, and began a naval battle, which was followed by engagements on land. This was the Chino-Japanese war of 1894-5.

In one great naval battle the Chinese fleet, which was numerically superior,

was completely destroyed by the Japanese. Within a few months all the Chinese forces were swept out of Korea. The Japanese pushed forward with overwhelming victories, captured Port Arthur as well as Wei-Hai-Wei, and were about to march upon the capital Peking.

Peace was soon restored by the treaty of Shimonoseki, after one year's fighting. Japan fought this war simply to protect Korea from falling into Chinese hands. It had a tremendous effect upon the minds of the Koreans, and influenced them in favor of the victorious Japanese. Japan settled herself to master the hermit kingdom with the idea of destroying all the existing evils and introducing European civilization. It was, however, by no means an easy task, and the difficulty was greatly increased by the approach of her new antagonist, Russia, who came from Northern Europe, through Siberia and Manchuria to assume China's place.

The Chino-Japanese war completely dispelled Chinese influence in Korea, and brought Japanese influence in its place, but also provided room for the growth of Russian power.

Right after this, Korean diplomacy enters into a new sphere. From the close of the Chino-Japanese war in 1895 to the beginning of the present war in 1904, a period of ten years records constant complications between Japan and Russia.

Japan is politically, strategically and commercially interested in Korea. To dominate Korea is the climax of the policy of Japan. She wants to Japanize the whole country if she can. Her population is now overflowing its small area and rapidly increasing by a large percentage year

after year. It is her urgent need to find a land for future expansion.

She can find no more suitable country than in Korea. The intimate relation historically inherited and geographically gifted, together with the tendency of pervading civilization cannot prevent Korea from finding her destination as a part of Japan. After the Chino-Japanese war, Japan's special interest in Korea was recognized by the world's powers. But Russia's constant interference had considerably shaken Japan's grip upon Korea.

What interested Japan strategically in Korea was more important than anything else. Generation after generation had never ceased to pay close attention to Korea, because of the geographical relations between the two countries. Peace in Korea is essential to the security of the Japanese Empire. So long as Korea is unable to maintain independence by her own strength Japan can neglect her no more than she would her own territory.

Because if she were neglected Korea would become a source of danger to Japan, since some of the foreign powers would then freely encroach on the country and utilize the land for strategic purposes which would directly menace the Japanese island.

An army concentrated in Korea could easily invade the main island of Japan. The Korean strait, which has a width of only 122 knots, can easily be held by a score of warships. To Japan this strait is no less important than the English Channel to England. With Korea a base of operation for the enemy, the strait would be the key to their successful invasion of Japan.

There is no way in the world to enter

Japan except by crossing the strait from Korea. For defensive purposes Korea is an indispensable factor to Japan. Therefore it is to be concluded that the safety of the Japanese empire can only be assured by placing Korea under her control.

Japan's commercial interest in Korea has greatly increased in recent years. Korea has the largest trade with Japan. Of all goods imported from foreign countries to Korea, those from Japan in the last few years averaged 54 per cent.

Corea promises to make a most remarkable progress in trade and commerce. The indications are that it will become the center of all trade in Asia. The peninsula is surrounded by the Yellow and Japan Seas, and has seven important open ports, namely, Fusampo, Chemulpo,

Wonsan, Chinnampo, Moppo, Masampo and Yongampo, all of which are considered to have first-class harbors.

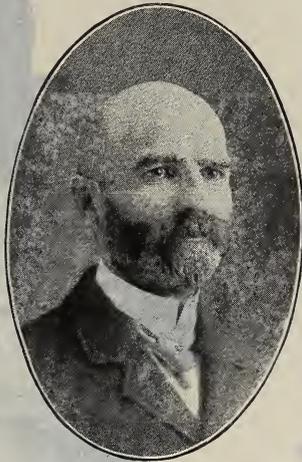
As to the nationality of the foreigners in Corea, the Japanese are the most numerous and most widely spread. According to last year's statistics, of twenty thousand foreigners, seventeen thousand were Japanese, whereas the Chinese were thirteen hundred and only three hundred were Russian.

The Japanese are also the greatest investors in Corea. The amount of capital invested by them in all kinds of enterprises amounted last year to eighty-six million dollars. This shows the magnitude of Japanese interests in Corea.

(To be continued.)



*The
Agricultural College
Idea.*



BY

C. A. Garity, B. S. A.



Photo by Kennedy.

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

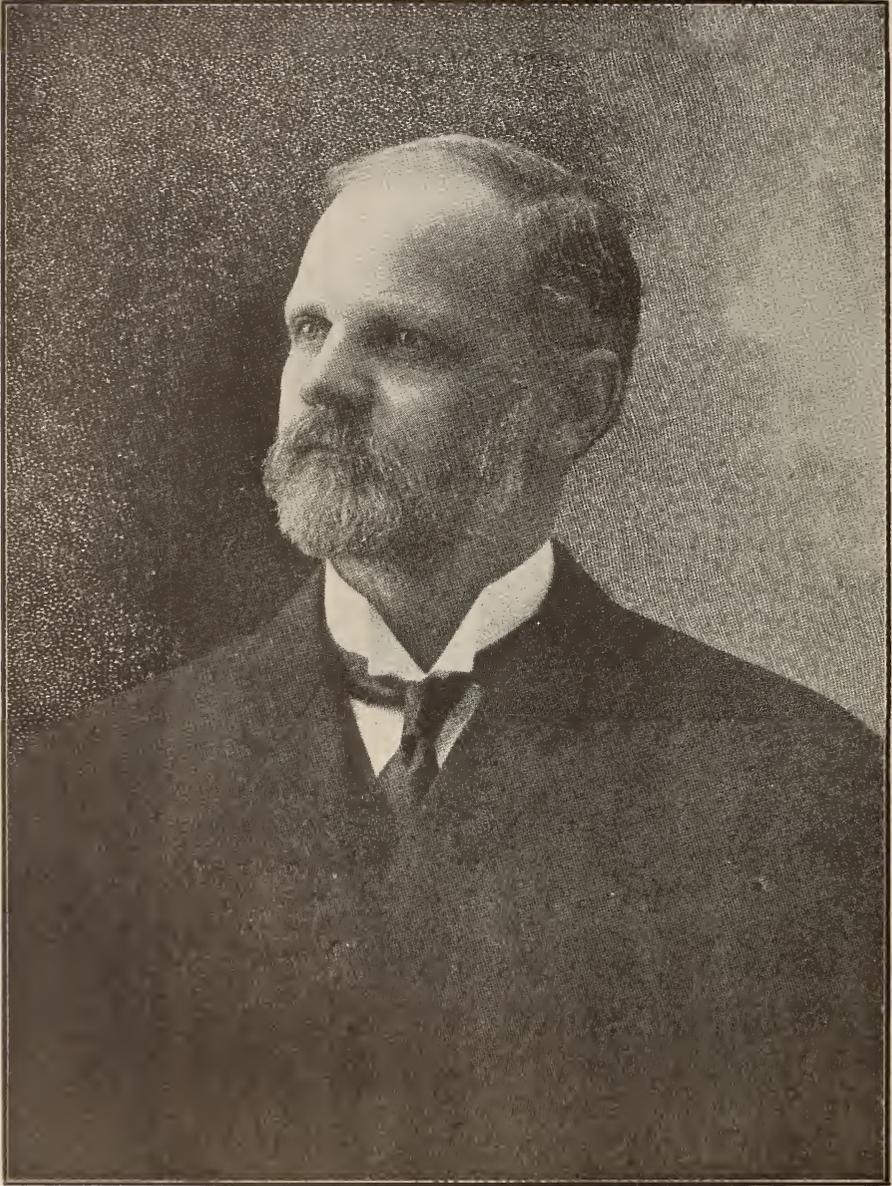
President Creelman of the Ontario Agricultural College, Guelph, promises well to make his administration memorable as the period when agricultural education received the appreciation and attention which is its due. Throughout his life Mr. Creelman has been in a position to study farm conditions and methods of improving them. He was raised on a farm, received an agricultural education, was connected with American educational institutions, both as student and instructor, and previous to accepting his present position was, for several years, Superintendent of Farmers' Institutes. He is, therefore, well fitted for the work of suiting a college education to the needs of the tillers of the soil, and we may confidently look forward to an era of increased prosperity under his administration.



A. B. STORMS, A.M., D.D., LL.D.

President Iowa Agricultural College.

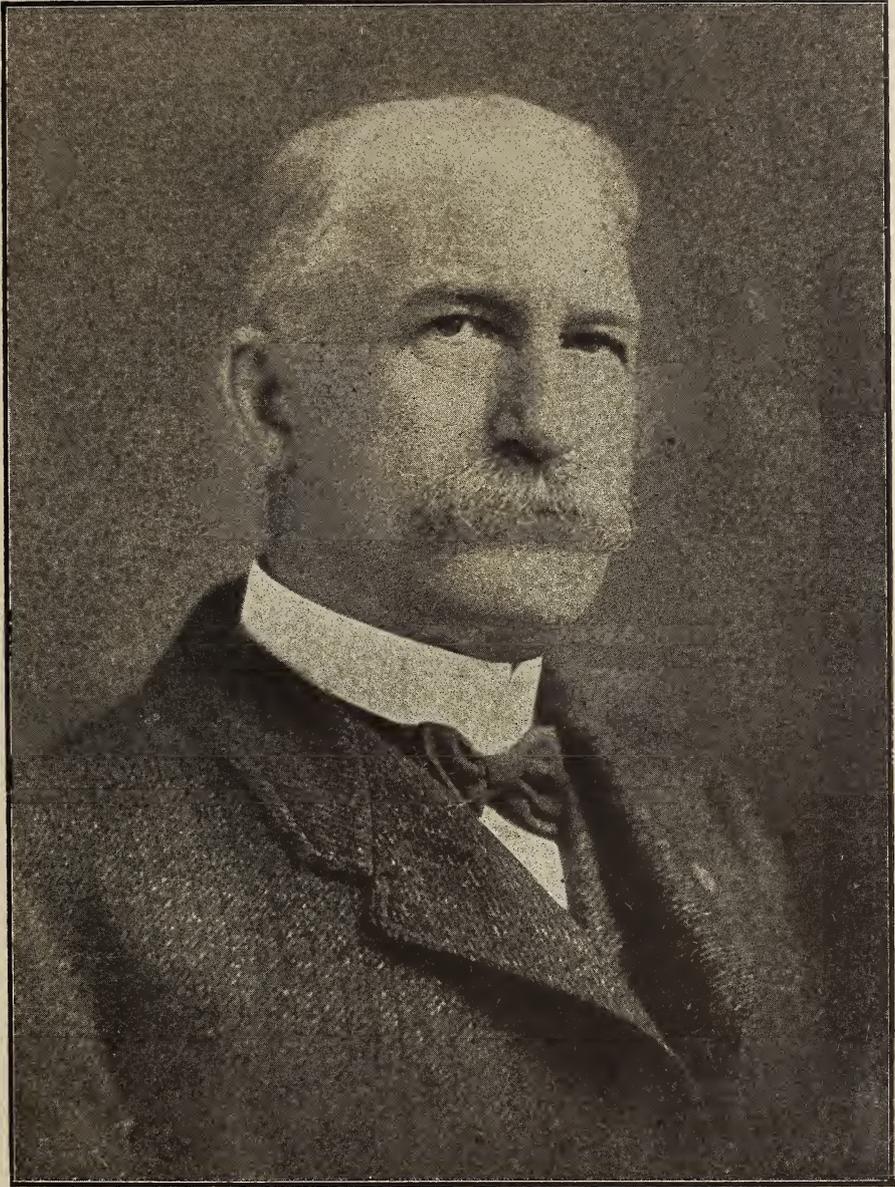
Dr. Storms has occupied the position of President of Iowa College for a comparatively short time, but during that period "Ames" has always taken a leading position among the Agricultural Colleges of the Continent. Storms is a big man, big mentally and physically, an able and convincing speaker, and possessing a breadth of thought and soundness of judgment that admirably fit him for the position he occupies.



J. L. SNYDER, Ph.D.

President of Michigan Agricultural College.

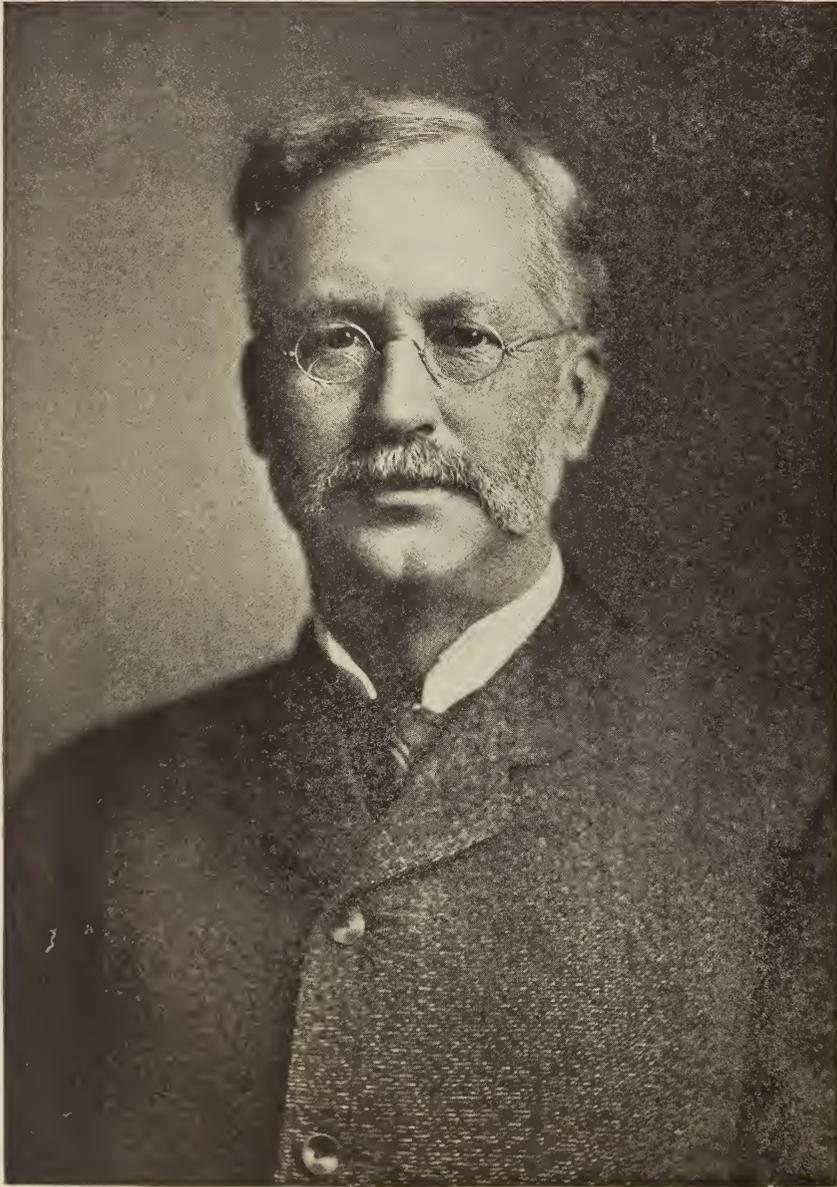
Dr. Snyder became President of the Michigan Agricultural College in 1896, and since that time has been the guiding spirit in the changes that have made Michigan one of the leading Colleges of the Continent. The Courses now taught embrace Agriculture, Engineering, and Domestic Science, and in the management of the work and direction of the courses of study Dr. Snyder has always shown rare tact and executive ability.



W. M. LIGGITT,

Dean of the College of Agriculture, St. Anthony Park, Minn.

Professor Liggitt has charge of one of the most progressive of our Western Agricultural Colleges. The Short Courses and Special Work in live stock carried on by this College have attracted considerable attention, and Mr. Liggitt by his foresight and ability has done much to promote the interests of Agriculture in Minnesota.



WILLIAM A. HENRY,

Director of the Experimental Station and Dean of the College of Agriculture,
Madison, Wisconsin.

Professor Henry's name is familiar to every student of Agriculture for his great work on Animal Husbandry entitled "Feeds and Feeding." In addition to this he has published several other books; is a well-known contributor to the agricultural press, and as a pioneer in the work of Agricultural Education occupies a foremost place among the leading men of his country.

The Agricultural College Idea.



RESIDENT ELIOT, of Harvard University, in giving his views regarding the essential constituents in acquiring a true education, expresses his thoughts as follows:

“We must learn to see straight and clear; to compare and infer; to make an accurate record; to remember; to express our thoughts with precision; and to hold fast to loft ideals.” He again states that “Effective power in action is the true end of education, rather than the storing up of information or the cultivation of faculties which are mainly receptive, discriminating, or critical.” People are realizing more and more that scholastic education should be closely connected with the real life and surroundings of those who are being taught. This is made manifest by the present tendency of directing the educational work along special lines. Technical education is becoming more general and more popular as time advances. This fact is made prominent by the rapid and universal development of agricultural education throughout the greater part of the civilized world within the past century.

The first school for teaching agriculture was founded by Emanuel von Fellenberg on his estate near Berne, Switzerland, and in the same year a similar school was started by Prince Schwartzberg at Krumau, in Bohemia. A High School of Agriculture was established at Prague one hundred years ago. In 1806 the Agricultural School at Moglin, Prussia, was founded on a

farm of 2,480 acres, and in 1809 an Agricultural School was started at Gratz, in Styria. Following these, Agricultural Schools were established at Hohenheim, in Wurtemberg, in 1818; at Rouville, in France, in 1821; and at Schleissheim, in Bavaria, in 1822. The first Agricultural School in Ireland was established at Templemoyle in 1827. The Royal Agricultural College of Cirencester, England, was not founded until the year 1849.

The first Agricultural College in America was established at Lansing, Michigan, in 1857. At the present time, however, every State of the American Union has its Agricultural College, or its Department of Agriculture in connection with its University. About one million dollars are used annually for the erection of new buildings in connection with these colleges throughout the various States. It is interesting to note that fully six thousand students are in attendance at the Agricultural Colleges of the United States at the present time.

In Canada, the Ontario Agricultural College at Guelph was started in 1874, and has been the only College of its kind in the Dominion up to 1903. We are pleased to note, however, that an Agricultural College is now being opened at Truro, Nova Scotia, and that another is under erection at Winnipeg, Manitoba. Through the great liberality of Sir William Macdonald, of Montreal, and under the immediate direction of Dr. J. W. Robertson, of Ottawa, a very comprehensive, thoroughly equipped, and up-to-date Agricultural College is to be

built at St. Anne de Bellevue, in the Province of Quebec.

Although only about a century has passed since the establishment of the first college for the teaching of agriculture, we now find Agricultural Colleges scattered throughout the principle countries of the world. Who can estimate the further development along this line during the next century ?

When visiting upwards of fifty Agricultural Schools and Colleges in nine of the countries of Europe in 1901, I was particularly impressed with the thoroughness of the work which was carried out, and with the extensive system of agricultural education extending through the Public Schools and High Schools to the Agricultural Colleges and Universities. This was specially noticeable in some of the countries on the continent. In France, for instance, the agricultural instruction forms a very important part of the general system of the public education. Nearly 4,000 of the Rural Primary Schools of France have gardens, or demonstration fields, which are used for object lessons in connection with the courses of instruction. In the Rural Elementary Schools the pupils are taught the elements of the natural and physical sciences related to agriculture. This instruction is furnished in these schools from the time the boys and girls are seven years until they are thirteen years of age, and is divided into the "elementary course," the "middle course," and the higher course." After the pupils are over thirteen years of age, they take the "advanced course" in the superior Primary Schools. Systematic instruction is given in the Normal Schools along the lines of field agriculture, live stock, and rural econo-

my. It will thus be seen that agriculture forms an important place in the curriculum of the Public Schools of the country.

Besides all this, France has a great many colleges and schools which are devoted entirely to the teaching of agriculture. The highest institution belonging to this class is the Agronomic Institute, located in Paris. There are in all nine national schools of agriculture ; the most popular and perhaps the best equipped of these being the one located at Grignon, near Paris, which was established in 1827. There are also between forty and fifty practical schools of agriculture throughout the Republic, each having from one hundred to three hundred and fifty acres of land attached, and the course is made both practical and theoretical.

France and some of the other European countries are becoming thoroughly awakened to the situation. They are establishing systems of education adapted to the requirements of the people, the fruits of which will surely be seen in the future. We cannot ignore the lessons which may be learned from these practical demonstrations of what is being done at the present time.

In Canada and in the United States, we have not yet developed the same perfection in our system of agricultural education extending through the whole educational scheme which we find in some of the countries of Europe. On the other hand, however, I think our Colleges of Agriculture have a decided advantage in coming in closer touch and in deeper sympathy with the people who are actually engaged in agricultural pursuits and in exerting their influence upon agriculture as a whole. Our American Institutions, through the

**Agricultural
Education
in Europe.**

**Agricultural
Education in
North America**

Experiment Stations and through the co-operation with the farmers in establishing and carrying forward systems of Farmers' Institutes, Agricultural Associations, and Co-operative Agricultural Experiments, are exerting a wonderful influence upon the agriculture of the two countries, and on the agriculturists themselves.

Since the establishment of the Ontario Agricultural College, at Guelph, fully 2,000 young men have entered the regular course, and upwards of 1,000 others have taken the advantage of one or other of the short courses in agriculture, dairying, or poultry raising. The majority of the ex-students of the college are at present engaged in some branch of agriculture in the Province of Ontario; some have accepted positions of responsibility in agricultural and other educational institutions in the different Provinces of the Dominion, in thirty-five of the States of the American Union, and in various other countries of the world, at salaries ranging from a few hundred dollars to five and six thousand dollars per year. It has been truly said that "the agricultural machinery for the educational work of the Dominion of Canada is now largely operated by the graduates of the Ontario Agricultural College."

Perhaps in no country in the world is there a more complete system of agricultural organization than there is in the Province of Ontario. The Ontario Agricultural College, with its departments of research

and experimental work; the Farmers' Institutes for both men and women; the Agricultural Fairs; the Live Stock, Horticultural, and other Associations, are all united under one official head, and are working together harmoniously for the improvement of agriculture. Ontario's system of organized work in agriculture is bearing rich fruit.

May I be allowed to say that I consider a great advance was made recently when agriculture was admitted as one of the subjects on the curriculum of the Public Schools of Ontario. The tendency of this movement will be to bring the educational work in closer touch with the lives and occupations of the people.

The labors of Sir William Macdonald and of Dr. J. W. Robertson will likely do much to show, through object lessons, what can be done in furnishing a suitable education for the rural population. Never before was the outlook for agricultural education in the Dominion of Canada as bright as it is at the present time. The introduction of nature study, domestic science, and agriculture in our educational system should create a greater love for the life in the home and of the beauties of nature, and furnish a clearer understanding of the wonderful works of God. As the education furnished by the Public Schools and by the High Schools comes in closer touch with the lives and the surroundings of the majority of the people, the work of the Agricultural Colleges will become more thorough, more useful, and even more influential than it has been in the past.

Canadian Poetry.

BY C. C. JAMES.



It is the privilege of the educated, progressive young farmer to get more genuine enjoyment out of life than any other young man in the world.

You may question that opinion by stating that as a rule he does not realize it, but to that we reply that, if not, he is not living up to his possibilities. To enjoy life thoroughly we must depend not alone upon our own efforts to see, and hear, and think, but we should profit by the seeing, hearing and thinking of others. Nature and human life will vary according to our view point, the clearness of our vision, the spirit of our observation, and the moral character of our being. Anything that will enable us to improve our observing and to elevate our thinking should be welcomed. We are apt, in these days of practical teaching and of intense anxiety for financial success, to overlook those helps that develop the aesthetic and moral sides of our manhood.

The view is too prevalent that dull prose is good enough for the plodding worker of the soil—and the duller the better. Surely the farmer who works closest to the great laws of Creation should best be able to appreciate the finest and most glorified presentation of Nature's doings and to enter most heartily into man's most exalted descriptions of the working out of the great laws of the Creator. Just as many a poet has failed in his efforts by ignorance

of the simple life so familiar to the farmer, so many a farmer has failed to enlarge his thinking and his being by disregard of the grand presentation of Creation's truths in finest poetical form. If left to itself, the farmer's life is apt to work along a dead level, if not to become degraded. There is need that he be lifted up, that his mind be elevated, his outlook be widened, and his whole life sweetened by the beneficial influences that permeate the highest forms of the poetic art. There is need that we put more poetry into the dull round of daily toil, that drudgery be enlivened by imagination and be brightened by romance.

There is a relaxation in the reading of the best poetry that farmers should enjoy, and to them we commend the advice that alongside of the books on practical aids to Agriculture, the useful works of reference, the carefully compiled tables of analyses and the hitherto somewhat unattractive books for farmers' reading there be placed a few volumes of the best poetry. The farmer's library should be as varied as that of the city man and the probability is that if he possesses a good collection he and his family will make more systematic use of it than many others who have more attractions to spend the evenings away from home.

I have been asked to say a few words as to our Canadian poets. We have not yet produced poets to rival Milton, Burns, Wordsworth, Tennyson, Moore

and many others who have sung their songs in the old lands over the sea. It took centuries of life to produce such as these, and Canada is as yet a young country. But we are not destitute of sweet singers. It is not for us to complain or to belittle the efforts of the best. There has been small encouragement given to Canadian poets by the Canadian reading public. Not far short of a thousand volumes of Canadian verse have seen the light during the past eighty years. Most of these have lived a short and uncertain life and have passed away unheeded and unappreciated. There was but slight reason for their continuance, perhaps, and the natural law of the "survival of the fittest" has worked inexorably in regard to them. But such has been the experience of other countries. Most of these poets have treated of trivial events and their style of treatment has not given them that persistence that is so necessary to great poems.

Once in a while some lover of good poetry has gathered together the best of our Canadian poems and helped to preserve them in collections. Thus in 1864 the late Rev. Dr. Dewart, himself the author of some poems of very high merit, made a collection entitled "Selections from Canadian Poets" a very interesting volume, now somewhat scarce, but which is perhaps the best beginning of a collection of Canadian poetry. In 1889, Mr. W. D. Lighthall, of Montreal, put out a volume entitled "Songs of the Great Dominion." In 1893 Mr. J. E. Wetherell edited a volume entitled "Later Canadian Poems," and in 1899 the late Dr. T. H. Rand of Toronto made a fresh collection which he named "A Treasury of Canadian Verse." If I were compelled to restrict my library I would certainly secure, if possible, these four volumes.

Though they do not include all the best Canadian verse, they contain a series of poems that will be found to be of a high order and quite worthy of a country so limited in its history when compared with the older peoples of Europe. Here and there will be found a poem of action, sometimes descriptive of a noble act in our national history, but in the main it will be noticed that Nature has been the great source of inspiration. The great Canadian Epic has yet to be written.

A selection of the best Canadian works apart from these collections is a matter largely of taste. At least forty or fifty volumes have been produced during the past twenty years that are a credit to our young country. Without making invidious distinction we may mention the works of Archibald Lampman, W. W. Campbell, Bliss Carman, Charles G. D. Roberts, Duncan C. Scott, Frederick G. Scott, Dr. William H. Drummond, Charles Mair, Thomas O'Hagan, Robert Kernighan, (The Khan), Robert Elliott and James A. Tucker. To these productions of men, we may add the works of Isabella Valancy Crawford, S. Frances Harrison, Jean Blewitt, Ethelwyn Witherald and E. Pauline Johnson.

Some of the best work produced in this country saw the light in earlier days and came from the pens of Charles Heavysege, Alexander McLachlan, William Kirby, Evan McColl, Thomas D'Arcy McGee, John Reade, Charles Sangster, and Edward Hartley Dewart, all of whom (with the exception of Sangster) were born across the sea. Their work was Canadian in sentiment and rightly belongs to Canada.

Let us not despise Canadian poetry, because so much inferior verse has been written, rather let us cherish what is best. We have much worth preserving.

Let us cultivate a taste for good literature and remember that the farmers work and the farmers life will be brightened and ennobled as we incorporate with it some of those elements that find expression in poetic sentiment.

Every few days a volume of Canadian poetry comes to us fresh from the pen of some Canadian poet. To-day there has been laid on my desk a neat volume of poems by the late James A. Tucker. Having written these lines, I took up the volume to see what its message might be and whether it bears out what I am trying to convey in these hastily written lines. I turn to page 29 and find a short poem that it seems to me should

appeal with force to young Canadian farmers, students of soils and trees, lovers of Nature and lovers of their country. Is there not in it a meaning, a message, an inspiration that is peculiarly yours?

TO CANADA.

“ Unlike all flowers, or stout or slender
 All flowers kiss'd by summer's breath
 Which die in shame—the Maple's splendor
 Is greatest in her hour of death.
 “ Dear country, should occasion call
 Thy sons to die in Freedom's strife
 Like thine own maple emblem fall
 More glorious ev'n in death than life.”



Agriculture.

Christmas Poultry.

THERE is always a large demand for poultry at Christmas. At this season of the year buyers are looking for the best that are produced. The majority of purchasers are prepared to pay an extra price for first-class goods.

There is a greater demand for turkeys than for other classes of poultry, but when the price is very high as it has been the last two years, many people buy geese, ducks and chickens. In this article we shall consider the fattening of these classes of poultry.

To fatten poultry of any kind, good, healthy specimens are wanted. Very little progress can be made with sickly or unthrifty birds. In fact, birds of this class if shut up to feed, become very unthrifty and make no gains, and in some cases die. The most satisfactory birds to feed are those that have picked up most of their living and that have large

frames. Birds that have been fed well from the time they were hatched are much improved by being cooped to fatten but it is with the leaner birds that the largest gains are made, and moreover,

the bird that has ranged far and wide appears to have a much greater appetite than his brother who has always been fairly well fed. It is therefore apparent that given the choice of the healthy flocks of birds, the flock that has the frame but lack the flesh will in most instances yield the greater profit.

Chickens intended for Christmas should be shut up to feed three weeks before the time they are to be killed. The chickens may be confined in a box stall or other pen, or in the regular fattening crates. These crates have been described in very many papers during the past two years, and for this reason a description is not given here.

As a rule chickens do somewhat better in crates than where they are loose in the pen. This is not always true but upon the average, I am inclined to believe they do better in the crates. Chickens make faster gains where the

temperature is not too low, especially if crated. A temperature of 45 to 60 degrees is more suitable than lower temperatures, although they gain very well even in cold buildings. The room



A Very Edible Chicken.

should not be very light as the birds gain best when kept quiet and contented. They should be well dusted with insect powder when shut in the coops and again two or three days previous to killing. We have found a ration made of two parts ground buckwheat, two parts ground oats and one part cornmeal (by weight), when mixed with skim-milk to make an excellent ration. Other grain mixtures have proven fairly satisfactory. Milk makes the flesh white and at the same time it tends to make a juicy, tender flesh.

There is a danger in over feeding birds when first cooped, in fact, if fed too liberally during the first three or four days, they seldom do well afterward. They should be given a little food three times a day during the first week, say three-quarters of a pound to a pound of grain to be fed to twelve birds. During the second and third weeks they should be fed all the grain they will eat at each feed, but care should be taken that no feed is left in the troughs fifteen minutes after feeding. A small amount of tallow may be given the last week. This

appears to make the chickens plumper and is said to add flavor to the flesh.

Where the market demands yellow fleshed chickens, the above ration would not be satisfactory as this will produce white fleshed poultry. Yellow flesh is

best produced by using animal meal in the proportion of about fifteen per cent of the grain ration, in the place of the milk. The ration in this case is wet with tepid water. Yellow cornmeal, red carrots and turnips tend to produce a yellow flesh.

The chickens will require grit of some description once a week during the fattening period. Sharp gravel, broken crockery and cinders answer the purpose apparently as well as regular poultry grit. If the ration is fed very wet, no water will be required, but in most instances it is best to water the chickens twice daily.

Ducks which are being fattened

should be kept from the stream or pond and confined to small yards. They can be fattened on whole grain very nicely; peas, corn and wheat being the best grains. Such feed should be put in a trough or pan and covered with water to



A Genuine Christmas Turkey.

a depth of two or three inches. The ducks appear to relish the food better when given in this manner.

Ground corn and shorts in the proportion of three of corn to one of shorts wet with milk makes a good ration. If water is added, meat meal or cooked liver, or other refuse meat must be used.

Geese are fattened much the same as ducks.

Turkeys that are intended for Christmas trade should be brought in from the fields about three weeks previous to marketing time, and during this period they should be fed with corn once or twice a day. They may also be fed a mash consisting of two parts of cornmeal, one of shorts, one of oats and one of beef scrap, but if sour milk is in abundance, the meat may be dropped. Small boiled potatoes are also a valuable addition to the ration. Turkeys should not be confined too closely. A large shed is perhaps the ideal place for fattening purposes.

All poultry should be starved at least until the crop is empty, before it is killed. Where the poultry is to be held for sometime after killing, it should be starved about thirty-six hours. Food in the crop decomposes rapidly, thereby tainting the flesh and spoiling the general appearance of the bird. Birds dress better where the supply of water is not withheld previous to killing. Where no water is given for thirty or more hours before killing, the birds frequently dress "blue" and are hard to pluck.

Killing may be accomplished either by pulling the neck or by bleeding through the mouth. The pulling process is much quicker and cleaner, but where stock is to be held for a period of time, there is more or less discoloration about the neck. Bleeding is more difficult but gives a better appearance to the bird when dressed.

Bleeding is usually accomplished by using a sharp jack-knife. The bird is hung by the feet from the ceiling or wall so that the head is nearly in line with the operator's elbows, the head is drawn down, the mouth opened, the knife is inserted to the throat, cutting the veins on each side; the knife is then thrust in the slit in the roof of the mouth through to the bird's brain and there given a half turn. If the operator has been successful in braining the bird, it will give a peculiar cry, which is followed by a quiver. Where the operation is successful the bird plucks very easily; if not properly done every feather appears to be glued to the carcass.

Plucking should begin as soon as the bird is killed. It then plucks fairly easy. Care should be taken not to tear the flesh. Feathers usually can be removed more easily if pulled at right angles to the way they lie, rather than pulled directly forward or backward. Appearance helps to sell the bird; a clean, nicely-plucked bird sells best.

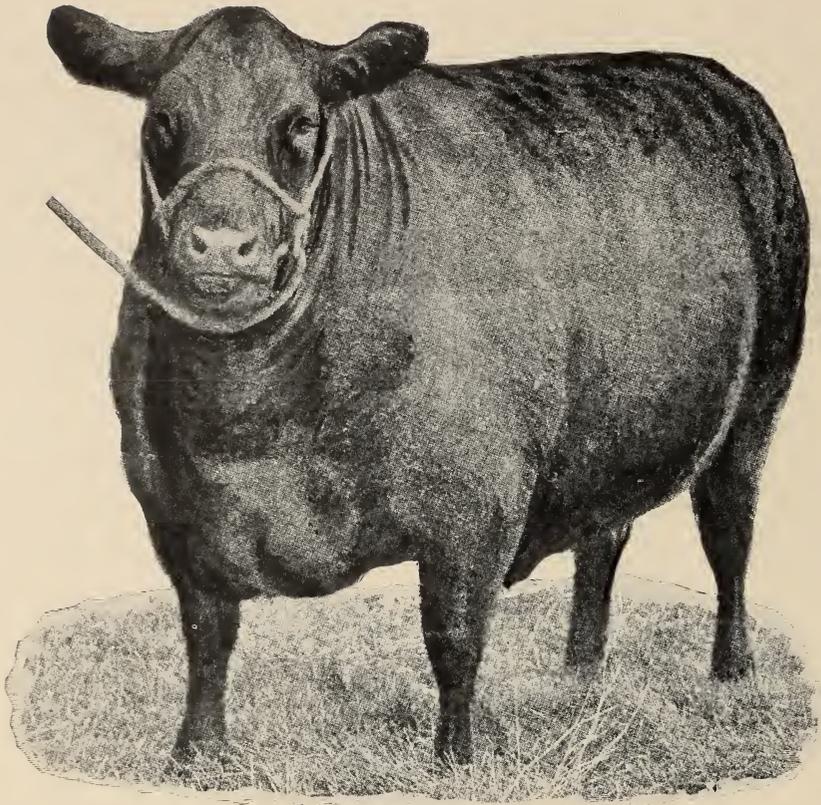
W. R. GRAHAM.



Christmas Beef.

THE green meadows of Merrie England, and the pasture and turnip fields of Auld Scotia, will be famous throughout all time for the aristocracy of pure-bred cattle which has

been nurtured and developed in this historic environment. Greater than the meadow and the byre, most potent of all the factors in the life of the people, are the homes of Britain, whether stately or



A Block of Christmas Beef.

humble, from which have come the men who could fashion a breed of live stock, or build up a nation. And great are the markets of the kingdom at which this vigorous, aggressive race obtains the food which builds up brawn and brain, and intensifies the superior qualities of a dominant people. It is here, especially at Christmas time, that the skill and patience of the breeder and feeder are shown as nowhere else, and the results of their labor and attention are generously appreciated by the epicurean-like John Bull in his holiday mood.

The cattle used in catering to this Christmas trade are of the best type of feeding animal, averaging about one and half years of age, and weighing one thousand to twelve hundred pounds. From the very outset they are fed with a view to rapid growth and deep fleshing. The

utmost skill in feeding and compounding rations is required, the object being to maintain the calf flesh to the finishing. The result of such careful feeding and attention is a thickly and deeply fleshed animal of the best quality, which brings at this time, a price far in advance of animals fed in the ordinary manner.

Such animals give the choice roasts and delicious porterhouses which rejoice the heart of John Bull, his family, and disciples throughout the world who still retain some of the old Saxon love for the delights of the table. It is such animals and such beef that contribute more true greatness to the Island Kingdom than her powerful navy and vast territory, for they tend to build up a race of mentally and physically strong men, and to enhance the prestige of the greatest of the arts and sciences.

Some Phases of Swine-Raising.

ALL who are in the least familiar with Canadian Agriculture recognize the growing value of swine as a class of farm stock. There is scarcely a farm in the Eastern Provinces on which swine are not fed, more or less extensively, for market, and now the West is beginning to realize the importance of the bacon trade. Its possibilities are strikingly shown by the increase in value of exported hog-products from three to sixteen million dollars in a single decade, the trade being still in its infancy. But having mentioned the present proportions and hinted at the probable future of this industry, we shall discuss more particularly the individual farmer's end of the business. The value of swine as economical producers of valuable meat is unquestioned. Their ability to make use of by-products such as skim-milk, butter-milk, whey, and kitchen waste constitutes an important phase of their value. In the corn-belt of the United States, it is the consumption of the waste from the steers by the hogs that gives the feeder his profit. But aside from this, the hog in comparison with the sheep or ox produces flesh more economically. He eats more, relatively to his size, so that a smaller proportion of the food is used to supply heat and energy, and more is stored up as flesh. In assimilation too, the pig excels by reason of its long digestive tract, and is generally a very economical user of food.

We shall next consider the phase of porcine economics which relates to the method of farming pursued. No doubt a few hogs can be fed profitably on a

farm otherwise devoted to beef production, but it is on the dairy farm, in the corn belt, or where waste occurs that the hog is most profitable. The case of Denmark is a signal illustration of this fact, a fact which is patent even in our own country, it being universally admitted that dairying and swine-breeding can be most profitably united.

As to the class of swine to be fed, we are peculiarly situated. Owing to our conditions it is only the bacon trade that is profitable, but we have merely to glance at Denmark to see the result of intelligent application and endeavor along this special line. Denmark's example will also help to decide upon a class of swine which should best be suited to a nation desiring to produce high-class bacon.

The Danes raise only one class of hogs, there is just one type in the entire country. This conforms to the well-known bacon type with its strong constitution, smooth form, well arched rib, long, deep side, and strong, full hams. This single type, prevailing as it does throughout the whole country, insures that all the bacon packed is uniform in appearance and quality. Quantities of inferior stuff, which reduce the value and detract from the reputation of the national output, are seldom known. In a word, Denmark's success is due to the *uniformly* high quality of her product. Canadians still have much of this lesson of *uniformity* in bacon products to learn and to put into practice, and it is up to the farmer, so to speak, to bring about the desired end. But not without assistance. The packers and also the drovers must perform their duty by discriminat-

ing in favor of the bacon hog. Unscrupulous drovers and careless packers constantly hinder the attainment of the desired uniformity by buying lots comprising several different classes of pigs at a price which will admit of afterward grading them according to merit. Such methods do not encourage farmers to be

arched rib, and deep side, full, deep hams and strong clean bone. The bacon hog is expected to make up in depth of body what it lacks in width. This type of pig is proving, and will continue to prove, a profitable class of stock for Canadian farmers.

Having thus selected good stock, the question of feeding becomes pertinent. It is unnecessary to discuss all known feeds and all methods of feeding, but we shall mention the general



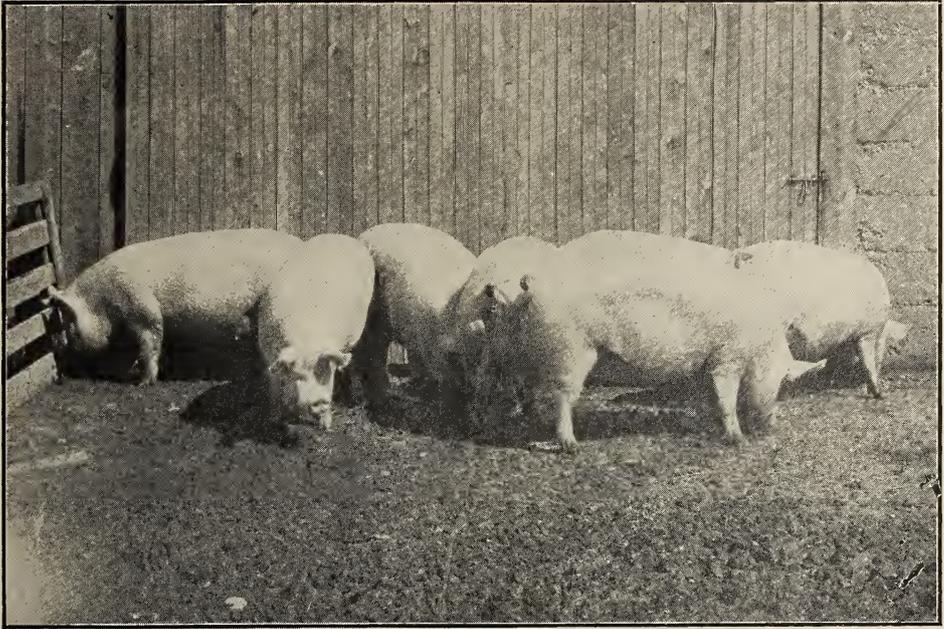
careful in their breeding and feeding operations, and cannot but be detrimental to the best interests of the Canadian bacon trade.

Turning from the packer's and drover's responsibility, we shall discuss rather briefly, phases of interest to the farmer. The initial selection of stock is of great importance, and the two cardinal considerations should be constitutional vigor and conformity to type. A deep, full chest, strong bone and thrifty appearance indicate good constitution. The essential features of type are a neat head and neck, smooth shoulders, a long and somewhat narrow body with a strong back, well-



Pigs in Rape.

principle which applies to feeds, the principle of variety. This rule holds in the feeding of all classes of stock, but, owing to the too frequent close confinement of pigs, it is most important as applied to swine. The method of feeding grain, and grain alone, has been superseded by one more economical of feed and better



Uniformity of Type.

suitable to the health of the animal. Under the best conditions, during the summer the pigs find themselves in a generous clover-pasture, so arranged with portable hog fences that it can be pastured in rotation, and thus green food is easily supplied and the cost of producing pork greatly lowered. In the fall, rape may take the place of clover. A grain ration of shorts and barley or shorts and corn with skim-milk added would, with the pasture and the freedom attending it, give ideal conditions. The nitrogenous ration and the exercise insures the formation of firm, hard flesh, which is produced at minimum cost.

Variety is even more important in winter than in summer feeding, for the hogs take little exercise, are in close quarters, and have not access to the soil. Roots and skim-milk should by all means, form a part of the ration. The grain fed should be more carbonaceous than formerly. Of exercise, the pigs

should have all that is possible, and this brings us to the question of housing.

During the last few years under the stimulation of the expanding bacon trade, a great many farmers have built elaborate piggeries. I do not count this a mistake, but it does seem that these large, expensive, illy-ventilated houses, which give little opportunity for their inmates to have exercise, cannot have all the advantage on their side. It is reasonable to maintain that, if we can give swine more comfortable quarters with less labor of attendance and less primary expense, it is best to do so. And it seems possible to provide such accommodation at small expense. All the housing required would be a good, warm building for the sows at farrowing, and for the weanlings, with, perhaps, a building into which the growing pigs might come to eat. For the growing stock the ubiquitous straw-stack would provide. It might be advisable when threshing to build it on a platform

a few feet above the ground, but in any case the pigs will soon solve the shelter problem. This gives dry quarters, fresh air, and exercise, and saves handling of the manure, while it entails no loss of the same. The breeding stock would require separate quarters. These could be provided by warmly banking the easily-constructed V-shaped pens, which, being movable, would serve for shelter both summer and winter. Practice proving as it does the value of fresh air, freedom, and exercise it must be conceded that the method just outlined has many things to recommend it, and that no farmer is debarred from engaging in this profitable industry because he lacks building capital.

Present indications lead us to look

hopefully forward to a bright future for our bacon trade. However, strenuous, intelligent, well-directed effort will be required to attain the goal. We must not be content with what we have, or, ceasing to struggle, we shall become weakened, and lose what we have already attained.

In this as in any other movement which upbuilds a nation, education is a prime factor. If we shall assiduously study our celebrated competitor's success, and carefully note our own conditions, if packers and farmers would see that sympathy and co-operation are best for both parties which, we may hope they shall see, there will be little to fear for the success of this important industry.



What Have You Done !

You are going to do great things, you say—

But what have you done ?

You are going to win in a splendid way,

As others have won ;

You have plans that when they are put in force

Will make you sublime ;

You have mapped out a glorious upward course—

But why don't you climb ?

You are going to do great things, you say

You have splendid plans :

Your dreams are of heights that are far away ;

They're a hopeful man's—

But the world, when it judges the case for you,

At the end, my son,

Will think not of what you were going to do,

But what you've done.

—S. E. Kiser, in *Escondido Times*.

Experimental.

An Experimental Shipment of Fruit to Winnipeg.

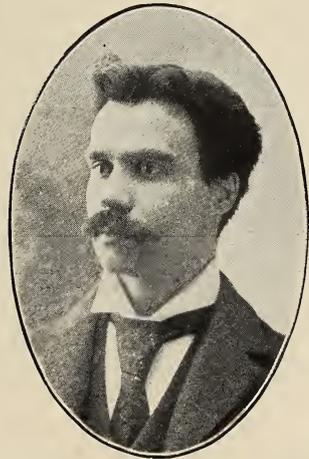
By J. B. REYNOLDS.



LEARLY in the season of 1904 active preparations were commenced for an experimental shipment of fruit to Winnipeg by freight, in cold storage. The objects of the shipment were to make inquiries into

used; the cars should be loaded carefully by nailing each package in place, and by spacing packages so as to allow circulation of air on all sides of a package; by shipping in carload lots the fruit would not be rehandled until it reached the market; and the cars must be kept iced, and as quick transit as possible secured. Crawford peaches formed the staple variety in the shipment, and as many kinds of fruit as were in season at the same time were included. Owing to the lateness of fruit this year, the cars were

the whole question of the fruit trade,—at the shipping point, during transportation, and at the market. Much preliminary work had to be covered before the shipment could be undertaken,—such as deciding upon and obtaining the packages to be used, interviewing fruit growers and securing promises of contributions to the shipment, instructing them upon the selection and packing of the fruit, and arranging the terms upon which the fruit was to be supplied. Beforehand, certain conditions seemed without trial to be essential to success, and these were as far as possible closely adhered to; the fruit selected should be all of No. 1 grade, and should be sufficiently mature to be of good quality upon reaching the market; peaches and Bartlett pears should be wrapped singly in paper; closed packages only should be



PROFESSOR REYNOLDS
Who Conducted the Experimental Shipment.

not shipped until Sept. 14th and 16th respectively.

I.—TRANSPORTATION.

(1) LOADING.

In loading a refrigerator car with boxes

of fruit, there are two conditions to be kept in view; a rigid structure, and provision for circulation of air on all sides of the boxes.

The plan in detail is illustrated in Fig. 1, which shows a number of boxes in



Figure 1.

position in the car. A row of boxes of the same length and depth was placed side by side, with ends butting against the end of the car, and separated from one another and from the sides of the car by narrow spaces. Across each end of the row a slat was laid, nailed to each box, and butting against the sides of the car. This was repeated until a tier was

formed as high as it was desired to go. Then another tier was built in exactly the same way, butting against the first tier, and so on from each end of the car, until it was filled. If any space remains over at the middle, too narrow for a tier of boxes, the load may be braced by scantling.

(2) CHARGES.

News was received at St. Catharines, before the first car was sent out, respecting the reduction of freight rates from 84c to 66c per hundred for mixed fruit. It is likely that our cars were the first to benefit by the more favorable rates. The change made a difference of \$36 on each car-load, 9 cents on a bushel of apples and nearly 4 cents on a box of peaches.

The new rates for icing not having been fixed when the transportation charges were sent in, a flat rate of \$16.00 was charged, which brought the total charge up to 74 cents a hundred for a carload of 20,000 pounds.

Before plans for the experiment were completed, the authorities of the Dominion Express Company were interviewed with the intention of shipping an express load on one of the Company's patent ventilated cars. A request was made for a quotation of rates on car-load lots from St. Catharines to Winnipeg. The Dominion Express Company, not having rail connection at St. Catharines, the quotation was to include the Canadian Express charge from St. Catharines to the point where the Dominion Express would take charge of the car. After consideration, the company offered to carry the car, upon payment of the local rate of the Canadian Express Company, 30 cents a hundred, and a further charge of \$2.25 a hundred for the portion of the line over which the Dominion Express ran, making a total

charge of \$2.55 a hundred. To this an alternative was offered by the Company, namely, to ship the fruit by electric line to Port Dalhousie, trans-ship to boat for carriage to Toronto, and trans-ship again to the Company's car at Toronto. This involved handling four times instead of twice, and loading twice by the Company's agents. Success in shipping to the West requires *as little handling as possible* and *careful loading*, hence the alternative as well as the original offer, was dismissed as impracticable.

A comparison of express rates per ordinary car, namely \$2.10 a hundred, with freight rates, 74 cents, gives the following figures, for tender fruits:

Peaches, per box of 20 pounds, express, 42.0 cents, freight, 14.8 cents.

Pears, per box of 25 pounds, express, 52.5 cents, freight, 18.5 cents.

Plums, per box of 25 pounds, express, 52.5 cents, freight, 18.5 cents.

Grapes, per basket (6=100 pounds), express, 35.0 cents, freight, 12.3 cents.

An express car loaded at Grimsby could be placed and sold at Winnipeg three days after. But tender fruits well-selected, well-packed, and well-loaded would be safer in a refrigerator car for six days or eight days than in a hot, unventilated express car for three days. Our experiment has proved that tender fruits can be carried by freight with safety; and as to rates, the total freight charges are a little more than one-third of the express rates.

II.—AT THE MARKET.

PEACHES.

The package used contains, in peaches wrapped in manila paper and tightly packed, slightly more than the 11-quart basket of bare peaches, about 13 quarts. Crawford peaches, XXX, realized from

85 to 90 cents net; Crawford, XX, 70 to 80; Elbertas 62½ to 80.

The peaches sold entirely on their appearance and quality, with no reputation to help them. It is very gratifying to note that the prices were fully equal to those for the best California peaches on the same dates. The greater size of the California fruit was quite counterbalanced by the superior brightness and color of our fruit.

With respect to competition of Ontario peaches with the Western product, it should be borne in mind that the latter suffers a serious handicap in the matter of charges. Against a freight charge of 15 cents on a box of peaches from Southern Ontario to Winnipeg, there is a freight charge of 36 cents from California, and in addition a duty of 19 cents, making a total of 55 cents,—a handicap of 40 cents a box. In a letter addressed to a Winnipeg commission firm, the writer saw quoted 50 cents a box F. O. B. California. To compete with these California prices, peaches might be quoted 90 cents a box F. O. B. St. Catharines or Grimsby. In fact, with one exception, prime Crawford peaches sold in advance of this price, and the average net price obtained for No. 1 Crawfords, counting the price of the box, was 92 cents.

PLUMS.

The dealers at Winnipeg seemed somewhat timid in purchasing the plums, and did not offer high prices, although the fruit was in good condition. In terms of the 11-quart basket, the Reine Claude plums netted 47 cents, the Yellow Egg 54 cents, and the Grand Duke and Glass 48 cents. These prices are of course much below Ontario prices this year, and would not be considered high at any time.

Fig. 2 shows the 2-basket-crate, and the condition of the plums at Winnipeg. The basket at the left contains Yellow Egg, the other Grand Duke. The

crate of 30 pounds, after deducting all charges and cost of packing. 40 to 50 cents a basket would be very nearly the equivalent of these prices. Had it not

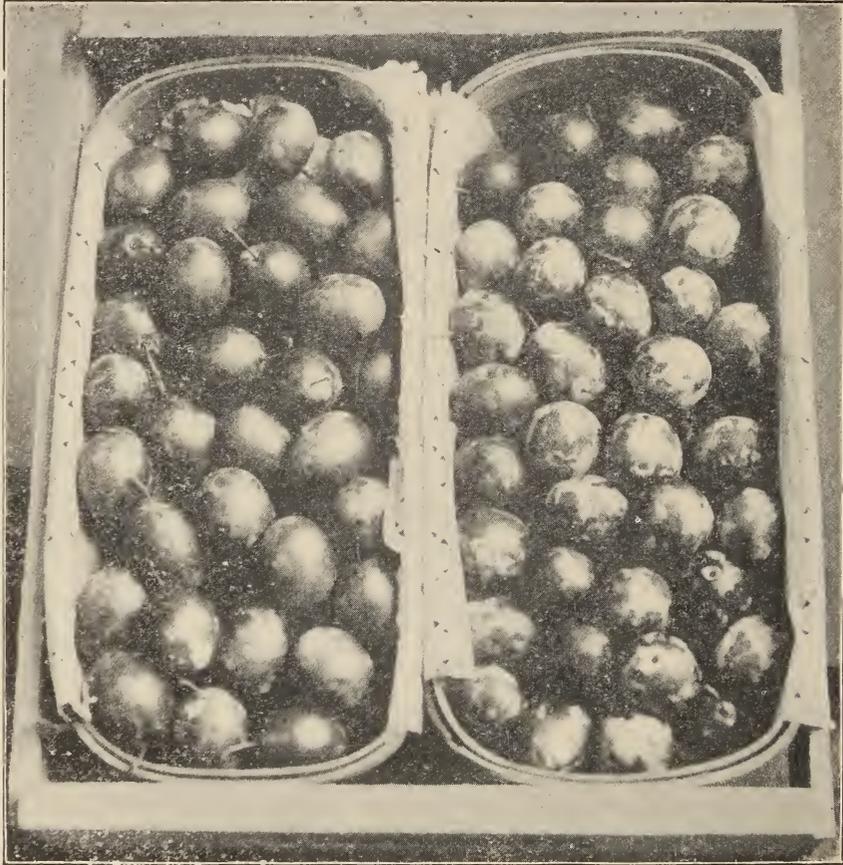


Figure 2.

spotted appearance of the latter is due to the partial bloom remaining on the fruit. These plums are shown just as they were opened up, and, as may be seen, are quite sound.

GRAPES.

With the exception of one lot of Moore's Early, of which a large percentage were off the stem, and which netted 55 cents, and one crate of Concord, which netted 70 cents, the grapes realized prices ranging from 75 cents to \$1.02 per

been for the excessive cost of the crate used,—30 cents, the results would have been even more satisfactory.

Character of Fruit Demanded. If one may judge from the sale of two cars of mixed fruit, the market there demands well-matured, bright fruit of clean sound appearance. Well-colored Crawford peaches sold much in advance of Elbertas, which, though large, were mostly hard and green. Immature fruit is not wanted. Many of the pears in the

second day's sale were green and very firm, and sold low accordingly. Of the apples, well-colored Gravensteins, Wealthy, Alexander, and St. Lawrence, commanded the best prices.

Best Degree of Maturity. A careful examination of the fruit at Winnipeg revealed the fact that the most mature fruit at shipping point was in best condition at the market. Evidently all classes of fruit may be left on the tree until full size and characteristic color

“semi-firm, a little too ripe for shipment,” and the peaches were large and well-colored. It was packed on September 15th, loaded September 16th, and sold at Winnipeg, September 23rd. On Monday, September 26th, a report was obtained to the effect that only a few of the peaches were then mellow enough to use, and that by the end of the week the whole of the box would probably be sufficiently ripe.

Fig. 3 shows:—(1) The California

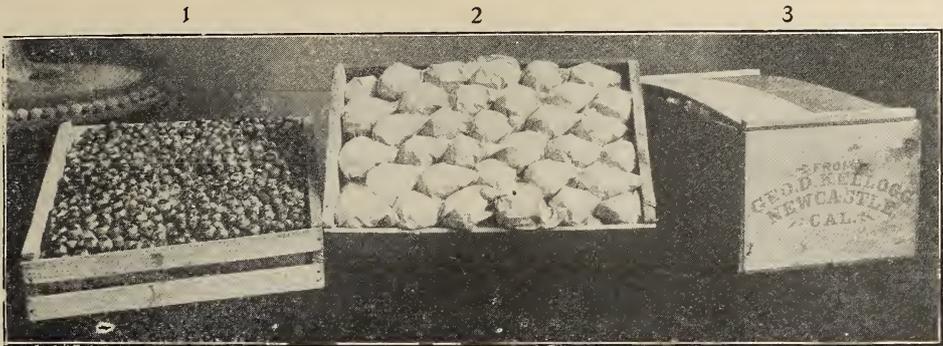


Figure 3

have been attained, but should be picked firm, and before the yellow tints, significant of ripeness, have begun to appear. Peaches and pears that were shipped hard and green reached the market without any perceptible change; those that were semi-firm at shipment had become sufficiently mellow to be in good usable condition. A special report was obtained of one box of peaches, among the primest of our two lots. This box at the shipping point was reported

grape-crate, a shallow square container, holding 4 square trays.

(2) A box of pears packed by J. W. Brennan of Grimsby. The pears are heaped toward the middle by selecting slightly larger pears for the middle; this heaping gives the effect, when the lid is on, as seen in (3) of this figure.

(3) is a box of California pears 9 x 12 x 18½ inches. By the style of packing, the pears are *squeezed* when the lid is on.



The San Jose Scale.

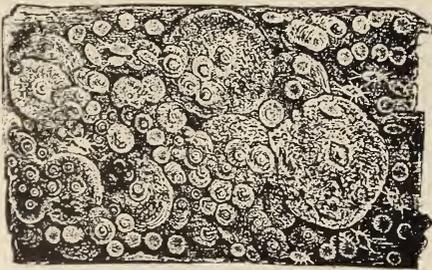
PERHAPS the most dangerous pest which has threatened the interests of the Ontario fruit-growers within the last decade is the San Jose scale. About nine years ago the

scale was first discovered in Ontario, and as the orchardmen were not acquainted with its destructive character, it did not receive the prompt attention which it deserved. When once introduced the

scale spread rapidly and before it was recognized as a serious pest many individual trees and even whole orchards were destroyed by its ravages. So extensive has been the damage wrought in certain sections that some fruit-growers have given up the fight and are making no attempt to eradicate the pest or check its deadly work.

These neglected orchards become breeding grounds for the scale, and from them it has spread to the surrounding locality, thus making it much harder for those who are taking preventive measures against it.

In other localities where its work has not been seen, the danger of the pest is not realized; sufficiently strong preven-



Scale Enlarged.

tative measures are not taken, and too often the scale becomes established.

When the deadly character of the scale became known, strong measures were taken for its eradication. The importation of nursery stock from infested districts was prohibited and the wholesale destruction of diseased trees ordered. In spite of these restrictions the scale continued to spread and it soon became apparent that in order to control it some remedial treatment would have to be introduced.

With this object in view the government started a series of experiments testing the relative value of several spraying mixtures in destroying the

scale. This work has been carried on for some years, with the result that remedies have now been found which are quite effective in keeping the scale in check and even eradicating it when not thoroughly established.

One of the most popular mixtures yet produced is the lime-sulphur wash which has now been used for three years with success. Another remedy known as the McBain mixture has been highly recommended by some.

In order to test the relative efficiency of these two substances a test was made this spring under the auspices of the Fruit Growers' Association. The two substances were applied on alternate rows in the same orchard and care was taken to have conditions exactly the same in both cases. The result of this test seems to indicate that there is little if any difference in the effectiveness of the two mixtures in destroying the scale, and as the lime-sulphur wash is much cheaper it will likely become more generally used.

This season there has been a large quantity of the lime and sulphur mixture used and the results have been highly satisfactory. However, much depends upon the thoroughness with which it is applied, but when the spraying is well done it is found to be very effective.

One great difficulty with the application of the lime-sulphur wash is that its preparation involves a considerable amount of time and labor in the boiling process. This spring experiments were started with the view of obtaining a mixture which would not necessitate this work. For this purpose two preparations were made; the lime-sulphur-sal-soda, and the lime-sulphur-caustic-soda washes. The former was made according to the following formula; lime 25 pounds, sul-

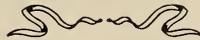
phur 20 pounds, sal-soda 12 pounds, water 40 gallons. These substances were mixed without the application of any heat in the boiling. The lime-sulphur-caustic-soda mixture contained 30 pounds lime, 15 pounds sulphur, 5 pounds caustic soda with 40 gallons of water. This was also made without additional heat.

These mixtures were applied to orchards which were affected similarly to those to which the regular lime-sulphur wash was applied. A careful inspection of the trees sprayed with these mixtures seems to indicate that they are about as successful in destroying the scale as regular lime-sulphur wash made by the boiling process.

In making either of these preparations

it is very important that a quick-slaking lime be used. The lime must slake quickly in order that sufficient heat may be generated to produce the necessary chemical changes. If this precaution is observed the data so far obtained seem to indicate that a very useful spraying mixture can be made without the boiling process, but further experimenting will have to be done before it can be definitely stated that it will always give as good results as the ordinary lime-sulphur mixture.

NOTE.—Experiments with the sal soda mixture, conducted in New York State this season seem to verify the results obtained in Ontario. There, it has given excellent results and is looked upon as a very valuable preparation.



BETTER.

There's only one motto you need

To succeed :

“ Better,”

The other man's winning? Then you

Must do

Better.

From the baking of bread

To the breaking a head,

From rhyming a ballad

To sliming a salad,

From mending of ditches

To spending of riches,

Follow the rule to the uttermost letter :

“ Better !”

A Comparative and Economic Study of Useful and Troublesome Grasses.

IN preparing this article, it is the desire of the writer to convey information which will enable those interested to distinguish between a few commonly occurring species which bear more or less resemblance to each other, and also to throw some light on the economic value of the grasses described.

For purposes of comparison, the species under consideration are placed in three groups, with three in each group.

GROUP I.

- Kentucky Blue Grass (*Poa pratensis*) Fig. 1.
 Canadian Blue Grass (*Poa compressa*) Fig. 2.
 Annual Blue Grass (*Poa annua*) Fig. 3.

Notwithstanding the fact that all three species are found in almost all parts of Ontario, and that there are distinguishing characteristics which should enable any one to identify each, even by casual observation, there are yet many farmers who have not observed the differences between Kentucky Blue and Canadian Blue, and comparatively few are aware that such a grass as Annual Blue exists, though it may be growing in abundance on their lawns and about their farm buildings.

Kentucky Blue Grass is also known by various other local names, such as June Grass, Wild Grass, and Smooth Stalked Meadow Grass. It is probably the most commonly occurring of all our native grasses and is one of the most useful. It is indigenous not only in Kentucky but also in Ontario and many other parts of North America, and thrives

as well in Ontario as in Kentucky or elsewhere. The leaves, stems, and heads are of a true green color, and have no bluish tint as the name would



Fig. 1



Fig. 3.

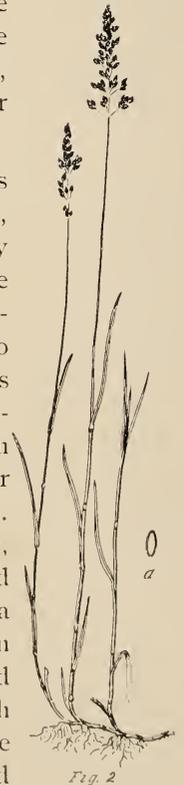


Fig. 2

seem to indicate. In this respect it differs from Canadian Blue Grass, which has a deep bluish green color throughout. Its abundance of very long, slender leaves, and the fact that it produces heads only in the early part of the season, should also distinguish it at once from Canadian Blue. Kentucky Blue is chiefly valuable as a pasture grass. It possesses the power of holding its own against other species, even under unfavorable conditions, and by means of its vigorous, creeping rootstocks soon spreads and fills up vacant spaces left by the dying out of other kinds.

Canadian Blue Grass, or Wire Grass, is of much less importance to us than the former, as it produces very much less pasturage and is not found on such a great variety of soil. It occurs most commonly on rather sharp, gravelly soils, where Kentucky Blue would not thrive. It is distinguished from the latter by having flattened stems, by producing only a scant supply of short leaves, by its continuing to send up heads throughout the season, and by the bluish green color of its leaves and stems. It is from this species that the Blue Grasses have derived their name. Though it is of considerable value in lawn mixtures and for other purposes under certain conditions, it is often found to be rather difficult to eradicate, and for this reason is not infrequently condemned. Like Kentucky Blue it spreads quickly by sending out underground rootstocks, from the joints of which young plants shoot up. (a) Fig. 1 represents an enlarged cross section of the stem of Kentucky Blue, and (a) Fig. 2 a corresponding section of the stem of Canadian Blue. A comparison of these will convey a clear idea of the difference between the stem of the two species.

Fig. 3 shows the small growth and spreading nature of the Annual Blue, or Low Spear Grass, which differs entirely from the previously described species in being an annual, having only fibrous roots. This grass seems well suited to a variety of soils and is very commonly found on lawns, though not intentionally sown there. It is probable that the seed of Kentucky Blue purchased for seeding lawns frequently contains a quantity of the seed of Annual Blue. The plants are of a light green color. Heads appear very early in the season—soon after the snow is off—and continue to be produced until late fall. It seeds abundantly and, therefore, though an annual, holds its own in the lawn among the other grasses without being re-sown.

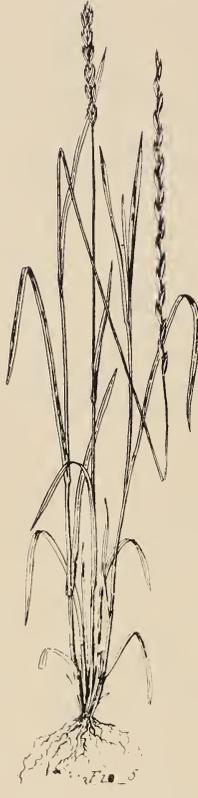
GROUP 2.

- | | | |
|---------------|------------------------------|---------|
| Perennial Rye | (<i>Lolium perenne</i>) | Fig. 4. |
| Western Rye | (<i>Agropyron tenerum</i>) | Fig. 5. |
| Couch Grass | (<i>Agropyron repens</i>) | Fig. 6. |

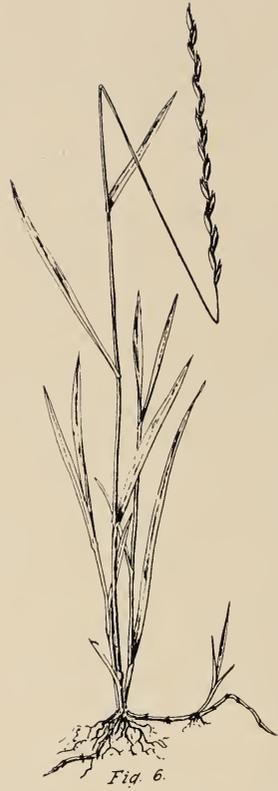
The true rye grasses all belong to the genus *Lolium*, and include many cultivated varieties. Chief among these is the one commonly known as Perennial Rye or Darnel Grass. This is probably the oldest of all cultivated grasses, and is one of inestimable value in England and other European countries having a moist climate, but has not proven to be as profitable in America as in the Old Land. It is a short lived grass, lasting only a few years, and is therefore used only in short rotations. In Ontario it rarely grows to a height of more than two feet, and its yields are small. It matures somewhat earlier than Timothy. Fig. 4 gives a fair idea of its characteristic appearance.



Perennial Rye.



Western Rye.



Couch Grass.

Western Rye is also, and more correctly, called Slender Wheat Grass. It does not belong to the genus *Lolium*, and is therefore not one of the true rye grasses, though it somewhat resembles these. A careful comparison of Figs. 4 and 5 will show that the true rye grasses have their spikelets set edgewise on the central stem, or rachis, while on the Western Rye the spikelets are set flatwise. This is the chief distinguishing feature between the genera *Lolium* and *Agropyron*. Western Rye is a native of our Canadian prairies and was first brought under cultivation in Manitoba about eighteen years ago. Since then it has been widely distributed and has proven to be a valuable grass in many sections. It is very hardy, withstanding the winter's cold and the summer's drouth better than many of our older grasses. It produces a very heavy crop of hay and an abundance of pasturage, but is nearly two weeks later in maturing than Timothy, and therefore is not well suited for growing with red clover.

Couch Grass, like most weeds, is known under many local names, each locality having its own particular name for this intruder on our cultivated fields. In one section it is called Couch, in another Twitch, in another Quack, and in other sections by still other names. Though this grass is an exceedingly troublesome weed, it should be remembered that it is not without its redeeming features. On lands which are too rough to be cultivated, it may be allowed to grow with great advantage to the farmer, as it produces a large crop of pasture which is much relished by all kinds of cattle. Couch grass is another species of the genus

Agropyron, and therefore closely resembles Western Rye in some respects, but can be distinguished from it by its creeping rootstocks, and by its longer, narrower, and softer leaves. Western Rye never produces rootstocks; Couch Grass invariably does. (Compare roots in Figs. 5 and 6.)



GROUP 3.

- Chess (*Bromus secalinus*) Fig. 7.
 Awnless Brome (*Bromus inermis*) Fig. 8.
 Fringed Brome (*Bromus ciliatus*) Fig. 9.

Chess, or Cheat, is a well known annual grass commonly found in winter wheat fields where the wheat crop has been more or less killed out by severe winter weather. In such cases the plants have developed from seed left in the land by chess growing there the previous year, or from seed contained in the seed wheat which was sown on the land in the fall. It frequently happens that seed wheat contains a considerable admixture of Chess, which is inadvertently sown with the wheat. In such cases, where the wheat kills out in spots, the Chess will grow and thrive, while, if the wheat is not winter killed or otherwise injured, it will, to a great extent, check the growth of the Chess, and very little of the latter will be seen growing in the field. It is usually looked upon with disfavor because it is, to some extent, a nuisance, and because of the erroneous idea that unthrifty wheat degenerates into Chess. In stem and leaf, the plant somewhat resembles wheat, but the heads are

entirely different, as may be seen by an examination of Fig. 7. Though Chess is so familiar to many farmers, the fact that it is a very near relative to the Awnless Brome Grass, now so widely cultivated on the prairie farms of the West, is not generally known. It differs from the cultivated Brome grasses in that it is an annual and will not grow from year to year without being re-seeded.

Awnless Brome Grass, though now so widely cultivated in Western America, is a native of Europe and is frequently called Russian Brome, or Hungarian Brome. It differs from Chess in being a perennial with running rootstocks, and in having more widely spreading heads with longer and more slender spikelets and no awns. It is giving excellent results in Manitoba and elsewhere in the West, but experiments at the College have not shown it to be of great value for our Ontario conditions. It is hardy and withstands drouth well, but does not yield heavily at Guelph. Owing to its creeping habit, it seems to be somewhat difficult to eradicate, but will no doubt continue to be largely grown in the West, because of its heavy yielding and drouth resisting qualities under western conditions.

Among the Brome grasses grown at the College, no other has given such satisfactory results as the Fringed Brome. A comparison of Figs. 8 to 9 will show that this grass has broader leaves and larger and more drooping heads than Awnless Brome and also that it is free from underground rootstocks. When grown side by side, the two species may be easily distinguished by the lighter green color of the leaves and stems of the Fringed Brome. This grass seems best suited to moist, rich lands, but has given good results on comparatively dry and light lands. It yields a heavy crop of rather coarse hay, but only a scant pasturage after the hay crop has been taken off. It is quite late in maturing, being about three weeks later than Timothy, while Awnless Brome is ready to cut at about the same time as Timothy.

As there are about six million acres of hay and pasture crops grown in Ontario annually, it would seem wise for farmers to acquire as complete a knowledge of the native and introduced grasses as possible in order that they may be able to distinguish between useful and troublesome species, and to select those which may be most profitably grown on their own soils and under their own particular conditions. It is hoped that the foregoing descriptions and drawings may suffice to throw some light on at least a part of the subject.

J. BUCHANAN.

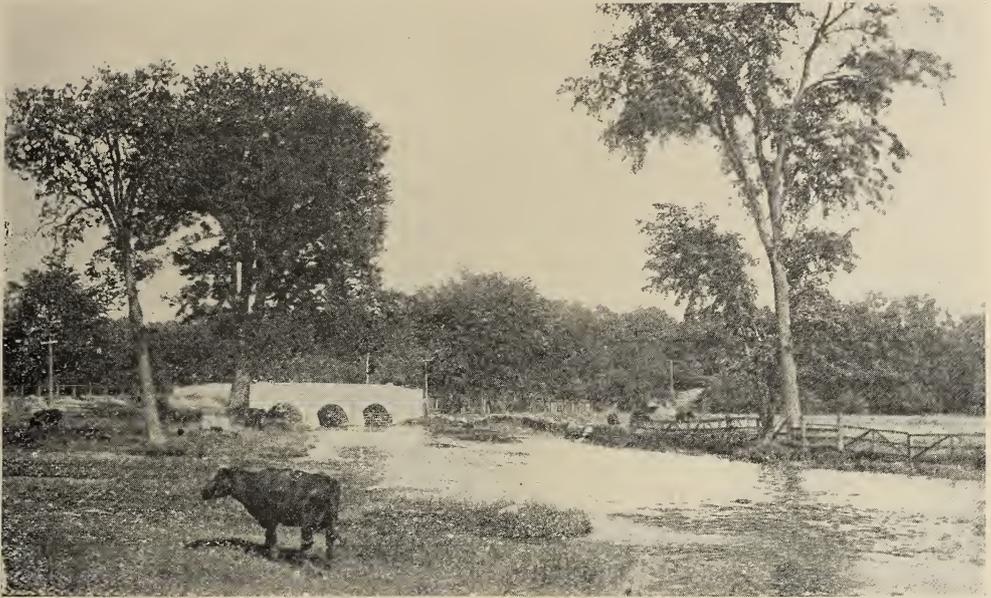
Horticulture.

RURAL BEAUTY





Pretty Vistas of Wood and Stream.



Some Favorite Scene that Breathes the Life of all Out-Doors.



Where the Stately Elms bend over the Water to Admire their Images Mirrored below.



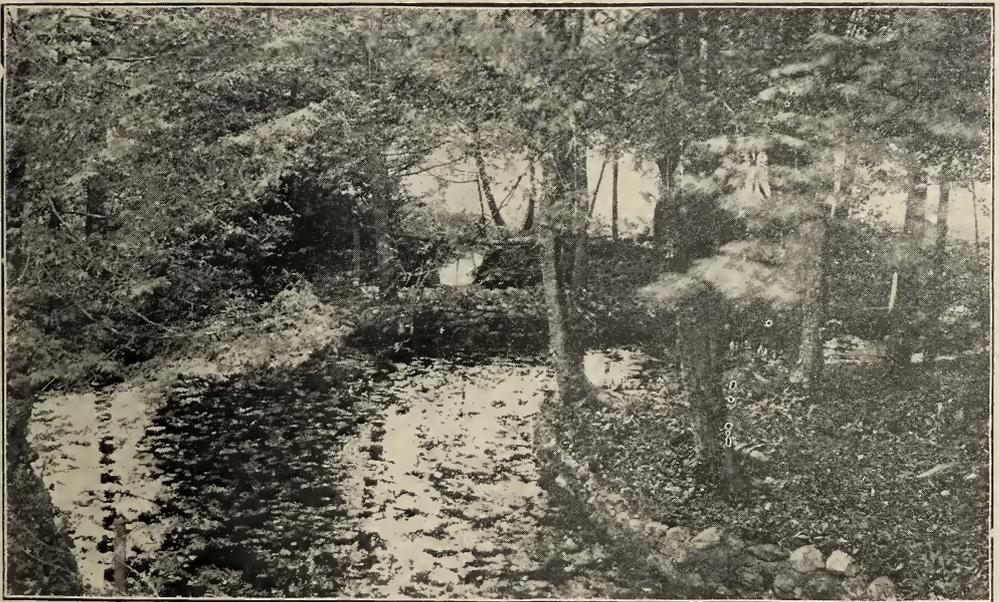
I come from haunts of coot and hern,
I make a sudden sally,
And sparkle out among the fern
To bicker down a valley.

—Tennyson—THE BROOK.



I chatter over stony ways,
 In little sharps and trebles,
 I bubble into eddying bays,
 I babble on the pebbles.

—Tennyson—THE BROOK.



Witch elms that counterchange the floor,
 Of this flat lawn with dusk and bright.

—Tennyson—IN MEMORIAM.

Rural Beauty and its Relation to the Location of Farm Homes.

ALMOST every one, be he country-born or city-bred, has remarked from time to time when passing through the country, scenes of rural beauty that have impressed themselves upon his memory and that come back to him with a freshness and a charm all their own, even after years have passed since his casual glance was first held by their loveliness. Who of us but carries with him the memory of some favorite scene that breathes the life of all outdoors, the charming informality of Nature, of kindly mother earth, of fresh sweet flowers that bloom untrained and scattered in a confusion that the highest art tries in vain to imitate?

We look for rural beauty first, perhaps, in expansive outlooks of landscape, sweeping views of woodland or of field, vistas of distant hills or water courses, in short, in scenery on a scale suggesting unbounded scope, for magnitude alone can fully express the dominant sentiment of country life, the untrammelled spirit of freedom that pervades the whole rural atmosphere. From every hill great stretches of landscape delight the eye. Meadow and wood, lake and stream, fields brown, or green, or golden, spread out before the gaze. Even the element of motion is not lacking for every breath of air sends rolling waves across the grain fields, sets the branches of the trees to swaying, or sends cloud shadows chasing one another across the land.

But not alone in broad prospects of distant landscape is rural beauty met; for Nature never forgets to perfect

details. 'Tis said that "Distance lends enchantment to the view," but 'tis not always so in Nature, for Nature's works bear close inspection. The eye loves to dwell on little woodland thickets where carpets of moss are spread so soft and green, on the glades where violets grow, or on the banks where delicate hepaticas love to bloom. Sequestered paths invite the traveler to explore their depths, a rustic bridge paints a lasting picture on memory's wall, or cattle grazing in a well watered meadow where stately elms bend graciously over the water to admire their own images reflected below, please the beholder's eye. Tree-lined roads never fail to excite the admiration of the wayfarer, and there are few more pleasant features in the landscape than the avenue of elms or maples that shelters the traveler from the wind or provides shade on the hot days of summer. Often stretches of roadway are lined with the monarchs of the natural forest, arranged with a pleasing irregularity that adds greatly to the artistic effect.

In a country like our own where hill and valley, and forest and plain, are so interspersed, where streams and lakes abound, where Nature clothes the landscape in the richest hues of summer or the pure white of winter, where almost every farm offers some vantage point convenient of access and commanding superb views of the surrounding landscape, one might reasonably expect to find a people deeply appreciative and taking advantage of the lavish beauty showered upon them. Hence it is the

more surprising and the more a matter to be deplored that the majority of country homes are located utterly without regard to scenic environment or to artistic effect. In fact it would almost appear that the adage, familiarity breeds, if not contempt, at least indifference, could be truthfully applied to a large proportion of the suburban population of our Province.

The writer recalls a case in point which may serve to illustrate the idea just expressed.

A substantial house was erected a year ago on a farm of two hundred acres to replace an old farmstead recently burned. The farm itself affords a wide variety of landscape effect, and good building sites are numerous. The old house, built eighty years ago, formed part of the village and had doubtless been located with regard to its proximity to market and store, a consideration of importance in the days when corduroy roads were the usual highways for traffic. The site is a low-lying piece of ground; the north and east fronts commanding a view of a barren gravel hill, the sides of which are almost destitute of vegetation; the south looking out on a lumber yard and the farm buildings; while the view from the west is shut in by a woods whose protection from the west winds seems to offer the only reasonable excuse for the location of the homestead on such a site.

Less than a quarter of a mile away there is on this same farm an ideal building spot, protected on the west by a thick belt of natural timber, commanding a superb view of a park-like country extending to the south, east and north for miles, and overlooking in the foreground a hillside covered with magnificent oaks, and with a stream of clear spring water at its base. On the right,

but a hundred yards distant, is a ravine with a brook of crystal water that bursts from the rock itself and flows between banks whose sides present fresh beauties with every season of the year. This location is near the centre of the farm and in its most fertile part, and though located on a hill, is easy of access. Yet the owner, apparently for no better reason than the fact that some preceding proprietor had adopted the site first mentioned, chose the same spot on which to locate the new homestead.

How different the picture of this farm home from that of another which comes to our mind at this moment! The substantial well-built house placed at the top of a sloping lawn, just far enough removed from the public road to escape its noise and dust, half concealed and half revealed among the trees and shrubs that cluster about the approach and the vines that clamber over the porch and windows! From the front of the house pretty vistas of distant fields, of woods and orchard, catch the eye with a fleeting grace of which the observer never tires. The murmur of a waterfall not far distant strikes the listener's ear, and from the back of the house a scene even fairer than that from the front meets the eye, orchard on one side, and woodland on the other, while just between them through a break in the hills, gleam the blue waters of Lake Ontario.

Locations such as the one to which we have just referred are, however, the exception rather than the rule, and it is to the disregard of the farming population of our country for natural advantages in locating farm homes, that the reader's attention is now directed. This indifference to the beautiful in selecting building-sites offers, indeed, an interesting problem to the student of rural social economy. The care-worn business man flies to the

country to restore his jaded nerves to their normal condition and to bathe his weary spirit in Nature's freshness; the traveler exclaims at the picturesque loveliness that greets him on every hand; and children scream with delight at the mention of a visit to the country. Why then, should the farmer who lives in the midst of beautiful possibilities in the enjoyment of rural loveliness, go his way, his mind fixed on the regular routine of life, his eyes seldom raised from the task of raking together the straws that strew the earth to behold the halo of glory all about him?

We cannot think that the farmer's indifference to the desirability of locating his home in the midst of beautiful surroundings is due to any incapacity on his part to appreciate the artistic. Country people possess, almost without exception, a deep appreciation for neatness in all that pertains to the artificial on the farm, though let it not be inferred by the reader that they always prove their faith by their works; rather is their estimation of neatness shown in the joy that sparkles in the eye of every husbandman as he views the long neatly-turned furrows either in his own field or in his neighbor's, in the pleasure he experiences as he looks at a well-kept orchard, at an even "catch" of "seed," or in the

satisfaction that he experiences on the completion of a piece of new woven wire fence that replaces one of the stump or snake rail variety. And surely the man who appreciates neatly-kept fence-rows, carefully laid out farm buildings, straight rows in the cornfield, and a general sharpness and squareness of angle in all that pertains to the business side of farming, is capable of learning to appreciate, and that quickly, the advantages of utilizing beautiful locations on which to place the farmstead.

The unpleasant features of farm life have been numerous enough in the past to encourage a drift of population from the country to the city, and too frequently not the least important of these conditions is the unpleasant location of the farm buildings. When the rural community has been taught to appreciate the beauty amidst which it dwells, and to take advantage of every opportunity to enjoy that beauty, much will have been done to make farm life not, we shall say, so tolerable, but so congenial that the movement of population from the country to the cities will have been stopped, and so delightful that a considerable proportion of the urban populace will return to the farm to seek more home-like surroundings and a more healthful and pleasant occupation.

B. S. PICKETT.



'Twas only a glance, but all the day
 That glance made glad my heart,
 And thoughts thereof along my way,
 Makes of life's joys a part.

The Chrysanthemum.

Queen of Autumn ! floral queen of the fast waning year,
 Thy bright glowing blossoms seem to gladden and cheer ;
 Thy many hued, many formed florets look gladsome and gay,
 Floral stars, sent to brighten the gloom of November's dull day.

Though your glowing petals may fade, as Xmas draws near,
 And your brilliant blossoms droop, ere the New Year is here,
 Yet midst the holly bright and Yule Tide's festive scene
 Sweet memories of thy beauty still linger, bright Autumn Queen.



FROM the extreme north-east of Asia, westward and southward through China and Japan, in almost all the countries of Europe, as well as in Northern Africa and Asiatic Turkey ; and even in Kamschatka, and on the almost barren steppes of Northern Siberia, some representative of the genus chrysanthemum is found growing wild. In our own country and at least as far south as Mexico, some one or other of its species is indigenous to particular localities. The Ox Eye Daisy or Chrysanthemum leucanthemum being the commonest type in Northern America.

We are indebted to China and Japan for the original types of the beautiful cultivated specimens of these lovely autumn flowers that we now have. In these Eastern countries mentioned, the chrysanthemum was cultivated for many centuries before they were introduced to European floriculture. In China and Japan both these flowers have for ages been prominently associated with the numerous fetes and festivals common to these countries. In Japan particularly, their flowers are used even now in enormous quantities in the make up of floral devices and emblems used in the different forms of hero-worship, such as

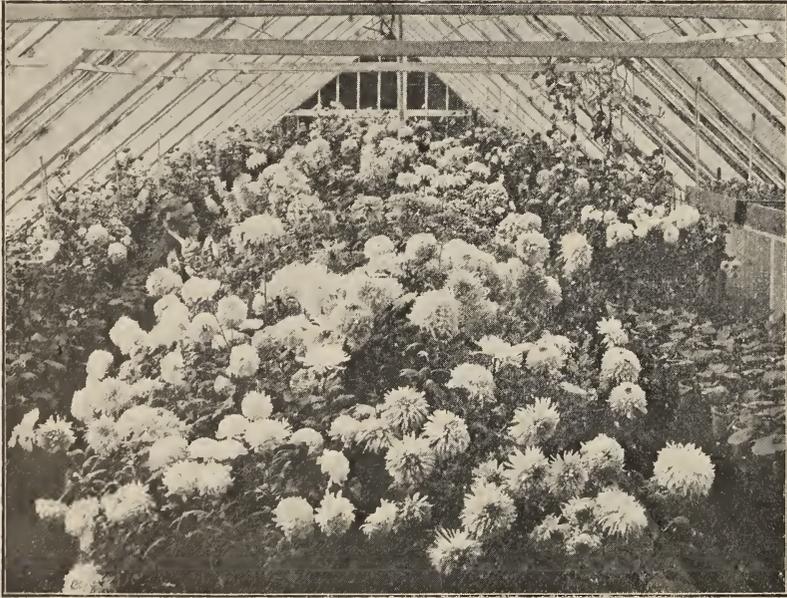
the building of figures representative of their greatest mythological and historic characters. The best and most skilful artists of these Eastern lands have also for many years, been employed in representing the beautiful forms and the gorgeous many tinted shades of chrysanthemums in their illustrated books. in fabrics of silk and similar material, and on their quaint, unique and artistic style of pottery. The chrysanthemum is the national floral emblem of Japan and much in evidence at their national fetes and festivals, emblematic of a highly cultured aesthetic taste.

It is now upwards of two centuries ago since the first types of Chinese chrysanthemums were introduced into England, but it is only a few years over the one century mark, since the more improved type of the Queen of Autumn was first brought to Europe from its native haunts. The Royal Botanical garden at Kew is credited with receiving the first of the large flowering Chinese type of chrysanthemum. These early types were at best but poor representatives of even the smallest of our exhibition varieties at the present time, It was not until as late as 1860 that the original types of the present grand specimens of Japanese chrysan-

emums were introduced from the town of Ak-saw-sax in Japan by Mr. Robert Fortune, a famous plant collector, to whom we are deeply indebted for the introduction of many beautiful species of plants from these far Eastern lands.

The development of the chrysanthemum since the introduction of these new types in 1860 has been very rapid, many new features or sub-types of the originals having been added to the list.

And last but not by any means least, as far as quality of flower is concerned, several of the grandest exhibition varieties now grown owe their origin to the art and genius of Canadian florists. Foremost in this respect is Mr. Miller of Bracondale near Toronto, who raised the variety known as "Timothy Eaton" as well as others of equal merit, all of which have already gained a world-wide reputation and importance. Some



Chrysanthemums at O. A. C., 1904.

Mr. Salter of London, England, and his successor, Mr. Forsyth, were two of the principal improvers from seedlings of these new Japanese types. The latter gentleman was only a few years ago still interested in the development of this autumn flower at Otago, New Zealand. French florists, as well as flower-lovers in other lands, have done much toward the development of new varieties of this popular flower. Our American friends have also during the last few years introduced many new and beautiful seedling

grand and massive blooms of the "Timothy Eaton" variety were on exhibition at the recent Fruit, Flower, and Honey Show held in Toronto, as well as other varieties of Canadian origin.

The improvement in the feathered or hairy type of chrysanthemum seems to offer the best inducements for experiments in this respect, as they are doubtless destined to become favorites with the flower-loving public generally. A stout, strong, flowering stem, and a more robust constitution generally are the main

essentials required in the feathered type of flower to make them still more attractive and ornamental. In the matter of color also there is still a place for new varieties, for although we have an almost innumerable list of colors and shades to select from, there is still room for a good violet, or a good scarlet chrysanthemum, to say nothing of a blue, of which latter attractive color we have far too little among our cultivated garden plants. Some of the newer varieties which I shall mention later on have a slight shading of blue showing in their magenta colored petals, but the shading is very slight, and only seen under certain conditions of light, and development of flowers. Floricultural records quote instances of blue and violet chrysanthemums having been grown in Eastern lands, but so far none of them have reached us; possibly the coloring was only of a temporary nature, and caused by the use of mineral or chemical matter to the roots of the plants, or climatic conditions may possibly affect the color. Illustrative of the great progress made, however, is the development of the chrysanthemum since its introduction.

At an exhibit of these flowers held in London, England, a few years ago, a flower of the original type received at Kew Garden in 1795 was placed on exhibition alongside some of the giant specimens of recent introduction. The size of the original type was as nearly as possible the size of a twenty-five cent piece, while some of the modern varieties measured from fifteen to eighteen inches in diameter; an apt and instructive lesson on what can be attained by a careful selection of type, combined with intensely high culture, and the scientific cross fertilization of improved types of flowers. Still there is room for variety in habit, form and color before the almost

phantom pinnacle of perfection of plant life is reached, so as to suit all tastes and requirements.

In connection with this feature of chrysanthemum culture more especially during the past three or four years, more attention has been given to the various points that combine to make an ideal type of plant and flower. Instead of



Ben Wells.

striving to secure varieties having abnormally large flowers, borne on stems of almost telegraph-pole height as was the custom a few years ago, the aim of the plant-lover is now to secure, not only beauty of form and color, but also to secure plants of a naturally dwarf compact habit, with stems sturdy and strong enough to carry its burden of bright florets boldly and prominently from the

main stems of the plant. Since the attack of the destructive disease called "rust" in these autumn flowers, a robust healthy constitution is one of the desirable points necessary to help make up a perfect type of plant and flower. Plants having flower stems furnished with glossy green well developed foliage are also necessary, a perfectly developed and thoroughly healthy foliage being quite as desirable from a decorative



No. 1. No. 2. No. 3.

No. 1—Mrs. Nathan Smith.
No. 2—Miss Helen Frick.
No. 3—Middle. Marie Liger.

point of view as a flower of perfect form and color.

I had intended to make some remarks on the newer varieties of chrysanthemums tested at the College greenhouses during the past three years, but find I must defer that pleasure for a future number. I may, however, say that the flower shown on the right of Cut above, represents a flower of 1903 intro-

duction, Middle. Marie Liger. As its name implies it is of French origin, and promises to be a popular and useful variety. The color is a bright, silvery pink, the form of flower being of the attractive incurved type, its free flowering habit is also another recommendation for it.

Another beautiful rose pink flower shading to lavender can be seen in the centre of the picture. This is one of the newer introductions of 1904, and is likely to prove one of the best varieties of recent introduction. Its robust, compact, sturdy habit of growth, and its bright rose pink Japanese type of flower, one of the standard colors, will possibly make this variety very popular with all flower-lovers, more especially professional florists. Miss Helen Frick is the name of this promising variety. On the left of the picture is seen a flower of a new variety called Mrs. Nathan Smith. The flower is of a pure marbled whiteness, incurved in form, the broad ivory like substance of its beautifully formed petals adds very largely to its delicate beauty. This variety is named after the wife of one of the most prominent chrysanthemum growers in the United States. Mr. Nathan Smith has raised and distributed many of the newer varieties of chrysanthemums of foreign as well as American production.

The variety shown in Cut No. 2 represents a flower of "Ben Wells," a variety of 1904 introduction. The strong robust habit of this plant, together with its floriferous character, as to the size of its pure white flowers, makes one feel justified in saying that this will be a popular variety, especially for amateur growers. As showing its floriferous character, I may say that one plant had fifteen blooms of extra large size on it, produced with only ordinary pot plant

culture. Many of our student readers will I know agree with me, when I say that the first name of this desirable variety should be changed, so as to agree literally and physically with near at hand local surroundings.

Among other new varieties of 1904 tested, Kimberly, Golden Age, Uncle John and General Hutton, will increase the varieties in yellow shades, whilst Etienne Bonnesford gives us an early flowering buff and apricot bloom. This variety is of rather dwarf habit, and will probably fill a want in flowers of this peculiar shade.

Among the newer shades of rich purple, the Rev. W. Wilkes gives us some new tints of coloring. The bright rose magenta of its bright semi-tinted petals, with the reverse of a glistening silver, makes this variety very noticeable among a collection of plants. The habit of the plant is also good.

Mention of other new varieties of 1904 must at present be deferred.

In concluding my remarks on these popular autumn flowers, there is one desirable feature possible in their development that I have omitted to mention, viz., the introduction of types of late flowering varieties, that will give us a wealth of their gorgeous flowers in perfect condition at Christmas time. Their flowers are invaluable as decorative material, and if only their period of flowering could be extended until the holidays, their value would be largely increased. Efforts in this direction have already achieved gratifying results, much more can and will possibly be attained in the evolution of this universally popular and world-wide grown flower, more especially in regard to its possibilities as a Christmas and New Year flower.³



Fruit, Flower, and Honey Show.

THE Provincial Fruit, Flower, and Honey Show held in the Granite Rink, Toronto, in November, was a decided success. Seldom, if ever, has such a display of flowers, fruit or honey been on exhibition in Canada. In the floral department the chrysanthemum shows of former years were surpassed. The exhibits were all arranged neatly and so as to show to good advantage. The 'mums were large and beautiful, with Dr. Oronhyatekha, Timothy Eaton and Golden Wedding chiefly worthy of mention. Several new and promising varieties were in the display. Groups of ferns and foliage plants and orchid displays were admired by all lovers of flowers. Carnations,

Roses, and all other flowers on exhibition were simply the best that Canada's florist have yet produced.

Many had prophesied that the show of fruit would be small and the specimens inferior owing to the fact that the past season was not all that could be desired for fruit growing. However, with small contributions from Quebec, Nova Scotia, Prince Edward Island, and British Columbia supplementing the magnificent collections from Ontario orchards, all these doubts were quickly shattered on entering the fruit division. The different fruit experiment stations had grand exhibits from their respective districts. These collections contained desirable and undesirable varieties, and were labeled

so that each one could learn the merits of the numerous specimens. A collection from St. Joseph's Island clearly demonstrated that many varieties of different fruits will survive the hardships of winter and reach an edible condition in that northern section. A notable feature about the same varieties of apples from the different provinces was, that although comparatively flat in the eastern provinces, they lengthened out from stem to calyx, as they were grown farther west, until the same variety from British Columbia was a decidedly long apple.

At one end of the rink two Dominion fruit inspectors and two expert packers gave demonstrations in the packing of fruit for export. They had a packing table, presses, etc., and a quantity of apples which they filled into barrels and boxes, explaining the most important points to be taken into consideration, as they worked.

In the other end of the rink the Women's Institute had a fine exhibit under the supervision of Superintendent Putnam. Tempting dishes of luscious fruit called a halt to the passer-by, and valuable information was given by mem-

bers of the Institute staff. Circulars containing numerous recipes and a list of different varieties suited to different uses were given to those who visited the show.

Another worthy feature was a display of injurious insects and fungi as well as specimens of fruit, leaf, or branch attacked by them. This was furnished by the Ontario Agricultural College. Each pest had a label giving the name, host, preventative, if any, and most approved remedies. Besides these, some cases of wax models merited much praise for the O. A. C. wax-work artist.

This show has been of great importance to Ontario's Fruit and Floral interests. The great possibilities for future development have been shown and now it is to be expected that something greater will follow next year. Everything was attractive and on all sides were educational features from which all interested in these lines could get new ideas and go away feeling that good had been done in more ways than one. The concensus of opinion of all interested was that it should become an annual function.

In connection with the article on Greenhouse Carnations in our last issue, the description of the cuts is misleading. Fig. No. 1 should have been described as "Flower Stem showing desirable side shoots for propagating." Fig. No. 2 as showing "Undesirable growth for propagating purposes," whilst No. 3 should have been described as "A typical, prepared carnation cutting." The reading matter in above article describes fully the engravings, but the descriptive matter attached to the plates is misleading. (*Ed.*)

The O. A. C. Review

Editorial Staff.

R. J. DEACHMAN, '05	-	Managing Editor.
H. R. MacMILLAN '06	-	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
F. M. LOGAN, '05, 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.

Last year in our Christmas issue we told you the simple story of our paper's history. The old year has nearly gone; we stand at the threshold of another, and with new hopes and aspirations are looking forward to the accomplishment of still greater things in the future. The past year was the most successful in the history of our paper. The circulation and advertising increased by leaps and bounds until our issue for May, the closing one of the college year, was the largest number of the REVIEW ever issued. But the goal of the past proved the starting point for the future, and when we returned at the opening of college we found conditions ripe for another forward move. Advertising patronage was secured as never before. Much of it came unsolicited. The manufacturer had become cognizant of the fact that the REVIEW carried a message to the people he desired to reach,

A Forward Move.

and with the realization of this fact came the necessary funds so essential for a growing journal. With the many improvements came a larger increase of circulation and thus the merry-go-round of prosperity continued on its merry go.

A new difficulty now confronts us. We are holding the reigns of a paper that is throbbing and pulsating with energy and life. The spirit of growth has taken possession and forward must be the move.

The work of management has become too difficult for the student, who hopes for the blessing of the staff on his final examination day. We are face to face with the problem of a journalistic enterprise held in check solely by the lack of time of those in charge.

What shall be done? Hold our own, and remain in our present position, or with new ideas carry to a crowning success the efforts so far put forward? For us there can be no turning back. We

must go forward, and forward to the publication of a journal that will take its place in the best Canadian homes. To do this we must have, in the permanent employment of the REVIEW, a man who will act in the capacity of manager. He would look after the advertising, direct the general policy of the paper, and relieve the students of much of the work now bearing too heavily upon them.

It may be urged that this would be taking the paper out of the hands of the students, and would detract somewhat from student interest in the work. Not by any means! The fact that the general features of the paper would be strengthened would not lessen its interest from a local standpoint. It would not necessarily be less local in character, in spite of the fact that it would be larger and of more general interest. Nor would the fact that the drudgery was lessened alter the present arrangement by which the student body is in control of the paper. It would be of greater interest than ever to the student; and the ex-student could not fail to support a paper so well calculated to keep him in touch with the work of advanced agriculture.

Such a journal would not enter into competition with other papers in the agricultural field. It would stand upon a different plane. Appealing to the higher class of educated farmers, discussing those questions of interest to the scientific farmer, it could not fail to reach a large constituency and prove of inestimable value to the cause of agriculture.

Such is the problem we have before us. Its solution will require thought and care, but confident of the strength of our claims and with every faith in the future of the REVIEW we look forward to the time when as a high-class agricultural

magazine it shall stand pre-eminent among papers of its class, a leader and moulder of agricultural thought.



Christmas! what a merry old time it is with all its joys and sorrows: home, examinations, greetings and partings, festivity and good cheer and then the harrowing thought—we must return to work again. Then, good resolutions and hard work, and before we are aware of it spring examinations, and then, to many of us the cold, outside world.

But after all how much we have to be thankful for: for national prosperity, for the awakened world-wide interest in Canada and things Canadian, for the prosperity and growth of our institution and the advancement of agriculture. What a land to live in, what a glorious heritage, what a country for the young man with ideas and faith in the future!

We are living; we are dwelling
In a grand and glorious time,
In an age on ages telling,
To be living is sublime.



This is the era of Agricultural College development. Nova Scotia, Manitoba, and Quebec are following the lead of Ontario, and schools of agriculture will soon be opened in these provinces. That these schools should work in harmony, should, in fact, form a part of a national system of agricultural education is apparent to all those who look beyond the narrow limits of provincialism.

The smaller provinces cannot hope to enter upon this work with a course equalling in breadth of training that at present given at the O. A. C., nor is

it desirable that they should. Their field is different. The demand for a full university course in agriculture must be limited; the desire for the short practical work which has its direct bearing on the problems of everyday agriculture will no doubt be strong. For this reason we believe that in the other provinces the course should be limited to two years and Guelph should become the agricultural university, should grant the degree and take up the more advanced questions of scientific agricultural work.

To do this federal aid would be required; the courses taught in the other colleges should harmonize with our own,

and the pupils from all parts of the Dominion should be admitted on an equality as far as tuition is concerned. In the United States federal aid has always been given to the Agricultural Colleges and has been a great encouragement to these institutions. Ontario has already done much for agricultural education in the Dominion. Her turn has surely come to receive national recognition, and if the recognition is equivalent to the service rendered, we shall see at Guelph the establishment of an agricultural university receiving federal aid, and known the world over for the breadth and thoroughness of its teaching.



The Macdonald Girl.

Queenly, fair and blooming lassie
Garbed in gown of sky blue hue,
Stately mien, and pose triumphant,
Embryo queen of rare menu.

Godess of the spoon and platter,
Mistress of man's ways and means;
Fairy nymph of kitchen clatter
Caterer of pork and beans.

Enemy of germs dyspeptic,
Mistress of all household arts;
Minster of domestic comforts,
Soft'ner of hardened hearts.

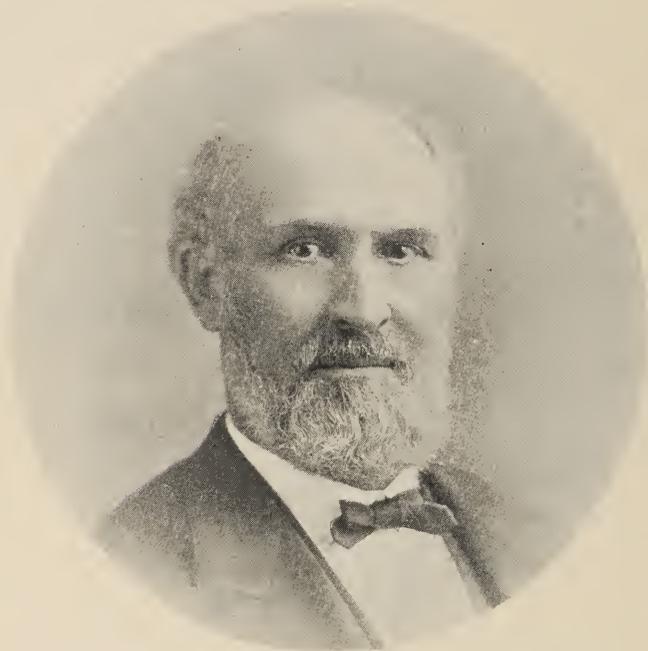
Like a sunbeam cross the campus
Trips she fair as thistle down,
Pure as sparkles on the grass blades,
In her light-blue college gown.

Men shall falter at thy footstool,
For thy hand kings deign to sue;
Peerless, bright Canadian lassie,
Queen of the Macdonald blue.

Sound your 'slogan,' clan Macdonald,
Sound it far with thrilling skirl;
Tell all people and all nations
Know the sweet Macdonald girl.

KERRY O'BYRNE.

Macdonald.



SIR WILLIAM C. MACDONALD.

MACDONALD HALL is now completed. For many months we have watched the builders at work, the walls rising, the interior taking form, order coming out of chaos, and sometimes it has seemed to our impatient eyes that it would never be done. But now, on looking back, we cannot fail to see what an immense work has been accomplished in one short year, and we realize that all things have been planned for our comfort and convenience.

This magnificent building is the gift of Sir Wm. Macdonald and has been furnished by the Government. It was designed to provide a comfortable home for the women students of the Macdonald

Institute, and is situated just beside the Institute on the north side of the campus. It thus commands an excellent view of the City of Guelph, which is within easy walking distance, or a few minutes' ride by street car. In this location it combines the privileges of the city with the advantages of country life.

The structure, which is a modification of the Elizabethan style of architecture, is build of pressed brick and terra cotta, three stories high, and affords ample accommodation for more than one hundred students.

It is equipped with the most modern appliances,—electric light, steam heating and the best sanitary arrangements. The wood work is of ash with hard oil finish



The Completed Buildings.

and the floors throughout are of hard wood.

On the ground floor are the drawing-room, library, dining-room, Superintendent's office and private apartments, post office, baggage-room, bath-rooms, and a number of sleeping rooms.

Entering by the front door, we find on the left hand the library, furnished in weathered oak, upholstered in leather, and on the floor Kelien rugs. Just opposite is the drawing-room, a corner of which appears in the cut.

Following the corridor toward the west end, we come to the large and beautiful dining hall, done in the Domestic Gothic style with an alcove at either end, the one at the west commanding a splendid view of the campus and Institute, the

other containing a large fire place. An elegant side-board of quartered oak with copper trimmings, has just been put in. The room contains sixteen tables, fourteen of which, each seating eight, are in use daily. These, decorated with potted plants, and supplied with substantial food, we find most attractive three times a day. The dishes bear the crest of the O. A. C., with words *Macdonald Hall* written above. The butter, cream and milk, thanks to another department of the O. A. C., are of the best, and our appreciation of them is fully attested by the increased avoirdupois of most of our girls.

The post office, situated just at the right of the central staircase is a most convenient institution. Here the mail

is received three times a day and each student has a box with special combination.

The floor contains, in addition to sleeping and bath rooms, the gymnasium and girls' sitting-room. The gymnasium is just above the dining-room and of about the same size. It is well equipped with clubs and bar-bells for the physical development of the Macdonald girl.

join in singing our favorite hymns. Then those, who are so disposed will "Round the ingle form a circle wide," and before a blazing wood fire will listen while one of the number reads aloud.

The girls' sitting room is furnished with tables, chairs, rockers, and pianos, and is a favorite place for reading and letter-writing. It has a very pleasant outlook as, indeed, have all the rooms.



Inside the Hall.

Here for one hour on two evenings of each week, Capt. Clark gives a systematic course of instruction in calisthenics. Thither, also, we frequently repair after the evening meal, or at the close of study hour for a half hour's fun and frolic, and once or twice a year it may be the scene of some such merry gathering as filled it on Hallow'een. On Sunday evening, too, we gather here, and after the evening prayer service, we

The bed-rooms are of two kinds, single and double. The former are slightly smaller and contain one clothes-press and single bed while the latter have two of each.

The heavy furniture is supplied by the Institution, while the pictures, nick-nacks, and thousand and one little things which go to make the room attractive and home-like are brought by the girls. One thing of great advantage to students

is the electric reading-lamp, which enables one to do a great amount of reading or study without injury to the eyes.

On the second floor is a suite of three bright sunny rooms known as the Hospital, where, when necessary, one may be taken for comparative quiet and special attention. Fortunately thus far it has not often been called into requisition.

the wall a plate-warmer, all heated by steam from the engine room.

The maids are provided with most comfortable apartments, including pleasant dining and sitting rooms.

Now for a glimpse of our real home life. At 6.45 a.m. we are roused from our slumbers by the gong which sounds again at 7.30 for breakfast, At 8.30 we gather in the Assembly Hall of Macdon-



A Corner in the Officers' Quarters.

The part of the building described is entirely independent of the culinary department and that for the accommodation of the working staff. The domestic arrangements are admirable. In the kitchen are found jacket-kettles and steamers supplied with steam from the engine room, a large hotel range with three ovens and three fire-places, a large charcoal broiler and a gas griddle range. Adjacent to this is the bakery, in connection with which there is a large bake oven. In the serving room, which lies between the kitchen and dining-room, there is a steam carving-table, a battery of urns—hot-water, coffee, and tea—with a cup-warmer underneath, and in

ald Institute for prayers, and at 8.45 go to classes, which continue until 12.05 a.m. At 12.15 we have dinner, and 1.30 resume work until 4 o'clock. This arrangement differs slightly with some classes, as some will have spare periods, and the Nature students usually go to class at 2 p.m., and often remain at laboratory or field work until 5 or even 6 o'clock. As a rule all who can will, after 4 o'clock, take a walk, perhaps a run to the city, or exercise of some kind in the open air.

At six o'clock we again assemble in the dinning-hall, and at 7.30 the gong sounds for evening study hour, which lasts till 9.30. Then the corridors are

filled with the sound of happy voices and merry laughter and in many rooms or in the gym. a jolly time is spent. But we must beware of the flight of time, for promptly at 10.30 the electric light is switched off and we may suddenly find ourselves in darkness.

On Monday and Thursday evenings the study hour commences a half hour earlier to admit of the hour from nine to ten being spent in the gymnasium.

On Friday evening there is no study hour, as that evening is set apart for the reception of our friends, and sometimes there are many callers from across the way.

The Macdonald Literary Society is a notable feature of our training here, for we contend that only a part of our education is obtained in the class-room. This society meets once a fortnight in the Assembly Hall of the Institute. Most of the girls are members and as such are expected to take part, when called upon, by preparing papers, debating, reading, or giving musical selections. In addition to this, the Nature students have a society for the purpose of discussing phases of their special work.

Of hard and fast rules we have few and therefore we have not the great longing, so often found in such institutions, to break the rules. In order to keep the tone of the school at the highest we have an excellent system of monitors. Five girls have been elected to assist the Superintendent by quietly noticing any impropriety on the part of a student and

in a kind manner speaking to her of her mistake. These monitors are girls who are so esteemed and respected by their fellow-students that a reproof from them is sure to be accepted in the right spirit.

As to those really in authority over us, who contribute so largely toward making this residence a home—our Superintendent, Mrs. Fuller, and house-keeper, Miss Kennedy—we cannot speak too highly. These we find ever ready to assist us. To them we come with our wants, and if help is in their power, we are assured of it. In the Sabbath service, the evening entertainment, the gymnastic exercise, in work and in play, Mrs.

Fuller is called upon and her musical and social ability are shown, and in the sick room she is a mother to those under her care.

Far-reaching are the results of this Institu-

tion. The Macdonald girls are healthy, and contented, and will leave this school for their homes in distant parts of the Dominion with broader minds and a stronger love for fellow Canadians.

Long may Macdonald Institute crown the College Heights, and long may Macdonald Hall open its benignant doors to the daughters of Canada.



With the return of December comes the Christmas thrill of good cheer.

Faces wear a gladsome smile
Hearts enlarge—and for awhile
All are friends.



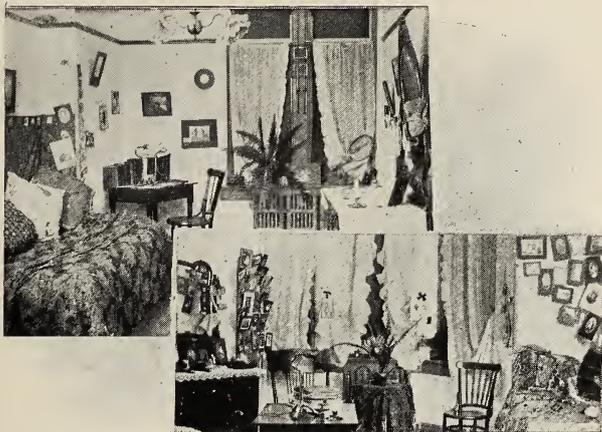
Glimpses of the Gym.

Cheer and kindness fill each breast
The sad grow weary with the rest,
All are glad.

Readers, Friends, to thee we send
Yule-tide greetings without end,
To one and all.

This number of the O. A. C. Review offers the first opportunity for the Students of Macdonald Institute to extend "Christmas Greetings." They are now heartily added to those of the older departments.

The air is already astir with the pleasure of anticipation. The holidays are coming! Is there any happiness greater than that which a student experiences in such anticipation?



Now I Lay Me Down To Sleep.

The sweetest flower that grows
Has thorns as well as rose.

Coupled with joy at this time is the sting of separation. But from our midst will go many dear ones who will carry to their distant homes loving wishes for the working out of the inspiration gained at Macdonald.

A writer has well said, "we are part of all we have met and known." From their spirits we are the gainers, so likewise they will take with them what in us has been true.

The first three months, since the opening of Macdonald Hall, have proved the value of the home life in connection with our educational institution, unity and good fellowship have germinated, grown and ripened into fruit.

The 'family spirit' that exists among us will be carried into many homes and many lives, making them glad in consequence.

To all "Our Family," to all our Friends, to our Readers—

A Merry Christmas, a Happy, Bright New Year.



A party of students from the Macdonald Institute left on Thursday, Nov. 24th, to attend the World's Fair at St. Louis. They returned on Wednesday, 30th, after having spent a most enjoyable week.

The party consisted of Misses Long, Shanklin, Pri-

chard, Moses, Ingalls, Mulherrin, Clark, and Hall from the Nature Study Department; Mr. H. B. MacLean, from the Manual Training Department; and Mr. J. A. Clark from the O. A. C.

They spent three days at St. Louis and two in Chicago. In the latter place they visited the University of Chicago, The Dewey School, Marshall, Field & Co's large store, Lincoln Park, Chicago Stock Exchange, etc. They met many Canadians during their trip, who treated them in a most courteous manner. Prominent among these was Dr. Cohoe, a graduate of Toronto University, and now Demonstrator in Anatomy at the University of Chicago, who entertained them right royally during their stay in Chicago.



The student of Home Economics is confronted with a serious problem. A grim spectre hovers ever near which will require all her powers of mind to drive away, lest it gain such a footing that its shadow may be "lifted nevermore." It is the "food analysis phantom," and it is at the festive board that it looms up horrible and gets in its ghastly work.

Its poor victim sits down and raises the glass of water to her lips—it is no longer water to her, but a combination of "colorless, transparent gases, possessing neither taste nor smell." She turns confidently to the bread plate with the thought that the enemy will be forced to flee before its staunch solidity. But no! it is not bread that she sees, but a heap of "white glistening powder" and a loathsome, sticky, glutinous mass from which she turns in disgust, still hopefully (for the Home Economics student is not easily daunted) she directs her attention to her glass of milk, and like magic, there appears before her mental vision a hopeless conglomeration of globules, particles and hideous wriggling, crawling, creeping forms. Almost in despair, she falls back upon the Irishman's ever faithful friend, but alas! the ever faithful is faithless—no mealy tuber is there; its place is usurped by the aggressive mass of white powder, with a new attendant this time in the shape of a muddy-looking liquid. Involuntarily she exclaims, "Et tu Brute!" and feels a sudden strong sympathy for King Midas.

In an attempt to shake off the baleful influence which is overpowering her, she cries frantically, "May I trouble you for the Na Cl Miss A.—? Pardon, I mean the C₁₂ H₂₂ O₁₁. Amid peals of laughter the nightmare vanishes, but sad to say, only to return at the first opportunity.

Nature and the authorities who determine Thanksgiving Day have, till late, blinded our eyes to the nearness of Christmas. With the fair, mild weather of the past Fall and the prospect of home and turkey and pumpkin pie, deferred till the middle of November, the Christmas season pies come on us unawares. The other day, however, the college grounds and the fields in the distance lay sprinkled lightly with snow, and there was an invigorating touch of frost in the air. Coming out just at that quiet time when the daylight is passing, when the evergreens are black, and the fields grayish white, and when every window far or near is bright with light, then one feels that Christmastide has come. Memories that belong to this season of the year, the visions of bright, gaily decked shops and crowds of merry shoppers, of Christmas trees and Christmas cheer, of gifts given and kindnesses done, come up suddenly, making the heart glad. The old, sweet carols, better loved as every Christmas time comes, steal into our ears and, in the clear sky, a single star brings back the Star of Bethlehem.



"Resolved that books have a greater influence than people in the development of character," was the subject of the debate at the meeting of the Macdonald Literary on Tuesday, November 8th. Miss Prichard, assisted by Miss McVanel, supported the affirmative, while Miss Moses and Miss Rath presented the negative side of the question. Both sides of the argument were so well presented as to make the decision a matter of difficulty; but Mr. Evans, speaking for the judges, gave the victory to the negative.



Book Reviews.

DOES it pay to use commercial fertilizers? This is a question which is oftener asked and probably oftener answered unsatisfactorily than any question pertaining to agriculture. The question as it stands, cannot be answered, and unless greatly modified is generally disregarded by those who have studied the relation between the plant and its food. It is now almost a *sina qua non* with the best agriculturists that the highest cultivation of a mechanical nature be practised. Even then, before a judicious use can be made of artificial manures, a great many questions confront the farmer. He must know that different crops require different mineral constituents; he must determine the character of his soil, whether it is sand, clay or loam, light, heavy, moist or dry; he must examine the subsoil and must consider the previous manuring and cropping of his land, whether his crops were fed or sold, and whether growth were made mature or immature. Then he must understand how to use a guaranteed analysis, for this affords no protection to the consumer unless he can work it out for himself. He must know what constitutes a good fertilizer, the proportions in which constituents should be mixed, whether there is a proper relation between guarantee and selling price and whether the materials used are of good quality. Up to the present we know of no work on this subject so intelligible to a practical man and so full of information of primary importance to the producer as Edward B. Voorhees'

book "Fertilizers." Sold by the Morang Publishing Co. Price \$1.00.



"Landscape Gardening as Applied to Home Decoration" by Prof. S. T. Maynard, of the Massachusetts Agricultural College, is a book which has drawn a large amount of favorable comment from the leading publications of America. As a book which gives the sort of guidance required by the untechnical horticulturist and farmer, it is hard to find anything more sensible and sound. The subject is well considered from the preparation of the land to the final care of the plant and tree. By use of no less than 168 illustrations, the author has made the work most real and interesting. The ornamentation of school grounds, parks, road sides, and hedges is clearly outlined, and means of combatting the most injurious insects discussed. We consider it a reliable book in the true sense of the term and would heartily commend it to all who are interested in beautifying home surroundings. It is published by John Wiley & Sons, New York.



"The American Horticultural Manual" in Parts I and II; the former comprising the leading principles and practises connected with the propagation, culture and improvement of fruits, nuts, ornamental trees, shrubs and plants, and the latter containing the descriptions of the leading varieties of these, also of the grapes and sub-tropical fruits of the United States and Canada, is a work by J. L. Budd,

Professor of Horticulture in the Iowa State College, and N. E. Nansen, in the South Dakota Agricultural College. The first volume contains 28 chapters, two of which are devoted to seeds and seedling growth, including the care and preparation of the seed for the plant bed as well as the protection of root, stem, and leaves during their infancy. Propagation is discussed in three chapters, and the modes, principles and different methods are dealt with in lengthy and conclusive detail. All the bush fruits are considered and wide and thorough is the character of the information presented.

The second volume is of an entirely different nature, though dealing with a division of horticulture not less important; and while the former enters into the principles of production, the latter describes the varieties produced. The different systems of classification of the apple are given in the opening pages, and how to study it in a systematic manner according to the characteristics, and by use of technical terms usually employed, make several very interesting pages. The origin, description and position on the economic scale of nearly every known variety takes up over 200 pages of the book, while as many more pages are devoted to a similar treatment of the pear, quince, cherry, plum, apricot, peach and all the bush fruits and nuts. This very valuable pair of books is published by John Wiley & Sons, New York, and sold in cloth binding at \$1.50 a copy.



The 21st edition of the American Fruit Culturist, by John J. Thomas, revised and enlarged by William H. S. Wood, and illustrated by over 800 engravings, is a work which has probably enjoyed greater popularity than any of its kind ever published. It first appeared many

years ago but, unlike most books, it has not been allowed to lose its usefulness, but has been revised and improved, both with respect to the newer varieties of fruit and the up-to-date methods of cultivation. Beside a detailed treatment of the leading principles of fruit-growing, trees, transplanting, pruning, and management of nurseries, it is to fruit growers a most convenient entomological and pathological text book. All the destructive insects are discussed and illustrated, often in all the stages of their metamorphoses, and methods of control, as based upon their manner of feeding and breeding, are carefully shown. Every common fungus growth that interferes with the health of the trees, leaf or fruit is described, and the use of spraying and cutting outlined with apparatus, materials and formulae. Many chapters are devoted to the study of the different kinds of fruits and nuts; in all, the book contains over 800 pages. Published by William Wood & Co., New York.



Systematic Pomology is a short and concise work treating of the description, nomenclature and classification of fruits. No less than nine chapters are given to descriptions. It is very important to the prospective fruit expert to get into the habit of preparing free and accurate descriptions, and in this little work the steps to success are very clearly placed. Classification is a very prominent feature of the work and in dealing with the principles of it, the apple, pear, peach, plum, cherry, and a number of miscellaneous fruits are classified in order. It is a book for both teacher and student, and well worth the perusal of all who hope to be qualified in the art of fruit-judging. We consider it a very cleverly written work, having its matter neatly and intelligibly arranged. Published by Orange Judd Co., New York. Price \$1.00.

College Life.

ONE of the busiest months at the College, and this one exceptionally so, for in the words of the Hon. John Dryden, history has been a-making. The Experimental Union, the Winter Fair, the formal opening of the Macdonald Institute and the Consolidated School, introducing new and modern ideas in education, are events important not only to us, but to the people of Canada.

tural College at Truro, Nova Scotia. Professor Cumming has been with us some four years as Professor Day's assistant in the Agricultural Department. His interest and practical knowledge of the subjects he taught, his interest in the boys and his efforts on their behalf, emphasize his loss to us, and render his place hard to fill. We wish to congratulate President Cumming on his appointment to this important position, and we



In the Good Old Summer Time. A Nature-Study Outing up the Speed.

A recital of these events may not interest those of our readers who were here, but to ex-students and others who were not so privileged, a few words will suffice to show that the old place is still alive, and things are "doing yet." To take events in chronological order, first might be mentioned the appointment of one of our staff, Professor M. Cumming, to the Presidency of the Maritime Agricul-

predict a large measure of success in his new sphere of usefulness.

Next event, one of the November meetings of the Literary Society took the form of a Mock Parliament, conducted with due decency, ceremony, and decorum. The Governor-General of Canada, G. C. Creelman, B.S.A., M.S., read the speech from the Throne, a masterpiece of legislation for the stability

of our Dominion. At the first sitting of the House of Commons, presided over by the Speaker Wilhelm Hohenzollern Day, two measures were brought forward by the Government, viz. :

(1.) To grant unto all women in Canada, including the Island of Manitoulin, who have reached the free and unfettered age of 31 years, the right to exercise the franchise in all Federal Elections.

(2.) To pass a resolution praying the Imperial Government to grant this Dominion of Canada its full and complete Independence.

Other measures of importance, such as—"To reduce the salaries now paid the staff of the O. A. C. to the extent of \$16,000, and that said sum be divided equally for the purpose of painting the piggeries; providing accident insurance for members of the first year, who fail in their final examinations, and to provide adequate protection for Canadian Industries," were unfortunately not reached before the House was prorogued. The Premier, Rt. Hon. Sir Robt. Jonnie Deachman, D. D., assisted by such orators and statesmen as Sir Henry Bouyer McLean, C. A., Hon. Ever Done-to-Death Eddy, B. S. A., Minister of Railways, Torpedo Boats and Trawlers, Hon. Hardly Righteous MacMillan, T. T. D., and Sir Archibald Leitch, succeeded in obtaining for this fair Dominion and especially for our friends from the Macdonald Institute, who adorned the Ladies' Gallery, the right to cast the ballot. But when it came to the question of the Independence of Canada, the Government was not strong enough to withstand the loyalty and the logic of Rt. Hon. Sir Frederick Milepost Logan, P. D. Q., the leader of the opposition, and his followers, Sir Robert

Buller Wade, D. S. O., V. C., Hon. Herbert Hardly Homely LeDrew, Hon. Hannibal Grant Kouropatkin Rugby McFayden, and others. The Government

was defeated. The Governor-General then called upon the Rt. Hon. Sir F. Milepost Logan, P. D. Q., leader of the opposition, to form a new Cabinet and prorogued the House. The features of the evening were perhaps, the speeches of Premier Deachman and opposition leader Logan. The House will likely be called together after the holidays.



Studies in Nature.

If our ex-students could come back and visit one of our Union Literary meetings, they would certainly have cause to envy us in that our lives have fallen in pleasant places. The part of the program taken by the Macdonald girls is always unique and high class, and always looked forward to by the boys with the keenest of interest. The first part of the program consisted of a solo by Mr. R. W. Mills, a reading by Mr. F. M. Logan, and the debate on "Resolved that the prospects of the United States are better than those of Canada." For the Delphic Society, J. F. Munroe and H. B. Smith spoke on the affirmative of the question and F. C. Nunnick and D. M. Rose upheld the negative for the Maple Leaf Society. The most telling speeches were perhaps Mr. H. B. Smith's and Mr. F. C. Nunnick's.

The affirmative of the resolution was sustained. At the close of the debate Professor Harcourt presented Kerr of the first year with the Athletic Field Day championship medal, and Professor Doherty presented the same student, winner of the cross-country run, with the Dryden-Doherty Cup. Then came the Ladies' part of the program, in which they excelled themselves. The

- 7. The First Quarrel.....Gibson
- 8. A Question of Quality.....
"You will get over it. It was only your puppy love."
"Oh, but he was such a nice puppy."
- 9. Priscilla and John Alden.....
- 10. Our Great Grandmothers' Tea Party.....
- 11. Her First Pic.....Gibson
- 12. The Rival Beauties.....Gibson
- 13. Extract from the Will.....
"And I further direct that in the event of the re-marriage of my said wife Sophia,



The Big 4, or Twenty-four Feet of Men.

LEDREW,
Pres. Y. M. C. A.

McKILICAN,
Pres. Athletic Ass'n.

DEACHMAN,
Managing Editor, Review.

LENNOX,
Pres. Literary Society.

stage was richly and tastefully furnished with curtains (kindly lent by G. B. Ryan of Guelph), special electric lights were put in around the stage, and a series of tableaux and Gibson pictures was presented that would do credit to the artists. Some of the costuming was superb and showed a wonderful fund of ideas. It is difficult to mention any one scene, when every time the curtain rose displayed a picture of unexcelled beauty.

- 1. The Night before her Wedding.....Gibson
"For she's a jolly good fellow."
- 2. A Little Story, by a Sleeve.....Gibson
- 3. "His Fortune".....Gibson
"You have a long journey to go."
- 4. When Doctors Disagree.....Gibson
- 5. Wireless Telegraphy.....Gibson
- 6. Gipsy Scenes.....

all her share and interest in the aforesaid capital sum of £500,000 shall immediately cease and determine."

PORTRAITS,

- A Southern Rose.....
- An Old Fashioned Picture.....
- Dresden China.....
- Mary Queen of Scots.....

MINIATURES.

- Sweetheart.....
- Queen Louise.....Richter
- Cherry Ripe.....
- St. Julia.....Boddenhausen
- Poudre.....
- The Soul's Awakening.....Sant

On the evening of Nov. 25th, the students and friends enjoyed a treat in the form of a recital given by the members of the O. A. C. Philharmonic Society. Convocation Hall was filled

with an appreciative audience. President Creelman, in a few felicitous remarks introduced the program.

PROGRAM.

PART I.

- Orchestra— { Under the Anheuser Busch. }
 { Meet Me at St. Louis. }
 Quartette—If the Waters could speak as they
 Flow
 Messrs. Buchanan, Stoodley, Mills and Munro.
 Piano Solo—Selected.....
 Miss Bell.
 Vocal Solo—The WandererShubert.
 E. G. de Coriolis.
 Violin Duet—Traum der SennerinLabitzby.
 Miss Holland and Mr. Weir.

PART II.

- Orchestra— { I've Got a Feeling for you. }
 { Teasing. }
 Vocal Solo—Selected
 E. G. de Coriolis.
 Violin Duet—Petit Duo Symphonique..Berthold
 Tours. Miss Holland and Mr. Weir.
 Quartette—Selected.....
 Messrs. Buchanan, Stoodley, Mills and Munro.

To endeavor to convey a right impression of this entertainment would be, in me, an injustice. Suffice it to say, every number was thoroughly enjoyed, and we shall certainly be present when the next recital takes place.

One pleasant feature of such meetings as these, is that they are no longer all "boys." The gentler element has been introduced, adding something of culture and refinement which was lacking before. Not only the character, but the general deportment of the students cannot but be improved in every way by the new condition of affairs.

The Live Stock exhibition at Chicago has a national reputation as the best show of its kind on the continent. About twenty-five of our boys took advantage of the rates and visited this exhibition, leaving about Nov. 24th. Of course the part which interests us as a college is the judging competition. Thirty-four men entered these competitions, all with one

exception Agricultural College Students. Our team of five men consisted of Wade, Lennox, Leitch, Mayberry and McKilligan. The results have not yet reached us, but we doubt not the boys have done themselves credit. They speak highly of the services of Professor Cumming, who accompanied them, and did everything possible to make the trip profitable and enjoyable. While in Chicago the Swift Packing House was visited, and a lot of valuable information gleaned. A few days were spent at the World's Fair, St. Louis, and the boys arrived home in a fairly tired and sleepy condition, but we hope with a little more education. It fell to the happy lot of a couple of our fortunates, to pilot through Chicago and St. Louis, eight or ten of our fair cousins over the way; we are pleased to hear the pleasant task was creditably performed.

AGRICULTURAL AND EXPERIMENTAL UNION.

Two days of special interest to ex-students were Dec. 5 and 6. The coming together of many of the Old Boys, the practical work, the masterful addresses and the exchanging of experiences of these foremost agricultural thinkers, have perhaps done as much as any one thing to advance farming in Ontario. The meetings this year, both in attendance and interest were quite up to the average. A report of the work done will appear in our January number.

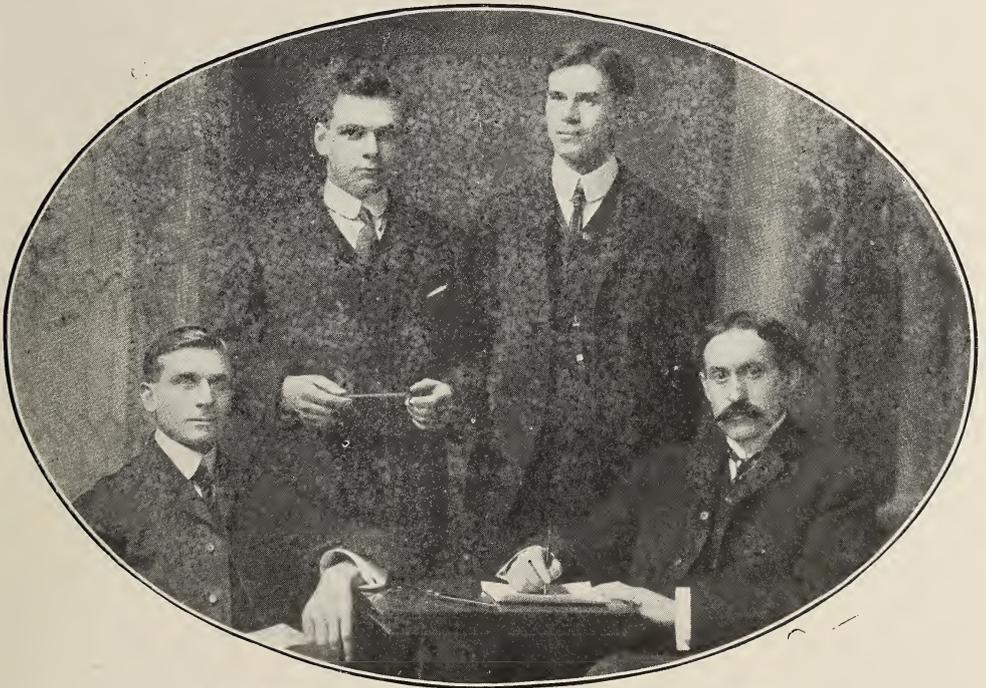
The first public meeting was held in the Gymnasium, which was packed to the doors. Hon. John Dryden, Minister of Agriculture, occupied the chair. The speakers were—President Creelman, Mrs. Bertha D. Laws, Appleton, Minn., and Jos. E. Wing, Mechanicsburg, Ohio. President Creelman dwelt on the growth and magnitude of the work here, and pointed

out the modest requirements of the institution, and the needs that could be met by the Government.

Mrs. Laws, one of our Southern friends, spoke on "The Girl and the Home." The subject was one of interest to every one present, and was presented in a clear, forcible, and pleasing style. Mr. Wing, an authority and writer on agriculture, told us, in a pleasant manner, of how he had helped his father to make the old farm pay—to raise the capacity from the support of a few score lambs to the support of twelve hundred.

At the close of the sessions, on Tuesday afternoon, an interesting ceremony took place, when two fine portraits were presented to the College,—one of the late Professor Panton, by the ex-students, and another of ex-President Dr. Mills, by the members of the O. A. C.

graduating class of '04. Both portraits are excellent likenesses and are the work of two of the best portrait painters in the Dominion. The names of these two men, Dr. Mills and Professor Panton, will always be connected with their work here, and the presentation of these portraits is a fitting tribute to their worth. E. C. Drury, President of the Union, conducted the proceedings, and first introduced Mr. Walter J. Brown, B. S. A., L. L. B. Mr. Brown, in presenting the portrait paid a most eloquent and finely expressed tribute to the late Professor Panton. Mr. C. C. James, Deputy Minister of Agriculture, spoke on behalf of the officers, and Dr. Mills, who was closely associated with Professor Panton, also spoke highly of him, characterizing him as the highest type of Christian citizen with whom he had ever associated.



A Ministerial Congress, or the Serious Portion of our Staff.

J. A. HAND,

C. W. ESMOND,

E. D. EDDY,

F. M. LOGAN.

The portrait of Dr. Mills was unveiled by Dr. Robertson.

Dr. Robertson spoke of the work Dr. Mills had done in raising the status of the college and bringing it from obscurity to the position it holds to-day; of his untiring energy and his mastery of detail. He knew of no man who had touched the whole range of Ontario life with his wisdom, sagacity and work, as had Dr. Mills. Mr. H. L. Fulmer, B.S.A., on behalf of his year, presented this class memorial to the college.

The final Union meeting in the form of a banquet, was perhaps the most enjoyable of the series, at least to the present students. The gymnasium, specially decorated for the occasion, was seated for about 430 guests. After a pleasant argument with a sumptuous repast, the company drank the following toasts:

The King—Proposed by President Creelman. "God Save the King."

The Government—By President Creelman. Response, by Hon. John Dryden.

Ex-Officers O. A. College—By E. C. Drury and Nelson Monteith. Response, by Dr. Mills.

Officers O. A. College—By T. G. Raynor, Rosehall. Response, by Prof. Dean and Prof. Cumming.

Visitors—By G. A. Putnam. Response, by Mr. John Ross, of Rosshire, Scotland, and Mrs. Laws.

Ex-Students—By Prof. Robertson. Response, by M. W. Doherty.

Students—By C. C. James. Response, for Macdonald Institute—Miss Prichard.

Fourth Year—F. M. Logan. Third Year—H. A. Craig. Second Year—M. C. Cutting. First Year—B.R. Nag-Tany.

Ladies—By Roland Craig. Response, by Miss Laura Rose.

Press—By the President. Response, by R. J. Deachman, O. A. C. Review.

In proposing the toast to the ex-officers, Messrs. Drury and Monteith called Dr. Mills to the platform and presented him, on behalf of the ex-students, with an address and a handsome oak cabinet of silver. Dr. Mills, to whom this addi-



Questions of Art, Athletics, and Business.

J. B. FAIRBAIRN, J. W. KENNEDY,
D. H. JONES, R. E. MORTIMER.

tional mark of appreciation, was unexpected, made a happy response, touching upon his pleasant relations with the students and urging them to greater endeavor.

Dr. Robertson's was perhaps, the speech of the evening. Not the least important and enjoyable, however, were the speeches of the students in response to their toast. Though the Donaldas were not present, they were eloquently represented by Miss Prichard. Our erstwhile Nova Scotia politician, the leader of the opposition, Mr. F. M.

Logan, upheld the honor of the fourth year in a speech that was redolent with words and grandiloquent verbosity; the third year champion, Mr. H. A. Craig, presented in a clear, forcible and powerful manner, conclusive reasons why the '06 boys were the most important class whose toast had been drunk; Mr. M. C. Cutting, like our friend Logan, an orator and a Bluenose, ably presented the achievements and prowess of the Sophomores; and our Japanese fellow-student, Mr. Nag-Tany, spoke on behalf of his Freshmen class mates.

Wednesday, Thursday and Friday, the students were in attendance at the Winter Fair. We are certainly fortunate in having the Fair located in Guelph, affording as it does opportunities for hearing practical men on intensely practical subjects, of seeing some of the best animals in Canada, and of studying animal form and types, and of visiting a Poultry Show that has not its equal on the continent. A large number of the students entered in the stock judging contest conducted by the fair managers. Four classes of stock were judged, and placed with reasons by the contestants. The prizes, amounting to over \$200, were distributed among the successful competitors in amounts from \$10 to \$1.00 in each class. All the winners in this competition with two exceptions were College students.

THE WINNERS.

Judging beef cattle—H. B. Smith, J. Baker, C. Gardiner, J. M. McCallum, G. D. McVicar, R. E. Mortimer, T. C. Morgan, J. C. Harkness, H. A. Craig, A. Young.

Dairy cattle—G. H. Carpenter, K. G. McKay, A. Mason, C. W. Esmond, H. B. Smith, J. A. Clark, E. H. Porter, G. E. Sanders, F. C. Nunnick, M. C. Brownlee.

Sheep-judging competition—A. L. McCredie, J. A. Telfer, E. D. Eddy, R. E. Mortimer, A. Bray, C. W. Esmond, M. A. Jull, G. G. Whyte, G. C. Montgomery, F. M. Logan.

Swine-judging competition—F. H. Dennis, F. M. Logan, J. Baker, G. H. Sanders, H. Jones, O. H. Bell, A. Craig, G. D. McVicar, R. Elliott, R. S. Hosmer.

The residence is now in charge of another matron, Miss Hardy, who has changed places with Miss Nelles. Miss Hardy has been with us a little more than a month, and is proving a helpful and efficient matron, and her arduous duties during the meetings of Union, at the Union Banquet, and in the residence, were appreciated.



Followers of the Clan
Macdonald.

F. C. HART,
C. R. KLINCK,
H. R. MACMILLAN,
MISS ROSS.

Another event of the month is of a somewhat personal nature, the Christmas O. A. C. Review. The four organizations within the College are the Y. M. C. A., the Athletic Association, the Literary Society, and our own modest selves, the Review. A peep at the faces of those who are at the head of these organizations might not be without interest to some. Our first photo represents the Big Four,—the manly LeDrew, the athletic McKillican, the intellectual Deachman and the scholarly Lennox.

The issuing of a college paper like the REVIEW involves an amount and a variety of work hardly realized by the average reader. The proverbial trials of the editor in obtaining suitable "copy" and appropriate cuts, and (in our own instance) of supervising the mechanical construction of the paper, the choosing of a cover, the style of material used, of revising articles, proof-reading in abundance and innumerable details are a few of the items which fill the heads of the Editor and his assistant. Then each department must have an efficient head, that is, heads with *heads*. The next illustration gives four of these heads in weighty conference—Hand and Logan sitting down, full, doubtless of apples and personal allusions; and behind them two good agricultural articles, C. W. Esmond, and E. D. Eddy. It just happened that our artists Dan H. Jones and

R. E. Mortimer were working on an illustrated joke, when one of the business managers, J. B. Fairbairn and the athletic reporter J. W. Kennedy came in, and Dan in his hearty manner shared the joke. This little scene is the subject of the next photo. The last illustration represents a tower of strength on the staff—Miss Ross, the talented chronicler of Donalds doings, the Editor, H. R. MacMillan, the joker, C. R. Klinck, and the college reporter, F. C. Hart.

To our readers whom we have never seen, we look out to you from these pages, and promise our best endeavors to make our College paper one of value and interest. We send you our Christmas cheer and all good wishes for happiness and prosperity.

Last event, and saddest of all, the Examinations. Gentle reader, pray for us.



Our Old Boys.



Knots.



THREE of the best men of class '03 have had the courage to cut their moorings, weigh anchor and embark on that (sometimes tempestuous) sea of matrimony. T. D. Elderkin, to whom reference was made in a previous issue, was the first to engage a "mate." With the aid of that old compass so essential to successful matrimonial navigation, Elkerkin was able to report a very harmonious and delightful voyage. This seemed to inspire his classmates, and on July 20th, L. S. Klink, led to the masthead, Miss Mary A. McDougall, Guelph, Ont. This proves that Leonard's numerous

short sails to the city, were not for pleasure "alone."

After winning that other prize (the B. S. A. degree) Klink took post graduate work at Ames, Iowa, where he now holds the position of Assistant Agronomist. As President of the Y. M. C. A. and Business Manager of the "Review," Mr. Klink perhaps, gave to his Alma Mater as much as he received, a feat which few

students accomplish, and we sincerely hope that his future may be as successful as he deserves, and that no breakers will ever bring disaster to the barque of Mr. and Mrs. L. S. Klink.

Another man who has surprised his classmates, if not himself, is W. J. Rutherford. Knowing W. J.'s serious, thoughtful, and philosophical nature, no one would ever suspect him of losing his head or heart over anything so foamy and spray-like as matrimony. However, on Dec. 7th, he signed articles to share his cabin with Miss Anna C. Bow, Winchester, Ont. The boys who were at the O. A. C. during Mr. Rutherford's time will remember him as a man of many excellent qualities, an ideal Resident Master, a good teacher, a clear speaker, and a gentleman. On graduating from this College, he accepted the position of Assistant Prof. of Animal Husbandry at Ames College, Iowa, where he is doing excellent work. May gentle zepthers spread for Mr. and Mrs. Rutherford, white wings of success, and may rough waters never land their yacht on the reef of adversity or the shoals of divorce.

John J. Groves, who took associate degree work with the class of '05, has shown that he has faith in Canada's



Home of Mr. T. L. Dunkin.

future. His weakness for the fair sex has proved one of his strong features.

On Oct. 19th he stood on the bridge, and invited to walk the deck with him, in sunshine or in rain, in storm or calm, Miss Laura E. Scott, daughter of Mr. Robert Scott, Packenham, Ont.

His thoughts of late have not been confined strictly to agriculture, but in spite of this impediment, we learn that he is doing good work on his farm at Antrim, near Ottawa. The Review extends congratulations and best wishes for a happy, successful, life-long voyage.

As "Mr. Dooley" has said, "it is not good for man to be alone," and with this noble sentiment W. E. Mason, who took

associate degree work with the class of '05, heartily agrees.

In the yellow month of Sept., "when the frost is on the pumpkin, and the corn is in the shock," our old friend Mason, secured the necessary rigging, battened down the hatch, took on board as first mate, Miss Tisdale, Carlonie, Ont., and set sail across the *deep blue* sea of married *life*.

May mutiny never board the craft, and may harmony ever prevail between the captain and his crew. Should storms arise, may they be followed by calms, should troubles come, may they be little ones.



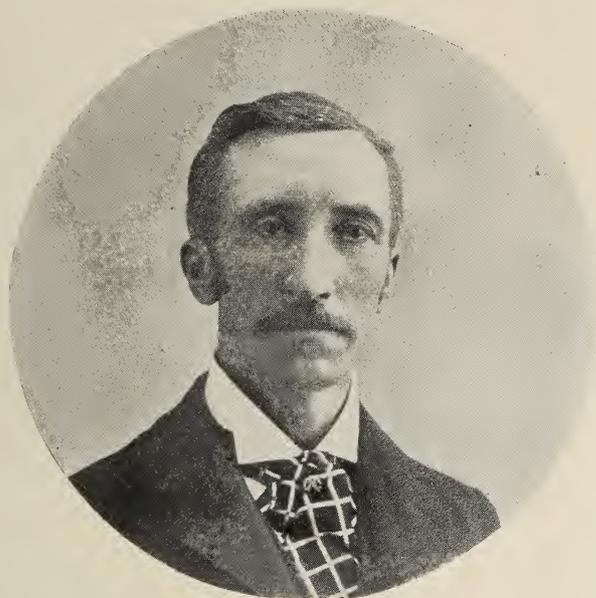
We are pleased to be able to present

in this issue a photograph of the home of one of the oldest ex-students, Mr. T. L. Dunkin, Norwich, Ont. He writes us that he came to Guelph in 1877, when 20 years of age. The institution was at that time called the Ontario School of Agriculture, and Prof. Johnson was the Principal.

Another feature worthy of note when speaking of Mr. Dunkin, is that he, along with Mr. W. W. Ballantyne, '79, Stratford, are the first ex-students to

much because of what he learned, but because of the more intelligent interest he has been able to take in his life work.

We present herewith a picture of Mr. John Donaldson, Port Williams, Ont. After securing a B.A. degree at Acadia University, Wolfville, N.S., Mr. Donaldson came to the O.A.C. to study agriculture. On securing his Associate Diploma he returned to the farm and has since made a specialty of fruit growing and dairying. He has about 50 acres of orchard and by careful selection and packing, has been able to work up a large mail order business, and thus dispose of a large part of his fruit. Mr. Donaldson has always taken a keen interest in Agricultural matters, having served four years as Director of the Nova Scotia Farmers' Association and as its president for 1902.



JOHN DONALDSON.

send sons to the college. Ballantyne and Dunkin of the first year, are worthy sons of worthy sires. Mr. Dunkin states that he has never spent a Xmas day away from the home in which he was born; something which few men can say. He says that he has been making a specialty of dairying and hog raising; his father being one of the pioneer dairymen of the Province.

Mr. Dunkin touches an important key when he states that he has never regretted his experience at the college, not so

All students who were here last year will remember Knight and Ransom from New York State. On returning home they secured a large farm and are making a specialty of early potatoes, as they say in their advertisement "Pure Seed and Fancy Table." They have recently purchased a flock of Dorset Horned sheep from Lieut.-Col. John McGillivray, of Uxbridge, Ont. They evidently intend to make their live stock department strong. We saw them at the great International Exposition in Chicago recently, and they both looked prosperous. Certainly they should, for from the photo of their room which we reproduce in another column, it will be seen that they enjoyed the full measure of happiness while at the O. A. C.

Ten Years Ago.

BY ONE OF THE CLASS.

In October, 1894, the O. A. C. opened its doors to a freshman class of seventy young men. Of this number a large proportion completed the first year, the records showing that thirty-one successfully passed the June examinations. With a few additions from previous classes, the second year counted about thirty-five, nearly all of whom obtained diplomas. The third year class was smaller, only six coming up for the B. S. A. degree. If one were asked to give some distinctive character which marked this class from those before or after, it might be difficult to so mark it off. Yet, like other classes, it had a certain conceit of itself as containing men who were not unworthy of the institution they were attending. One thing may be noted and that is the class was largely a "home brewed" one, with the exception of a few "foreigners," who like Dundonald had the misfortune to be born in another portion of the Empire. Perhaps sixty out of the seventy were from Ontario's farms though no accurate figures are available on this point. The members separated seven, eight or nine years ago, and are scattered even more widely than was the case before entering college. Could they all be gathered again there would be many puzzling looks exchanged in an endeavor to fix the identity of former chums. Indeed the story is told that two members of the class who were room-mates in their first year, met not long ago in a Western town. One was on important business for he was to be married the next day and was enquiring the way to a minister's house. The first man he interrogated was a presumable stranger and it was not until a few minutes conversation showed

where their ways had crossed before, that the old friend was recognized. So it would be with many another pair who worked together on "shop," or helped Martin O'Donnel to mix cement. The old days can be recalled only in memory. Nor is it desirable that we should live too much in the past. Yet, for sake of auld lang syne, the following notes have been collated of the present circumstances of the boys :

I. I. Devitt, who will be remembered as the hard working little German from Waterloo County, is now farming in company with his brother near Freeman. His fancy runs to Shire horses, of which he has quite a number. The Experimental Union usually finds him in attendance and at times a participant in the discussions.

P. W. Hodgetts was from St. Catharines. He has permitted his early love for city life to attract him to Toronto, where he occupies a Government position. As secretary of the Ontario Fruit Growers' Association, he has much to do with the promotion of the fruit interests of the province. Needless to say, he is married.

G. O. Higginson, the gold medalist of the class in 1896, writes to say that he has a joint interest in a lime business with his cousin and does an extensive trade at Stepney near his home. He still takes a hand at farming and finds that the two enterprises work well together. The industry, for which he was noted at the O. A. C., has not deserted him for he is also treasurer and shareholder in the Hawkesbury Dairy Co.

H. D. Kewley writes that since his return home in 1896 he has co-operated in the purchase of farms for his brothers with the result that they now have about

500 acres all paid for. He is himself managing the old homestead of 200 acres. Mixed farming is practiced, specialized to some extent in the breeding of heavy draught horses. He is unmarried and hints that his ambition may yet lead him to complete his agricultural education.

J. T. Guy is still living at his old home near Columbus, and latest reports indicate that he is putting into practice the methods learned at the O. A. C.

W. P. Gamble, having remained attached to the O. A. C., has been more in the public eye than others of the class. He has grown with the institution and is much devoted to his chosen work of chemical investigation. His analysis of foodstuffs is a valuable contribution to science and to practical agriculture.

J. R. Oastler, has for the past two years, been manager of the live stock department at the Northwest Experimental Farm, Crookston, Minnesota. Last winter he distinguished himself by winning a prize of \$100, given by the International Stock Food Co., for an article on swine raising. He is hopeful of the possibilities of the Red River Valley for stock raising, and is well satisfied with his surroundings.

A. F. Wilson, after interesting himself in Farmers' Institute work in Lanark County, went to Manitoba in 1903. So well pleased was he with the West that he decided to make it his home. At present he is attending the Veterinary College in Toronto.

Alex. Kennedy has his letter paper headed Dryden, Ont., and across the top there reads "Office of License Inspector for Rainy River District East." He is, like Hodgetts, a government official, though also a farmer. Seven years ago, he says, something told him to go West and he went and hewed for himself a

home in the forests of New Ontario. Later he took unto himself one of old Ontario's fair daughters to share his fortune.

A. S. Leavitt, of Vankleek, Hill is on the home farm with good prospects. He has not yet ventured on the sea of matrimony.

T. C. Bell may be found by addressing him at Cataract. In fact he tells of being so comfortably situated that he is likely to remain at that address. With some 340 acres, 150 of which is pasture, he makes a specialty of finishing cattle for the export trade. He aims to have all the comforts of a city home, having completed a water supply system for his dwelling.

J. E. B. Leishmann is an engineer on the C. P. R., running east and west from Rat Portage, where his home is. He completed his apprenticeship in three years and is doing remarkably well.

H. W. Buck, of Amherstburg, is in partnership with his brother in a store. He was married last September.

A. W. McIntyre is farming near Newington. "No reason to complain," is his report.

Belfort Reinke has a large farm near Westover, in Wentworth County. With 150 acres of timber he has a big winter's work ahead of him. Too busy, he says, to attend the Winter Fair. Was married two years ago.

G. E. Gooch holds a good position in Toronto, as agent of the North British and Mercantile Insurance Co.

T. E. F. Gibson is the owner of a farm near Port Sydney, Muskoka.

J. Nasmith did not follow agriculture after graduation, but is engaged in a line of business closely connected with farming. As manager of the bread depart-

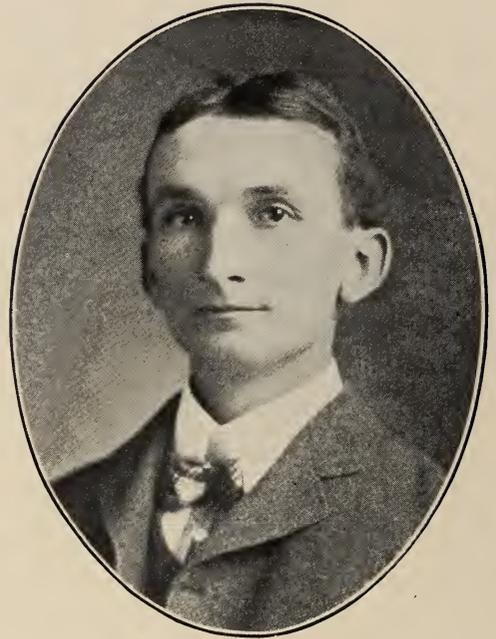
ment of the Nasmith Baking Co., Toronto, he has become an expert in the handling of flour. He took a special course at Chicago in bread-making.

Addison McKenzie is farming at Thornton. Has been married nearly five years, and boasts of two fine boys.

D. W. Roblin follows mixed farming in the Township of Adolphustown, near his old home.

R. J. Cousins is located one mile from Enterprise working his fathers estate of 300 acres. He keeps a large stock of cattle, horses and hogs.

R. E. L. Harkness is taking his share of the work on his father's farm. Dairying is the specialty followed, the milk from 34 cows being made into butter with the aid of the latest modern appliances—separator, Simplex churn and a refrigerator. He is also into fruit, and this year packed 1000 barrels of Fameuse and MacIntosh apples. Over



H. D. KEWLEY.

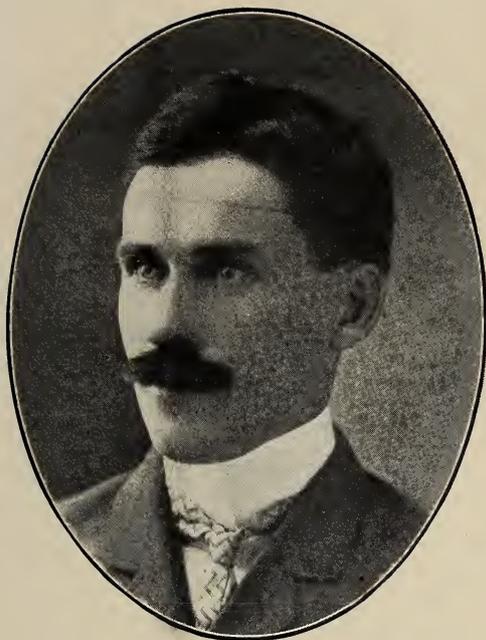
eighty colonies of Italian bees are kept on the farm.

W. M. Shields, after leaving college, worked with practical farmers for two years to gain experience. In March '97, he was married and a month later settled in Rama Township, where he still resides. Last spring he was appointed township clerk, in which position he finds his college training to be of service. He is giving considerable attention to Shropshire sheep.

J. A. Pollard has moved south to Virginia, being located three miles from the city of Richmond. An interesting letter from him tells how farming there differs from Canadian practice. Corn is the staple crop, and where the land is not too poor, winter wheat is grown. The climate is too warm for oats or barley. Joe is making a specialty of horses and has done something in exhibiting. On one animal he secured a red ribbon from a class of eleven.



ALEX. KENNEDY.



J. R. OASTLER.

G. S. Henry, B. A., did not join the class until 1896. After graduating from Toronto University, he spent a year at the O. A. C. to get a knowledge of farming. Since '97 he has been living on his farm in York Township and has, in the course of time, been married and elected a member of the township council.

Jas. Leggatt, whose home was at Mitchell, has gone west like many others and is now at Plumas, Manitoba, engaged in butchering.

A. W. MacDonald sticks to his place of birth and may be found on his farm, near Oakville, as ready as ever to talk politics. He makes a specialty of fitting steers for market, and occasionally goes across to Glasgow with a few carloads.

T. H. Robertson (Tiny) is in the lumber business in the Assiniboia district.

J. J. Yuill has travelled to the far West and is the proprietor of a drug store in Tacoma, Washington.

C. H. Rogers, of Grafton, is, perhaps, the only member of the class with a war record. He obtained a commission in

one of the later contingents that went to South Africa, and, after a few month's service, returned to his farm, where he makes a specialty of apple growing.

W. D. Steele occupies a responsible position with the well known firm of Steele, Briggs, seed merchants, Toronto.

J. C. MacDonald did not go back to the farm, but is still deeply interested in agriculture. For the past five years he has been agricultural editor of the Weekly Mail and Empire, Toronto.

R. L. Stoddart is farming somewhere in Manitoba, though his exact location cannot be learned at present.

To many members of the class it will be a painful surprise to learn of the death of E. S. Charlton, at St. George, on June 20th, 1904. He was living on the home farm and was engaged to be married. An attack of inflammation, with a few relapses, brought the sad ending. His memory is dear to those who knew him as a true friend and a faithful student. While at the O. A. C. he was closely identified with the work of the Y.M.C.A.



G. S. HENRY, B.A.

Athletics.

THE O. A. C. football team certainly surprised themselves on Friday, Nov. 14th, when they defeated Junior S. P. S. by a score of 34-1. This is the third time that the O. A. C. has entered the Mulock Cup series. In two previous occasions they were defeated by St. Michaels, but this year St. Michaels defaulted, and the first game played by the O. A. C. was in the semi-finals with the above result. The result of this game proves that we have ample material at our college to make a first-class football team, and there is no doubt that with a little more opportunity for practice and some scientific training, the O. A. C. would make it extremely interesting for any junior team in the province.

The game in Toronto on the 14th ult. was simply a walk over for the "farmers" as the Toronto people are pleased to style the O. A. C. team. They had the weight and the speed and knew how to use both to good advantage. The S. P. S. who won against the Medicals on the 12th had a good team on the ground, but they seemed to be completely rattled by the speed and combination of the O. A. C. team, and played for the most part a defensive game.

During the first half the O. A. C. played with the wind. Considering this advantage, they certainly did not have things all their own way for the score at half time stood only 11-0 in their favor. It was however in the second half while playing against the wind that they showed their superiority. Time and

again they kicked the line, gaining ten, fifteen or twenty yards at a run. Their running and dodging was brilliant, their catching and passing was sure and swift, indeed toward the end of the game the S. P. S. seemed to be completely dumbfounded by the tactics of their opponents and so lost heart, that within the last few minutes the score was piled up very rapidly. Every man of the team played well and contributed his share to the victory.

The teams were :

O. A. C.		S. P. S.
Lawson,	<i>Back</i>	Hague,
Bracken,		Thoms.
Baker,	<i>Halves</i>	Patton,
McFayden,		McGiverin,
Scott,	<i>Quarter</i>	Cory,
Mortimer,	<i>Centre</i>	Hall,
McCredie,	<i>Guards</i>	Chesnut,
McLaughlin,		Dissette,
Montgomery,		Bryce,
Warner,	<i>Wings</i>	Spence,
Fairbairn,		O'Grady,
Jacobs,		Beardmore.

Referee—F. D. Woodworth.

Umpire—W. A. Hewitt.

SENIOR S. P. S. WINS MULOCK CUP.

The final game for the Mulock Cup was played on 'Varsity athletic grounds on Wednesday, November 23rd, between teams from the O. A. C. and Senior S. P. S. The O. A. C. boys were certainly elated over their recent victory over the Junior S. P. S., yet they keenly felt the loss of one of their best players, "Bob" Baker, who was injured

in that game, Several changes had to be made on the team at the last moment and various other causes tended to weaken the courage of the O. A. C. team. Moreover, their play was not as brilliant as usual, their catching and passing was not sure and several muffs on their part gave their opponents an opportunity to roll up a score which otherwise would have been smaller, an opportunity which the senior S. P. S. were not slow to take advantage of, for their forwards were always in the right place and played a fast game, following up well and holding their wings and giving their halves fine protection. The feature of the game was the long passing of the S. P. S. team, they were well practiced in this art and passed and caught with a certainty that their opponents could not hope to equal, The S. P. S. showed what they were capable of, and as soon as the ball was put into play they lost no time in getting to work and at half time the score stood 12-1 in their favor. When play was resumed, the O. A. C. team pulled themselves together and made it interesting for their opponents in the first part of the last half. At this stage of the game, Bracken did some good work, securing a touch-in-goal and a try making the score 12-7.

Another try was secured by the O. A. C., making their score 12 points, but that ended their scoring, and during the rest of the game the Senior S. P. S. had things their own way, the final score being 31-12.

The teams were :

O. A. C.		S. P. S.
Lawson,	<i>Back</i>	Boeckh,
McLaughlin,		McInnis,
Bracken,	<i>Halves</i>	Rutherford,
McFayden,		McKenzie,
Scott,	<i>Quarter</i>	Montague,

Munroe,	<i>Centre</i>	Burwash,
McCredie,		Raynor,
Mortimer,		Christie,
Jacobs,	<i>Wings</i>	Charlebois,
McKillican,		Hewson,
Montgomery,		White,
Warner.		Grasett.

Referee—F. D. Woodworth.

Umpire—J. Lash.



The Place of Athletics in Life.

There was a time in the world's history when physical force was the dominating power that decided all disputes and determined the destinies of men and nations. Not many years ago in our own land, physical force was necessarily of great importance in the struggle for existence, and even yet it is a dominating factor in the lives of our people. But its importance is being slighted, its necessity is declining in the thoughts of men, and an age is being ushered in which places a discount on physical stability and demands nervous energy, an age in which the cool-headed, all-round man gives place to the hustler. Especially is this so in the large cities of the American continent, where business men seem to have lost the art of leisure and become infatuated with the hustling commercialism of the age.

The phenomenal prosperity of this continent and the stress of competition seem to have begotten in men an irrepressible craving for wealth, and to have blinded their eyes to all else. They think not of the welfare of their bodies or their minds; they think not of success; they have no time to meditate on the great realities and responsibilities of life. Their whole being is permeated with one idea of success, and they are whirled along in the outer circles of a maelstrom,

whose centre is physical decline and premature old age.

A noted writer of to-day shows very vividly the effect of this kind of life in his description of a New York magazine editor. First, when he newly arrived in New York: "He was courteous, easy and affable, seemingly he had time to attend to his business without rushing as though the last train of the day were about to start and matters of life and

spreading rapidly over this continent. Men to-day sigh for the "Good Old Days" because they can look back upon them as days of leisure and contentment, while as they look about them to-day they see nothing but nervous strenuousness and continuous strife. Experience has proven that men cannot endure this strain for any great length of time, and even though they be strong and vigorous, possessing those qualities which entitle



The Struggle for Position.

death depended on his getting aboard. Moreover his complexion and eyes were clear, his skin smooth and the whole outward man serene and undisturbed."

Second, about a year after: "His serenity had given place to nervousness, his placidity to ill-concealed haste; his general pleasantness to troubled self-consciousness. He was sallow and his face was filled with lines. He had New Yorkitis; he was suffering from Dr. Girdmer's disease."

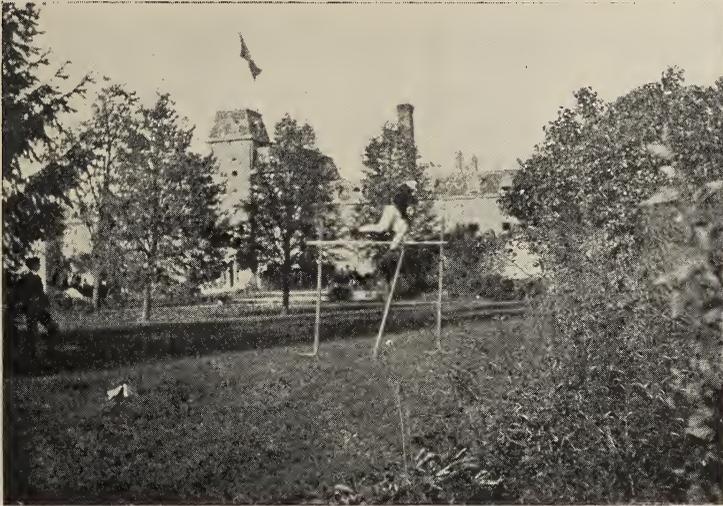
This disease is very contagious and is

them to be called great, yet in the course of a generation or two, those qualities disappear, and the places which they filled, are taken by men who have been bred where New Yorkitis does not exist, but who have caught the disease from the surrounding atmosphere of the city.

Now, our readers may ask, what has all this to do with athletics? A very great deal. I hope I have said enough to show that such a life of hurry-scurry and hustle is not productive of the best results, indeed, is destructive of all that is

best in our national life—strong, vigorous manhood. Moreover, this kind of life, like an epidemic, seems to be taking possession of our people, especially in the great centres of population, and threatens to become a national peril, and I wish to advance the claim of athletics to be one of the best preventatives for this national disease. I do not refer to athletics in the generally accepted meaning of that term, but as persistent systematic training in all branches of

desired training as a result of their own efforts, without help, without encouragement and often in the face of opposition. Why is it, that at our institutions of learning, where our young people are supposed to be taught how to live properly, they receive so little encouragement, so little help, and practically no training in the line of athletics? To be sure such institutions are usually provided with gymnasiums, but a gymnasium is of very little use without some



Striving to Get Up in the World.

manly sport. There is nothing that invigorates and strengthens the body more than systematic exercise; nothing so clears a man's mind and purifies his imagination, and makes him active and strong to resist temptation, as systematic participation in some form of manly sport; nothing so balances a man's mind and sharpens his judgment and makes him more efficient at his work than athletics taken in proper doses.

Hitherto, this question has been left largely to the individual or to small bodies of individuals, who secured the

definite, persistent and systematic method of training.

Each of those institution, is provided with a campus and maintains its own athletic association, but the athletic association is an ever changing body, and of what benefit is a campus without the systematic guiding hand of an athletic trainer? Moreover, when students have the fear of examinations constantly before them and upwards of twenty professors, lecturers and demonstrators, each vying with the other in pressing the claims of his subject on their excited

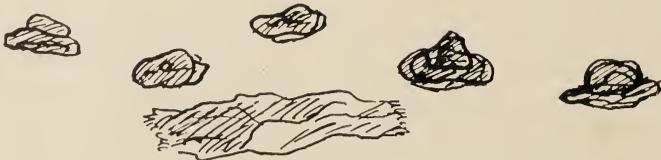
imaginations, they are apt to forget the real object of a well balanced education, they are apt to forget the claims of physical culture. They rush from one thing to another in nervous haste, doing nothing carefully and well; they lose all without a system, and the result is poorer work, and less thorough and less practical education.

Now, this is not all moonshine, but has a practical bearing on college life. I think I could point out several cases of New Yorkitis (in its first stages) in our own college, and it behooves those in authority to take measures to prevent the spread of the disease; and in considering the methods for prevention, I wish to press home the claim of the athletic association that an athletic trainer is not only a luxury, but a necessity. A competent man, who would give systematic training in field sports in summer and in indoor sports in winter, would aid greatly in giving proper balance to our staff, and would secure to the boys a training that would enable them to do more efficient work while at college and would add a great deal to their usefulness in whatever

field of action their life work might be.

We must not forget that physical culture is essential to the attainment of man's highest and noblest ideals. Some may think that Nature's first law is sufficient incentive to induce a man to take such action as in his particular case is necessary to attain sufficient development along this line, but as long as such action is left to the initiative of the individual, and while the ever increasing demands of business and social life are pressing upon him from every side, just so long will physical culture, in the case of the average man, be a spasmodic and desultory exercise, producing no marked effect and doing no great good.

Moreover, a certain amount of training and education is necessary in order that men may know how to secure the best possible physical development in the most economical manner, and the sooner such training becomes a regular part of our college course, and is coupled with the intellectual training which we now receive, the better will it be for our college, our students and our country.



Locals.

And Hg. Bell remarked, as he sat on the platform in the town hall, "I fear not the Rath to come."

Lennox, at the telephone—"Is Mr. Smith there?"

"No."

"Well, tell him to come to the 'phone, I want to see him."

The Minister of Agriculture—"I want some one to love the girls who come to the Macdonald Institute."

President Creelman—"The College boys will do that."

The following are some of the signs recently noticed in the residence:

We want your money.

We want turkeys.

This way to the sheep exhibit.

Exit only.

This property for sale.

The first college paper in the United States was issued by Dartmouth College. Daniel Webster was its editor-in-chief. After all there is something in a name. Dare to be a Daniel.

Our friend Stratton got his name up—for a dollar.

Chisholm, in Entomology—Do you want us to describe this beetle, Professor, as well as draw it? Give the order.

Professor—We shall be quite satisfied with that from you.

How to study the microbe.—Watch the critter till he gets his hump on.

The Official Catalogue of the World's Fair.—A joke by C. W. E.

Subscriptions were recently received from Clarence V. Benson, class 1890, of Loveland, and from Jas. N. Clark, Leadville, Colo.—*Ex.*

Kindly note the above ye overworked subscription clerks of the O. A. C. Review. For thus does an American exchange rejoice over the increase of circulation.

The reason of Whyte's great success in pedro has at last been discovered. It is because of the ease and frequency with which he gets a good *Card* in his hand.

All persons wishing to have a supply of apples for their journey home for Xmas holidays, may call at the local stores and obtain them free of charge, as Mr. F. M. Logan is prepared to furnish an unlimited quantity at this rate.

It is said by some that *position* is everything in this world. If this is the case, then any high and lofty ambitions that may have slumbered within some of our nature-study and manual-training students, must have been more than realized as the Chicago train sped onward during the dying hours of Nov. 24th.

WHAT THE AMERICANS SAY ABOUT US.

Two students were dining together at the International Show in Chicago. One of them came from a leading American Agricultural College; the other from our own Guelph. "You come from Guelph, eh?" remarked the Yankee, "quite a distance, isn't it, I suppose you will return by way of St. Paul. That will be your easiest route." And the O. A. C. man could only smile and say, "great is the mystery of knowledge — American knowledge of Canadian geography."

"Mighty cold over there, isn't it?" was a common remark from a shivering wind-blown Chicago citizen. Poor people, let them make a visit to old Canada and brighten up. A World's Fair is needed. A Canadian World's Fair, held in the winter, to give our friends from over the way a touch of the glory of a Canadian winter. How differently they view us, when they see us as we are. Jos. E. Wing, who attended the Winter Fair and the meetings of the Union, has this to say of some of our ways, our men, and of our sister institution:

"Of course there is toasting and speech-making, though no wine is served and there is no drunkenness or disorder. Great for speech-making are the Canadian brothers and their oratory is distinctly different from ours. Theirs is sound and respectable; the sentences come one after the other with the regularity and effectiveness of the trip hammer; there is no misunderstanding what they mean; their jests are not airy nothings; they do not aim to tickle the fancy, but their jokes come with the ponderous clang of the hammer on the anvil; they smite, they annihilate. And such is the strong tough serious mental fibre of these people that this hearty food suits them

perfectly; they revel in it and never grow weary."

*

"There is a fine respect and loyalty among them. They find a worthy man and most heartily do they uphold him; they reverence him and by this respect he is enabled to do the more effective work. Dr. James Mills, for instance, who made the Ontario Agricultural College, is almost worshipped by these people, and he deserves it I have not the least doubt; yet I suppose in years gone by they hammered him vigorously with criticism if he did not conform to their ideals. Dr. Mills is now Commissioner of Railways, and his place has been taken by G. C. Creelman, a young man, for years an American citizen, now returned to the home of his birth, a man of enormous energy, of goodness and sweetness of character, a man who unites the sturdiness and rectitude of a Briton with the energy, the adaptability, the far-sightedness of an American. Mr. Creelman is young, too, full of a convincing enthusiasm that must be very inspiring to the youth intrusted to his care."

*

"And this seems the key note of all that I have seen in Ontario—that it be practical, that it be prudent and preservative and that it contribute to making men and women and things better. There is little for show. The houses do not have stone fronts and cheap backs; there is not a girl in finery tinkling a piano in a gilded parlor and a worn mother in shabby dress toiling in the kitchen; there is not a father worn with toil on the farm and a son smoking cigars and riding about behind a fast horse. All work, all take comfort, all live, with each other, for each other, and for the glory of Canada and the British Empire."

“I should like, if I had time, to tell of the Macdonald Institute, a new thing at Guelph, two very beautiful new buildings built by Sir William Macdonald of Montreal. It seems this Sir William was a wealthy bachelor tobacconist, and not having wife or daughters of his own I suppose he had a longing in some way to be father to a lot of the bright-eyed, sweet-faced Canadian girls, so he built those buildings and gave them to Ontario. One is a home for 125 girls, the other is a training school where they learn all the arts of home-making, including sewing, cookery, and house-keeping. Green girls are not taken; they come after having graduated from the high schools or colleges, and here they stay for a year or two, graduating fully equipped to manage a home, to feed a husband, to nourish a young brood of their own should God give it to them. Such a clean, light, pretty home as they have there, and yet so simple is it that almost any Canadian girl can have as good, and such bright happy healthy, comely girls as I saw therein. True, we have such things in our land, but nowhere that I have seen quite so complete, quite so charming as at the MacDonald Institute.”

—
If you should see a fellow-man with
trouble's flag unfurled,
An' lookin, like he didn't have a friend
in all the world,
Go up an' slap him on the back an' holler,
“How'd' you do !”
An' grasp his hand so warm he'll know
he has a friend in you ;
Then ax him what's ahurtin' him, an'
laugh his cares away,
Don't talk graveyard palaver, but say it
right out loud
That God will sprinkle sunshine in the
trail of every cloud.

Why is it that men instead of women
are employed to sweep the college halls?
Perhaps because they can gather in the
waist better.

—
Heard in the Halls—If a whale can
swallow a fish, how long will it take a
crayfish to fill a lobster's ears full of crab-
apples? Because, no matter how tired
an elephant may be, he cannot sit on
his trunk.

THE MIGHTY WEST.

Hail to the world's great garner !
The fair Canadian West,
Where the golden grain on the boundless
plain
Heaves like an ocean's breast ;
Star of the British Empire,
The haven for those who roam,
The refuge for stranger exile,
Who seeks for a friend and home.
This brightest gem of the Occident
Has ceased to be but a dream,
As to East, to West, to North, to South,
She empties her golden stream.
Food for the great world's millions
She pours from her fertile breast ;
This land with a mighty future,
The fair Canadian West.
And, hark ! 'tis but beginning,
Like the tread of an army's van
Before the thunderous marching tramp
Of thousands shake the land ;
Or like the low, deep murmur
Of a million tongues suppressed ;
Or the far-off roar of the “avalanche”
That sweeps from the Rockies' crest.
Remotest lands shall hear her tread,
The Dominion's pride she'll be,
When her commerce rolls to its foreign
goals,
O'er the waves of each mighty sea.

—KERRY O'BYRNE, in *Farmers' Advocate*.

1ST STUDENT—

Thrice to-night I've tried to
cram—

2ND STUDENT—

Thrice and once the clock hath
chimed.

3RD STUDENT—

Plug some more. There's time,
there's time.

1ST STUDENT—

First the physics we must know,
How the drainage has to go;
Field-notes, surveys, heptagon,
With the scales and areas on,
Doctored till at last they're got
To resemble what they're not.

ALL—

Figure, figure, and, by jigger,
Where it's wrong we will trans-
figure.

2ND STUDENT—

Chemistry we then shall take,
Formulas, equations make
Of methane, ethane and profane
And derivatives, so plain
As ethers, acid, alcohol,
Ketones, aldehydes, and all
Such things as glycerine,
Amides, imides and benzine,
Glucose, Fructose, palmetin,
Maltose, dextrose, olein,
Peptones, oxides and nitrates,
Phosphates, hydrates and sul-
phates.

ALL—

Filter, boil and analyse,
We must cram till we are wise.

3RD STUDENT—

Entomology we try,
All on beetle, bug and fly,
Larva, pupa, imago,
And the orders we must know,
Lepidoptera and Hemiptera,
Hymenoptera and Diptera,
Coleoptera and Orthoptera,

Not forgetting the Neuroptera.
Paris green and Bordeaux mix-
ture,

Any other kind of fixture,
Saw-flies, slugs, curculio,
This and more we have to know.

ALL—

Fumigate and burn and spray,
Learn it all, and cram away.

1ST STUDENT—

Veterinary let us seize,
Learn the treatment for disease
Diagnosis and prognosis,
Exostosis, Anchilosis,
Sidebones, spavins and ostitis,
Sweeny, splints and peritonitis,
Osteo sarcoma, dislocation,
Actual cautery, ossification,
Keratoma, laminitis,
Cataract and tympanitis,
Wound and tumor, indigestion,
Abscess, ulcer and congestion,
Blister, lotion, liniment,
This and more we must lament.

ALL—

Cram it down with a probang.
We must know the whole she-
bang.

—
R. G. McKay says that his mous-
tache is getting to be quite a nuisance.

—
Once a Freshman was cast on an
African shore,
Where a cannibal monarch held
sway,

And they served up that Freshman in
slices on toast,

On the eve of the very same day.

But the vengeance of heaven followed
swift on the act,

And before the next morn was seen,
By cholera morbus that tribe was
attacked,

For the Freshman was terribly
green.

TUBBY—I'll bet you it isn't.

LENNOX—I'll bet you it is.

TUBBY—What'll you bet?

JACOBS—I'll bet anything we can lick anything.

DOC—Before you bet, Tubby, pay me what you owe me.

TUBBY—Let me at him.

These are the golden texts which, day in and night out sift gently around Lower Pantan.

PROF. REYNOLDS—The climate in California is such that one can snowball on the tops of the mountains one hour, take a hot bath at a lower altitude the next hour, and by descending still further, may refresh himself with tropical fruits.

LEITCH—We can beat that at the O. A. C. by enacting the first scene on the roof, the second lower down, and winding up in the dining-room.



In Residence at the O. A. C.—Knight and Ransom's Room.

A dairy maid pensively milked a goat,
And pouting, paused to mutter:

"I wish, you brute, you'd turn to
milk,"

And the animal turned to butter.

—

Before the Toronto Rugby game—

McFayden—Do you think a cigarette would hurt me, Mr. Milligan?

—

McLean, at St. Louis—What price are those post cards?

Fair Lady—Two for five.

McL—Go on, you're tickling my feet. I can get them for less than that.

The Fair One—All right, we'll give you three for ten.

McL.—Thanks. I'll take a half dozen.

MAC—(Reading)—“Body found in Toronto.” I wonder who lost it?

HART—Some poor soul.

Driven to desperation by the quality of our table oleomargarine, some enterprising Seniors of table No. 1 have on foot a scheme to manufacture Dairy butter without the hitherto necessary hirsute foundation framework. A company has been formed to carry on the work, and the following officers have been elected for the ensuing term:

President—Unciliated Bishop.

Secretary—G. Barepate Warner.

Treasurer—Governor Jordan.

General Manager—Dr. Hairless McFayden.

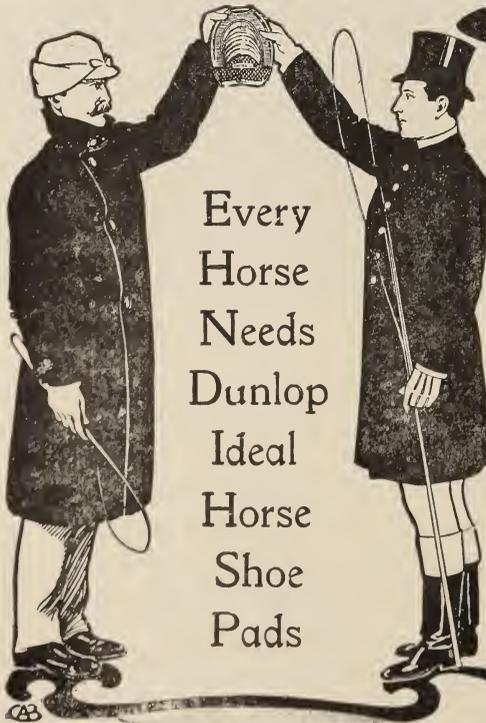
None but bald-headed men need apply for employment, and arrangements have been made with the great

Amos Burbank for the evolution of a breed of hairless cows.

Like lightning flew her agile jaws,
Swearwords darted from her tongue,
The maid was fighting mad because
She couldn't get her bangs stay bung.

THE KISS.—A kiss is a peculiar proposition. Of no use to one, yet absolute bliss to two. The small boy gets it for nothing, the young man has to steal it, and the old man has to buy it. The baby's right, the lover's privilege, the hypocrite's mask. To a young girl, faith; to a married woman, hope; and to an old maid, charity. * * * * He who kisses a maid kisses a miss, and he who kisses another man's wife kisses amiss: so

Continued on page xix, Advertising.



Every
Horse
Needs
Dunlop
Ideal
Horse
Shoe
Pads

Will Save
a Horse
From Falling
on the Wet
Pavement.
Keep the
Hoof Healthy.

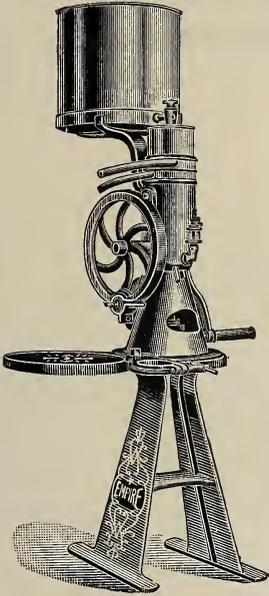


THIS MARK ON
EVERY GENUINE PAD

Put On by All
Blacksmiths.



WAKE UP!



Many of the up-to-date farmers in Canada have waked up, and more are waking up every day, to the fact that it is necessary to have an **Empire**, in preference to any other Separator: in order to run their Dairies on the most approved plan.

Why?

BECAUSE THE
“EMPIRE,”

On account of its ingenious skimming device, skims closer—on account of its smooth cones, is washed easier—on account of its light bowl and few parts, runs easier, and therefore lasts longer, and gives less trouble than any other machine on the market.

Look into these claims and see for yourself. We will be most pleased to demonstrate them to your entire satisfaction.

We have an interesting booklet called “Dairyman’s Dollars,” giving the story of Peter Sleepy and his awakening. Send for it.



Empire Cream Separator Co.,

28-30 Wellington Street, West,

TORONTO - ONTARIO

High Steppers

W



HEN Mr. Beith's Hackneys came out to the shows this season did they not create a sensation not only in Canada but at St. Louis? They captured the best that was going. They brought honors to Canada that all good Canadians are proud of.

You wondered, and so did everyone else wonder, how he got them in such condition, but Mr. Beith knew, and here he tells you.

Waverley Farm, Bowmanville, Ont., Oct. 25th 1904.

To the Carnefac Stock Food Co., Winnipeg and Toronto:

Gentlemen—We have been using Carnefac Stock Food for the past six months, and I take much pleasure in telling of the wonderful results we have experienced since we commenced to use it. Our Hackney horses, led by Saxon, being prize winners at the World's Fair, St. Louis, Mo., require and get, besides the best possible attention, the best possible diet, and this necessarily guides us in our selection of either Stock Food or condition Powder.

We first used Carnefac for some horses that had the distemper, with the result that it kept their stomachs in splendid condition and that they kept feeding, so the disease was thrown off quickly and the horses did not go back in condition.

To owners of high-class horses we can cheerfully recommend Carnefac.

(Signed) ROBERT BEITH,

Per Duncan Beith, Manager of Farm and Stock.

The best cattle-men tell us the same story, so do the best hog men and poultry men. There is really no question about it any more,

CARNEFAC IS THE BEST

The Carnefac Stock Food Co.

Toronto  Ontario

Continued from page 216.

the only thing left for a man is wid-
ows. * * * * A North side girl of
sweet 16 says the first time her sweet-
heart kissed her it made her feel like a
tub of butter swimming in honey,
cologne, nutmeg and cranberries, as
though something ran down her
nerves on feet of diamonds, escorted
by several cupids in chariots drawn
by angels shaded with honeysuckle,
and the whole spread with melted
rainbow.



A Moment of Leisure.

We Macdonald girls say,
As at Vespers we pray,
Help us good maidens to be;
Give us patience to wait
Till some subsequent date,
World without men,

Ah me!

Professor—in second year Botany,
(on noticing students blowing some
milkweed seeds)—“Several in the
room are much given to blowing
themselves, but when down town the
same chaps are the last to do so.”

The Judging Class claim to have
had a big time on their Hamilton trip.
The appearance of some jackasses on
the roadside set some of them think-
ing:

Gardiner—They use jackasses here
to carry people up the mountain,
don't they?

Doc.—“Sure! A great chance for
you to make expenses to-day.

—
Last night I held her hand in mine,
A hand so slender and divine,
Endued with all the graces.
To-night another hand I hold,
A hand well worth its weight in gold,
Just think of it—four aces!

—
Comparative Anatomy—Mills.
The Labor Question—Clark.
Modern Drainage—Leitch or Wade.
Our Anxious Crammer's Review—
Student Body.

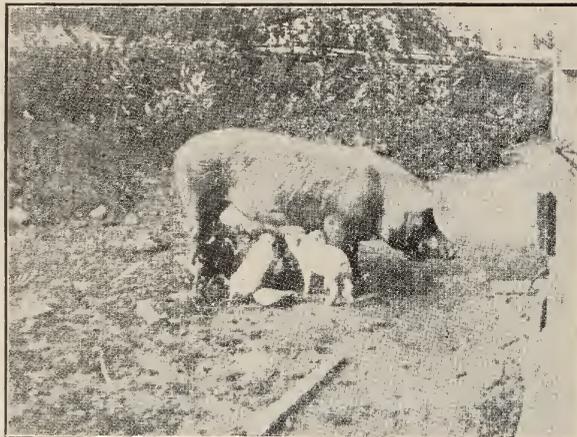
—
Freshman (anxious to make an im-
pression)—What is wrong with your
horse's hind hocks, Professor, they
seem swollen?

Prof—Probably they have rubbed
against his front ones.

—
The freshmen relied on their num-
bers to get the most out of the
banquet, but it was afterwards dis-
covered that the third year took the
cake.

—
Mr. Jarvis, in Entomology—I hav-
n't any fleas with me, so we shall
skip them this morning.

—
Monroe—“Did you ever skate”
Thompson—“I was never on a
skate but once in my life.”



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 aid assimilation.

FREE A \$3,000 Stock Book and Colored Lithograph of Dan Patch 1.56 1-4.

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 1 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.
Toronto, Canada.

Largest Stock Food
Company in the World

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

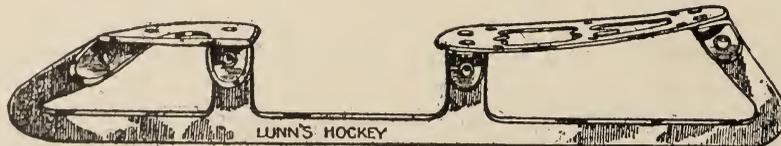
Skates

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



Goal Sticks

Sweaters Stockings, Etc.



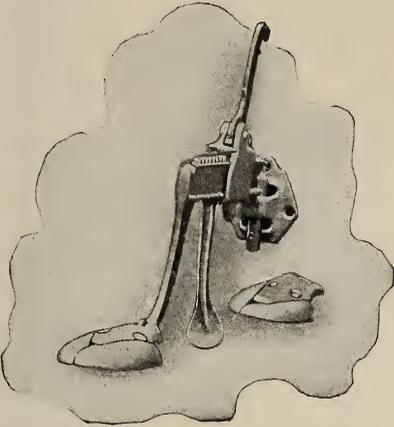
HARRY H. LOVE & CO.

189 Yonge Street, Toronto

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

The "TIP-TOP" SHOE HOLDER

Patented in Canada, Great Britain and United States.



The Best Idea Yet

So Simple Too

Why Didn't Some One Else

Think of It Before ?

Patented and Designed by a Canadian.

Will hold any style or shape of boot or shoe tightly stretched for cleaning. Can be used for Men's, Ladies' or Children's Boots. The three-piece last is what does it. If you haven't a set yet, order one with next goods from your dealer, or mail us \$1 and we will ship a set to you.



Manufactured by

Taylor-Forbes Co.,

GUELPH, - ONTARIO

Limited

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.

National Portland Cement

A 9 to 1 Cement.

A Cement that when mixed in proper proportions of 1 part to 9 parts of sand will then set quickly and last perfectly and permanently.

Farmers.

For your New House, Barn Floor and Silo.

Builders and Contractors.

For your Bridge Work, Subways and Buildings of all kinds.

You Need A Cement

That will not crack or crumble. That will set and harden quickly.
That will last permanently.

We have such a Cement and we **Guarantee** it in every respect. It's worth looking into, isn't it? A post card will bring illustrated pamphlet showing suitability of **Our Cement** for all descriptions of work. Write to-day,



We sell Fire-brick, Clay, Sewer Pipes and Chimney Linings. All sizes.



SOLE AGENTS NATIONAL PORTLAND CEMENT



John M. Bond & Co.

HARDWARE MERCHANTS

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

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 Department of Agriculture, Sept. 17th, 1903.

For sale at

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

D. H. Booth

Successor to

F. HURNDALL

PHOTOGRAPHER

95 Upper Wyndham St.

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

Special Feeds



When you are planning a little special feed remember that McCrea is headquarters for fine Chocolates Biscuits, Fruit and Oysters. We supply both the O. A. C. and Macdonald Hall with Groceries, and can always send anything out for you. We solicit a trial.

Noted Tea Store

and China Palace

J. H. McCrea

'PHONE 48

John D. McKee, Phm. B.

STUDENTS!

Before making your purchases of presents for

Christmas 1904

We ask your inspection of our Large, New Stock of Imported Goods, now open, comprising

Perfumes.

In elegant Leather, Burnt Wood and Cut Glass Ware.

Brush, Toilet and Manicure Sets.

In Solid Ebony, Floroloid, Rosewood—richly mounted in Sterling Silver and Mother of Pearl suitable for initials.

Gold Goods.

This beautiful line comprises Candalabra, Ink Stands, Mirrors and Clocks, in solid gold, guaranteed, and particularly suitable presents for ladies.

Wrist Bags, Chatelaines, Purses and Wallets.

Latest Designs direct from Paris.

- | | | | |
|---------------------------|------------------------------|---------------------|-----------------------|
| Smokers' Sets | Pipe Racks | Music Folios | Writing Folios |
| Shaving Sets | Cigar Cases | Paper Knives | Playing Cards |
| Papetries | Paper Weights | Bibles | Hymnals |
| Handkerchief Cases | Collar and Cuff Boxes | | Glove Cases |

And a host of other Christmas Specials too numerous to mention.

Wampole's Fermolid Cream.

The ideal preparation for the teeth, antiseptic and fragrant, cleanses and preserves, perfumes the breath. Put up in tubes. **25c a tube.** Ask for free sample.

Wampole's Yunora Perfumes.

The Standard of Quality. All the popular odors, at the popular price **50c per oz** at

MCKEE'S DRUG & BOOK STORE

20 Lower Wyndham St., Guelph.

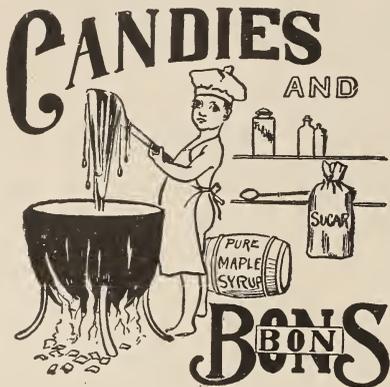
'PHONE 66

ORDERS PROMPTLY DELIVERED

Your Patronage Solicited.

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, Cocoas, 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. 20 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 a Graduate Expert and Experienced Optician. Charge nothing to

TEST THE SIGHT

We Guarantee Satisfaction



Savage & Co. Jewellers

Everything in Woodwork At Lowest Prices



If you are shingling your house or barns, putting in doors or windows, erecting fences, laying floors or repairing your property, go for your materials and secure lowest prices and the advantage of long experience and conscientious work of

Robert Stewart
GUELPH.

Central Bookstore

Opposite where the Street Cars stop



- Text Books Exercise Books
- Foolscap Writing Pads
- Up-to-date Note Papers and Envelopes
- Papeteries, 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.

Accessories that Distinguish The Well Dressed Young Lady

Macdonald Girls will find at Ryan's the newest creations in

Belts and Neckwear

the smartest styles in all sorts of Good

Reliable Gloves

and a splendid choice of

Ladies' Shoes

in correct styles for every use or occasion.

Everything that Young Ladies want to wear

in Complete, Satisfying Assortments, Best Styles
and at Moderate Prices

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.

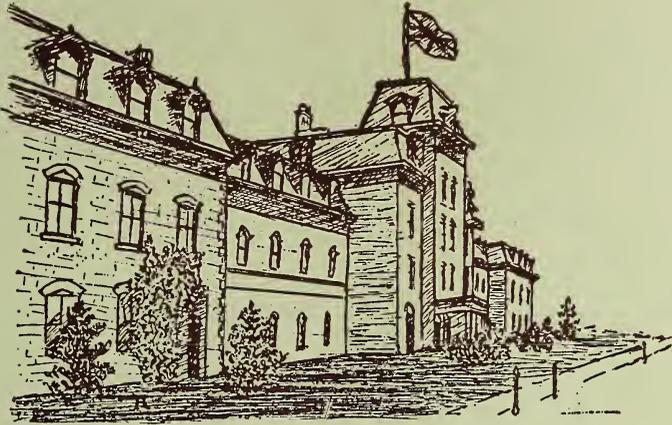
O. A. C. Fountain Pens, \$1.00.

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.

The O. A. C. Review



Wishes its Many Friends

❧ A Merry Christmas ❧

— AND —

A Happy and Prosperous New Year.

1905 | Calendar | 1905

January.							February.							March.							April.								
SUN.	MON.	TUES.	WED.	THU.	FRI.	SAT.	SUN.	MON.	TUES.	WED.	THU.	FRI.	SAT.	SUN.	MON.	TUES.	WED.	THU.	FRI.	SAT.	SUN.	MON.	TUES.	WED.	THU.	FRI.	SAT.		
1	2	3	4	5	6	7	...	...	...	1	2	3	4	...	...	...	1	2	3	4	...	...	...	...	...	...	...
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8		
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15		
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22		
29	30	31	...	...	...	...	26	27	28	...	...	...	...	26	27	28	29	30	31	...	23	24	25	26	27	28	29
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	...	...	...	...	...	...
May.							June.							July.							August.								
...	1	2	3	4	5	6	1	2	3	1	1	2	3	4	5
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12		
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19		
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26		
28	29	30	31	...	...	...	25	26	27	28	29	30	...	23	24	25	26	27	28	29	27	28	29	30	31	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	31	...	...	...	...	...	...	...	...	...	...	...
September.							October.							November.							December.								
...	1	2	1	2	3	4	5	6	7	1	2	3	4	1	2
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9		
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16		
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23		
24	25	26	27	28	29	30	29	30	31	...	...	...	...	26	27	28	29	30	...	...	24	25	26	27	28	29	30
...			



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.

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.**

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

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.

Students Attention!

THE *Guelph Weekly Herald*, the leading paper in the County of Wellington, offers any one of the following papers with

The Guelph Weekly Herald for only \$1.25.

Montreal Family Herald and Weekly Star

Weekly Mail and Empire Weekly Sun

Weekly Globe Weekly Witness

You should take advantage of these clubbing rates, which are the lowest offered in Canada. Send in your subscription now, and get the balance of the year free for all papers excepting the Montreal Family Herald and Weekly Star, which will only be sent for one year.

Address all letters

H. GUMMER



HERALD



GUELPH

**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
Portrait of your-
self

ROGERS ❀

❀ The Artistic Photographer ❀

YOUNG'S OLD STAND

GO TO HEROD —

FOR ALL DRUGS

❀ ST. GEORGE'S SQUARE ❀



The Students of the

O. A. C. and Macdonald Institute

are invited to make this store their buying 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.

Water Troughs

THE "WOODWARD"



SOLID FACTS

They will save labor. They will pay cost in a short time.
They will save immense time. They always work automatically.

BEST STOCKMEN AND DAIRYMEN USE THEM

ONTARIO WIND ENGINE & PUMP CO, LTD.
TORONTO.

FOR YOUR

Hockey Shoes
Rubbers and
Overshoes

It will pay you to deal at

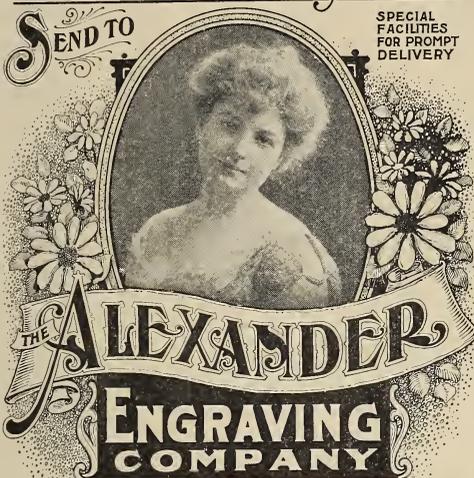
**The Leading
Shoe Store**

W. McLAREN & CO.

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.

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.

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

JOHN HILL

Importer and Breeder of
**YORKSHIRE SWINE and
SHORTHORN CATTLE**

Stock always on hand.

John Hill, Wellesley P.O.

G. T. R. Station, Baden.

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

LIPPINCOTT'S

MONTHLY MAGAZINE
A FAMILY LIBRARY

The Best in Current Literature

12 COMPLETE NOVELS YEARLY
MANY SHORT STORIES AND
PAPERS ON TIMELY TOPICS

\$2.50 PER YEAR; 25 CTS. A COPY
NO CONTINUED STORIES

EVERY NUMBER COMPLETE IN ITSELF

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. E. J. Davis,
Commissioner of Crown Lands,
TORONTO.

Toronto and Hamilton Electric Co.

HAMILTON, ONTARIO.

Manufacturers of

DIRET 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 Traction
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.

IF YOU WANT

School Apparatus and Supplies

Write
The

**Steinberger
Hendry Co.**

37 RICHMOND STREET W., TORONTO

Commencement Parts

Contains *models* of the salutatory, the valedictory, orations, class poems, class songs, class mottoes, class will, try 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

MAXWELL'S

FAVOURITE CHURN

LIST.

NO.	HOLDS	CHURN
0	6 gal.	½ 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.

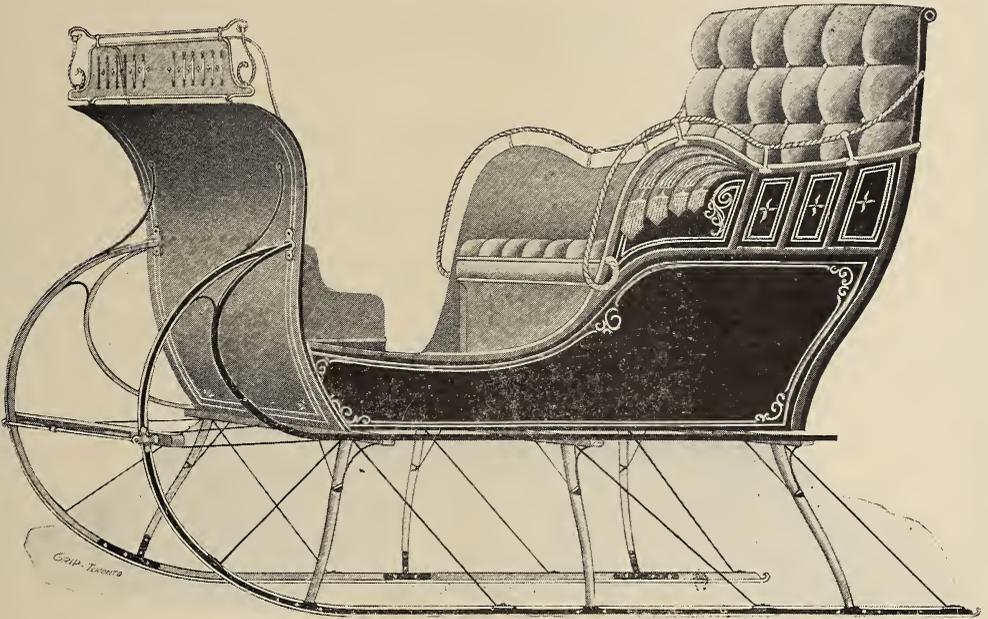
J. B. Armstrong Mfg. Co.,

(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.

WE CAN GIVE YOU THE BEST

Because, regardless of Cost, whether in Material, Labor or Experimental Work, nothing less satisfies us; the same should be true with you. And in these lines we Excel.



Ploughs, Gangs, Sulkys, Harrows—
Drag and Disc; Strawcutters, Pneu-
matic Manure Spreaders, Endless
Apron, Land Rollers, All - Steel
Closed Ends; Stable Fittings, Drag
and Wheel Scrapers 



Delivered Prices quoted to all parts of Canada, Great Britain, South Africa and Australasia.

The Wilkinson Plough Co.
 Limited.
TORONTO

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

☀ 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

Ralph Connor

Cloth, Illustrated, \$1.25.

GOD'S GOOD MAN

A Story Grand in its Simplicity

Marie Corelli

Paper, 75c. Cloth, \$1.25.

PATHFINDERS OF THE WEST

The Romance of Discovery Thrillingly Told

Agnes C. Laut

Superbly Illustrated, \$2.00

THE MYSTIC SPRING

Sketches of the First Days of the West

D. W. Higgins

Illustrated, \$1.50

BY THE QUEEN'S GRACE

A Graceful Tale of London in Elizabeth's day.

Virna Sheard

Cloth, \$1.25

William Briggs,
Publisher

29-33 Richmond Street West
Toronto

DURING THIS WINTER HAVE ❁ ❁

PURE AIR

❁ IN YOUR BARNs AND STABLEs BY USING



ARBUN



The new odourless disinfectant which entirely prevents all smell and enables you to keep your

Stock in Fine Condition

and by stopping loss of Nitrogen from the manure more than saves the cost of the disinfectant.

A Dry Odourless Powder Clean to Handle

Manufactured in Canada under Supervision of Chemical Experts.
Give it a Trial. It will repay you. Sales Agents

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

Our Sheet Steel Building Materials
Roofing, Siding, Ceilings,

Are Handsome in Design.

Durable and Fireproof. ✿ Low in Price.

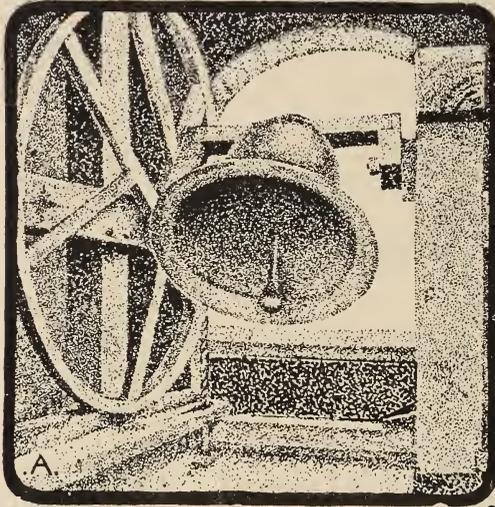
EQUALLY useful in the construction of a new building or the renovation of an old one. Made in all grades and patterns for all purposes. Kept in stock for prompt shipment.

✿ Send Sizes for Estimates and Free Catalogues. ✿

THE METAL SHINGLE & SIDING CO., Limited,

Largest Makers in Canada.

PRESTON, ✿ ONTARIO.



"RING OUT THE OLD
RING IN THE NEW."

Make Success Yours

BY USING

"Massey - Harris"

in 1905

GRAIN BINDERS
CORN HARVESTERS
MOWERS
RAKES
SIDE DELIVERY RAKES
CULTIVATORS
SEEDERS
HOE DRILLS
DISC DRILLS
SHOE DRILLS
DISC HARROWS
DRAG HARROWS
FEED CUTTERS
ENSILAGE CUTTERS
PULPERS
CREAM SEPARATORS
MANURE SPREADERS
PLOWS
WAGONS
SLEIGHS

MASSEY-HARRIS

The Canadian Portable Fence Co.

Limited

Head Office and Factory, Foot Jarvis St.

TORONTO  CANADA

Manufacturers of

Steel Truss Fence Posts and Portable Fences

(Covered by Canadian and U. S. Patents)

A FEW POINTS IN WHICH WE EXCEL

1. End, or Anchor-Posts may be set in any soil, or on bed-rock, by slightly changing anchorage.

RIGID

PERMANENT

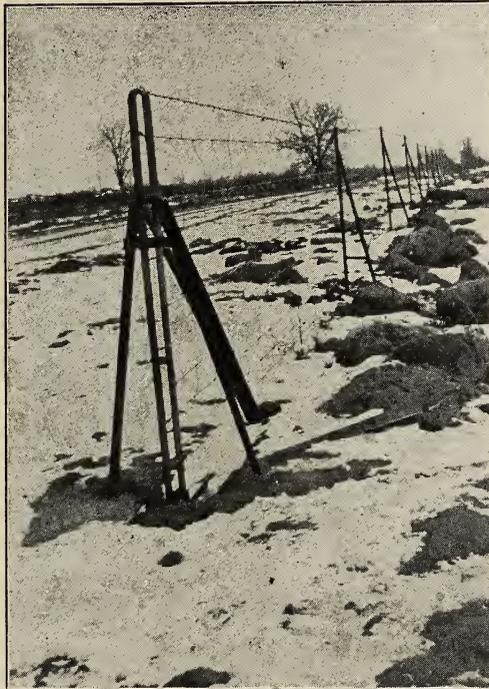
ADJUSTABLE

3. Steel Posts are practically indestructible, will outlast many cedar posts.

LIGHT

COMPACT

DURABLE



2. End, or Anchor Posts take entire strain of a wire fence. Ours

NEVER

HEAVE

or let the fence Sag. Will stretch any wire or web.

4. Our Steel Posts are set with 50 per cent less digging than wooden posts. Investigate our system of

GATE-POST

ANCHORAGE

STANDARD STATIONARY FENCE

Least Ground Lost in Headlands. Clean Fence Bottoms. No Snow Drifts. Absolute Adjustment of Gates and Gate Posts.

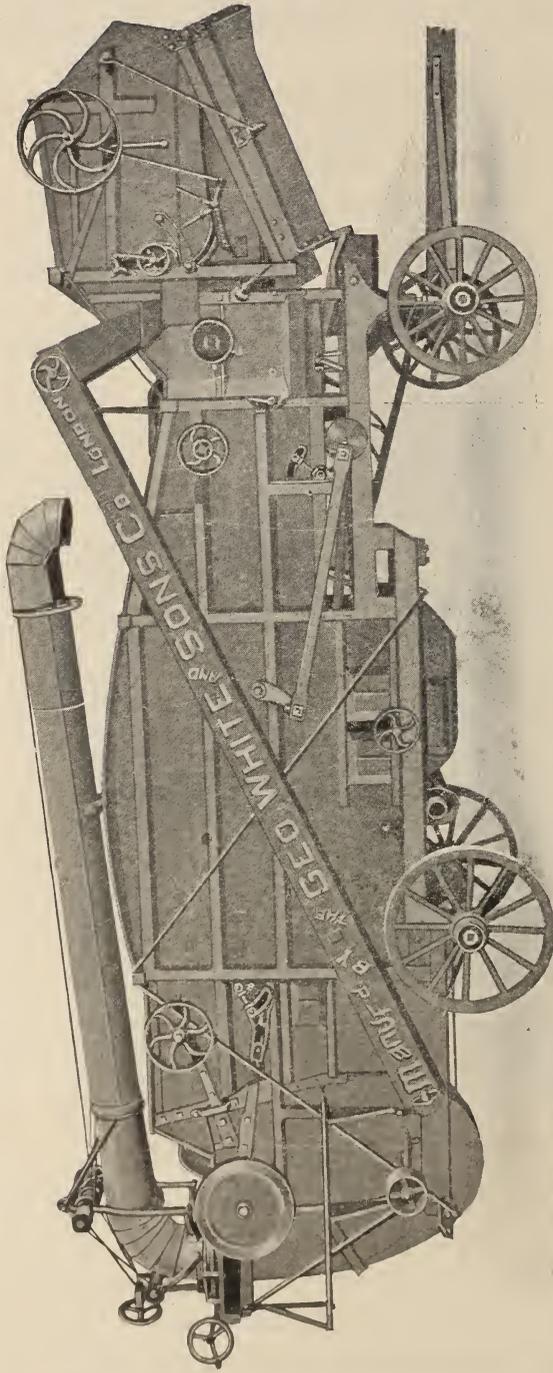
For further particulars write for our

ILLUSTRATED CATALOGUE

It will tell you all about our Products

Active, Reliable Agents Wanted

Farmers, See that for 1905 your thresherman furnishes you with the
Labor Saver of the age



The White Challenge with Cutting Box attachment, "Farmer's
 Friend" Stacker and Self-feeder.

The George White & Sons Co., Ltd.
LONDON & CANADA

The World's Champion

Dairy Butter Maker

Mrs. M. E. Holmes, of Owatonna, Minn.,

secured the **HIGHEST SCORING** on Dairy Butter in the 1st, 2nd and the 3rd butter-making contests held at the World's Fair, St. Louis, Mo., thereby winning the **World's Championship**.

Mrs. J. C. McSpence, of the same place, secured the **SWEEPSTAKES** in the 3rd scoring in same contents.

Proof enough that the U.S. makes the Best Butter

BECAUSE EACH ONE USES



The U. S. Patent Separator

The most simple, durable and thorough machine for any dairyman who wants to produce the best butter at the least cost.

The Vermont Farm Machine Co.

Bellefs Falls, Vt.

also in *Illustrated Booklet in Colors* illustrating "The U. S. Way"

The Judge and the Jury

The Jury of Awards of the

ST. LOUIS EXPOSITION

Confers the

GRAND PRIZE

HIGHEST AWARD

ON THE

De Laval Cream Separator



GET
A
DE LAVAL
AND
BE
SATISFIED

600,000
USERS
OF THE
DE LAVAL
ARE THE
JUDGES

GET ONE

The De Laval Separator Co.

77 YORK ST., TORONTO