

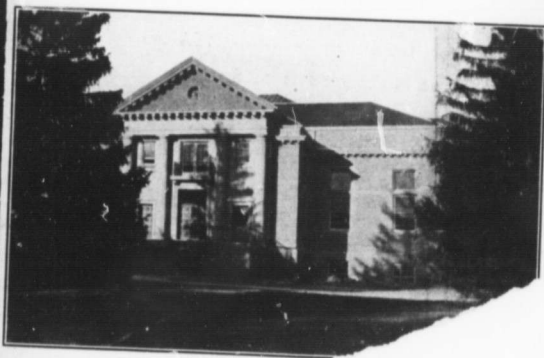
Volume XXVII.

Number 6

# O.A.C REVIEW

March

1 9 1 5



# Farm Boys

## What Are YOUR Plans For The Future

Do you intend to run your own farm; to use better methods than the average farmer; to raise better crops and better stock; to keep your farm in better condition; **To Make the Farm Pay?** Unless you do, what satisfaction is there in farming? Now is the time to lay the **Foundation** of your life's work; to learn something of soils; fertilizers; drainage; plant and animal diseases; insect pests; varieties of grains, roots and fruits; breeds and types of animals; marketing of farm produce; methods of cultivation; carpentry; blacksmithing, etc. Get an insight into the innumerable problems that every farmer has to face and should know about.

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By Taking the Two-Years Course at  
**The Ontario Agricultural College**  
GUELPH - - ONTARIO

This course is designed to meet the requirements of our country boys.

**YOU** can come to College for two years

**BECAUSE** Ordinary Public School education is sufficient for admission to the course.

The College year begins September 19th, and ends April 15th, so that boys from the farm may return to their homes to assist in the spring and summer work. During this period many boys can earn sufficient funds to defray College expenses for the following year.

Tuition fee for Ontario students is only \$20.00 per year, board and room in residence is obtained at the rate of \$4.00

the cost during the first year is defrayed by the various departments of the College.

continue to the work of the Third and B. S. A., you are not required to Students are accepted for this examinations warrants it.

SEPTEMBER

course calendar.

L.D., President.



## Business as Usual!

It may be business as usual with some firms, but with us it is better—increasing every day.

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We are therefore requiring larger quantities of

## CREAM

to keep up the supply of the celebrated

# Bowes Butter

We pay the highest prices to farmers who will supply the best cream. We furnish cans and make returns for each can within three days.

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Money, Time and  
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and replete with cultural direc-  
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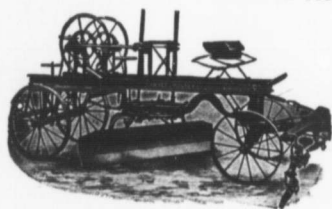
133 King St. E., Toronto, Ont.  
Montreal Branch, Coristine Bldg.



Established 1836 **MADE IN CANADA** Established 1836

# SAWYER-MASSEY CO.

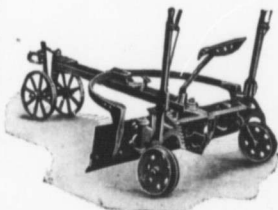
Road Graders for every purpose, either for making new roads or keeping them level and in condition for traffic after being



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graded. Every municipality should have one or more of the large size for grading new roads, after which the small one can be used to advantage in keeping them levelled off to pre-

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The Oldest Canadian Manufacturers of  
Road Making and Threshing Machinery

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TRUNK  
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THE INTERNATIONAL LIMITED  
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Lv. Montreal .....	9.00 a.m.	Lv. Chicago .....	5.00 p.m.
Ar. Toronto .....	4.30 p.m.	Lv. Detroit .....	12.01 a.m.
Lv. Toronto .....	4.40 p.m.	Lv. London .....	5.45 a.m.
Ar. London .....	7.55 p.m.	Ar. Toronto .....	8.35 a.m.
Ar. Detroit .....	9.55 p.m.	Lv. Toronto .....	9.00 a.m.
Ar. Chicago .....	8.00 a.m.	Ar. Montreal .....	5.45 p.m.

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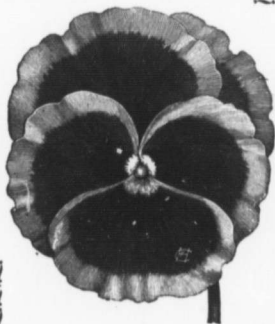
Leave Toronto 8.00 a.m., arrive London 11.06 a.m., arrive Detroit 1.45 p.m., and Chicago 9.10 p.m. daily.

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Send to-day for your copy of D. & F.'s new 1915 Seed Catalog. It is an authority on best varieties to grow and will be sent post-paid for the asking.

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MONTREAL

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## Has no Equal as a Butter and Milk Producer

Milch cows need food rich in nitrogen for two reasons: To rebuild the ordinary waste of tissue and to secure the protein necessary for the milk. This is why, as a producer of butter and milk, nothing can equal

## "MAPLE LEAF" OIL CAKE

(FINE GROUND OR NUTTED)

This splendid food is so rich in protein that British farmers send four thousand miles to secure it. It increases the flow of the milk and adds to the richness of the cream. Made by the old process and guaranteed absolutely pure.

"Maple Leaf" Oil Cake is made in Canada, from Canadian Flax, and with Canadian labor and money.

Write for samples and prices and our FREE booklet, "Facts to Feeders."

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50 YEARS IN BUSINESS

Capital Paid Up, \$5,000,000.	Reserve, \$3,400,000.
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Special attention given to accounts of Students, Farmers, Cattle and Hog Dealers, Farmers' Notes Discounted and Farmers' Sale Notes cashed or taken for collection.

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The advantage of a Savings Bank Account is that it earns you 3 per cent. interest night and day, and you can always get your money any time you want it, and every day your money is deposited with us we pay you.

The Dominion and Provincial Governments have large sums of money on deposit with this Bank and this should assure the public that your money is absolutely safe, as we are one of the oldest, largest and strongest Banks in Canada.

We want your name on our list, and we also want to meet you personally, when you call. \$1 will open an account. Office old Traders' Bank building, next door to post office.

GUELPH

F. D. ANDERSON, Manager,

ONTARIO

*Progressive Jones says :*

## "Grow Bigger Crops During the War"

**T**HIS is the Canadian farmer's golden harvest-time. With wheat selling over the dollar mark, and other grains and vegetables bringing war-time prices, farmers should do their utmost to grow as big crops as possible this year. This, friends, is the time of all times to enrich your soil with

# Harab FERTILIZERS

It is the sure way to make your soil yield bumper crops and make more money for you. By using the proper fertilizers you can greatly increase your yield at no extra cost of labor or seed. Would it not pay you to grow the maximum from your soil?

If Harab Fertilizers were not exceptionally profitable to use, I don't think there would be such a great and growing demand for them, do you? But perhaps you would like to read the new fertilizer booklet that describes them fully. If so, just drop a card to The Ontario Fertilizers Limited, and say "Please send me your new Harab Fertilizer booklet." They have promised me to send my friends this booklet promptly without charge.

*Yours for bumper crops,  
Progressive Jones*



### DAVIES' Fertilizers

If you've been in the habit of using Davies' Fertilizers, keep on using them. They are excellent fertilizers. It's merely a matter of choice between Harab and Davies'. The Ontario Fertilizers Limited supply both.

The Ontario Fertilizers Limited, West Toronto, Canada

# *Business-getting Printed Matter*

**I**S the only kind worth while. You cannot turn out good printing unless you are enthusiastic about it. The Advertiser Job Printing Company, Limited, has been made successful in catalogue, magazine and book printing, because they are full of enthusiasm over every order coming into their plant. They make a study of their customers' needs. Every order, large or small, has the same individual attention, the same care and perfection in execution.

PHONE 3670

**The Advertiser Job  
Printing Company, Limited.**

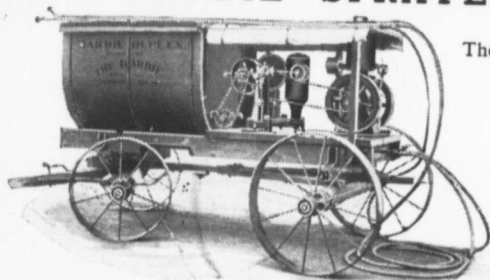
**191-195 Dundas Street**

**London**

**Ontario**



## THE HARDIE SPRAYERS



The Sprayer  
with the  
Trouble  
Left  
Out

The first "HARDIE" was made fifteen years ago, and it is doing good work today in the orchard of H. W. Schmidkous, Loraine, Ohio—36,000 "Hardies" have been made since then. They are used by the best fruit growers, not in America alone, but the world over. You know, or should know, that you can't afford to take a chance. Buy the Sprayer that everybody Knows is Right—the Sprayer that is free from experimental risk. We have them in all sizes, and carry a big stock in Burlington, Ont.

SEND FOR CATALOGUE

The Biggs Fruit and Produce Co., Ltd., Burlington, Ont.

## One Egg in Winter is Worth Three in Spring

Therefore see to it that you get Winter Eggs.

### Gunns "Shur-Gain" Beef Scrap

Is the best known means to attain this end. It supplies the necessary protein, and is a substitute for the insect life consumed by the fowl in Summer.

Beef Meal      Grit      Bone      Shell  
Blood Meal      Charcoal, etc.,

Always kept in stock.

## Gunns Limited, West Toronto

Write for our Poultry book.

# Latest Improved Dairying Methods

All readers of *The Review* will be interested in the newest dairying methods. These are given in detail, in a most thoroughly understandable way in the new edition of

## Canadian Dairying

By Prof. H. H. Dean

This edition, just recently issued, has been most carefully revised and brought thoroughly up-to-date and includes photographs and drawings of the latest and best apparatus. It has 299 pages with alphabetical index and is bound in substantial cloth covers.

Price, \$1.00 net, postpaid.

**WILLIAM BRIGGS, Publisher**  
29-37 Richmond Street West Toronto, Ont.

# OFFICIAL CALENDAR

OF THE

## DEPARTMENT OF EDUCATION, FOR THE YEAR 1915

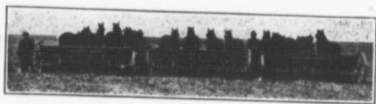
### March—

1. School Boards in unorganized Townships to appoint Assessors. (Not later than 1st March.) Separate School supporters to notify Municipal Clerks. (On or before 1st March.)
26. Normal School final examination for Grade A students begins.

### April—

1. Returns by Clerks of Counties, Cities, etc., of population to Department due. (On or before 1st April.)  
Normal, English-French Model, High, Continuation, Public and Separate Schools close for Easter. (Thursday before Easter Sunday.)
2. Good Friday.
5. Easter Monday.
6. Annual Meeting of the Ontario Educational Association at Toronto. (During Easter Vacation.)
12. High and Continuation Schools, third term, and Public and Separate Schools open after Easter holidays. (Second Monday after Easter Sunday.)
13. Normal and English-French Model Schools open after Easter Holidays.
14. Notice by candidates for Junior High School Entrance and Junior Public School Graduation Diploma examinations, to Inspectors, due. (Before April 15th.)
15. Reports on Night Public Schools due (Session 1914-1915). Not later than the 15th April.)
20. Inspectors report number of candidates for Junior High School Entrance and Junior Public School Graduation Diploma examinations. (Not later than April 20th.)
30. Notice by candidates to Inspectors due for Senior High School Entrance, Senior Public School Graduation Diploma and the Model School Entrance examinations and the Lower School examination for Entrance into the Normal Schools and Faculties of Education. (Before May 1st.)

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



## Massey-Harris Drills Will Sow Your Grain Right



MASSEY-HARRIS DRILLS have strong Steel Frames which hold all parts in proper relation.

MASSEY-HARRIS DRILLS have reliable Force Feed Runs which sow uniformly and without injury to seed.

MASSEY-HARRIS DRILLS have Positive Gear Drive.

MASSEY-HARRIS DRILLS have simple and easy control —one motion of a Lever lowers the Furrow Openers, applies pressure and starts the Feed—the opposite motion raises the Furrow Openers and stops the Feed.

MASSEY-HARRIS DRILLS are made in a wide range of sizes, and with Hoes, Discs or Shoes.

GRASS SEED BOXES WHEN ORDERED.



## Massey-Harris Co. Limited.

Head Offices—Toronto, Canada.

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Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current,  
Calgary, Yorkton, Edmonton.

— Agencies Everywhere —



## Less Labor---Less Waste More Profits!

For forty years we have been doing our best to render Farmers and Dairymen practical help in reducing labor, eliminating waste and increasing their farm profits. Our ideas have found concrete expression in the already well-known

### LOUDEN Barn and Stable Equipments

The Louden line of equipments is designed with the special object of putting farming on a scientific basis. The employment of these devices takes the backache out of farming, saves hours of time and makes pleasant

what may now be dreary drudgery. Study it all for yourself in our catalogue "Everything for the Barn." Let us send you a copy. It will give point and interest to your studies, and is invaluable as a text book.

You will find Louden Equipments prominent in the Barns and Stables of the O. A. C.

**LOUDEN MACHINERY COMPANY.**

Guelph, Ont.

To Live In

To Make Money In

To Work In

# ONTARIO

is still the best Province in  
the Dominion

Ontario has great agricultural opportunities for fruit farms, dairy farms, mixed farms, or for very cheap farm lands in the clay belt. In planning your future and in talking to your friends keep these things in mind.

HON. J. S. DUFF,  
*Minister of Agriculture, Toronto, Ont.*

H. A. MACDONALD,  
*Director of Colonization, Toronto, Ont.*



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The O. A. C. Review is published by the "O. A. College Students' Publishing Association," O. A. College, Guelph, Canada, monthly, during the college year.

Annual subscriptions—Students, \$1.00; ex-students, in Canada, 50c; others, \$1.00; single copies, 15c; Advertising rates on application.

# To Produce the Best Crops

## SOW **O. A. C. No. 72** OATS

### "INDUSTRIAL" YELLOW RUSSIAN

### The Three Best Varieties

**O. A. C. NO. 72** is a new white oat, with very thin hull and long strong straw. Stands up well and is a splendid yielder. Price \$2.25 per bushel. Ten-bushel lots, \$2.15. Bags, 30c.

**"INDUSTRIAL"**—Is extremely hardy and very early. Specially adapted to the northern districts. Strong straw. Price \$1.50 per bushel. Ten-bushel lots, \$1.40. Bags, 30c.

**"YELLOW RUSSIAN"**—A grand new oat, standing up well in storms. In 1913 and 1914 this oat received first prize, both at Toronto and Ottawa. Price, \$1.60 per bushel. Ten-bushel lots, \$1.55. Bags, 30c.

We have an excellent stock of Wheat, White Russian; Wheat, Red Fife; Wheat, Marquis Genuine; Oats, Improved American Banner; and Spring Rye.



#### Write us for Prices.

These are reliable seeds, thoroughly tested for purity and germination.

We recommend O. A. C. No. 21 Six-Rowed Barley for freedom from rust, strength of straw and heavy yield. Price, \$1.20 per bushel. Five-bushel lots, \$1.15. Bags, 30c.

## Steele, Briggs Seed Company

Limited

TORONTO

HAMILTON

WINNIPEG

# THE O. A. C. REVIEW

"THE PROFESSION WHICH I HAVE EMBRACED REQUIRES A KNOWLEDGE OF EVERYTHING."

VOL. XXVII.

MARCH, 1915.

NO. 6.

## The Country Boys' Creed.

□ □ □

"I believe that the country which God made is more beautiful than the city which man made; the life out of doors and in touch with the earth is the natural life of man. I believe that work with nature is more inspiring than work with the most intricate machinery. I believe that the dignity of labor depends not on what you do, but how you do it; that opportunity comes to a boy on a farm as often as to a boy in the city, that life is larger and freer and happier on the farm than in the town; that my success depends not upon my location, but upon myself; not upon my dreams, but upon what I actually do; not upon luck, but upon pluck. I believe in working when you work and in playing when you play, and in giving and demanding a square deal in every act in life."

## Does Drainage Pay

By C. M. Laidlaw.

**T**HIS question appeared in large type in front of nine drainage plots in as many districts in six counties of Ontario last year.

What does it all mean? Three hundred and fifty farmers gathered one afternoon in the field where a drainage plot was being established and a drainage demonstration conducted demanding to know the how

interest spread throughout the neighborhood, and people for miles around began to watch and talk about the drainage field.

Wheat was sown in the fall. In the spring quite a marked difference was noticeable between the drained and undrained areas. On many portions of the undrained part the wheat was entirely killed, while no



and wherefor of this drainage business.

Let us look more closely at one of these plots. The notoriously wet field has not grown a crop for many years—the owner said forty. The people thought of the crops produced in the “good old days,” and said, “Can the land be made to produce more than usual?” The College said, “We think so, but will help you to find out.” And so the College ditching machine arrived; a drainage demonstration was held; one half of the field was drained and the other half left undrained. An intense in-

bare places were found on the drained area. Early in June an estimate was made of the difference between the crops on the two areas. It was found by carefully counting and measuring the height of the stalks along two feet of drill in many places on both areas that the drained area had thirty-nine stalks that were 27.8 inches high, while the undrained had 27 stalks 21.8 inches high on the same area. An advantage of 44 per cent. in number and 28 per cent. in height for the drained land.

At harvest time, much of the undrained crop seemed hardly worth



cutting, while on the drained land an excellent crop was obtained. ordinary care was taken to have the fans set right and to have the proper



Undrained Land.

On the undrained land the binder riddles and concaves in place in the bumped along over the hard, crack- threshing machine. The bushels ed ground (clay), making a great measured were carefully filled, and



Similar Land When Drained.

fuss over doing so much work in when threshing was completed a few gathering so little grain. minutes calculation showed a yield of 11½ bushels per acre for

At threshing time, more than or-

the undrained land and  $29\frac{3}{4}$  bushels per acre for the drained land. An increase of  $18\frac{1}{4}$  bushels per acre at war prices and much more straw to keep the stock comfortable and clean through the winter and to be returned to the land as manure the following year, answered the question on the sign board, "Does Drainage Pay?"

The response to this experiment is interesting. The owner has signified his intention to drain the undrained portion of the field as soon as the three years he agreed to leave it undrained have passed. A ditching machine has been purchased by an enterprising man in the neighborhood, and many tile are now in the fields ready to be put in as early as possible in the spring.

This is in brief form the story of one drainage plot. They all present to their respective neighborhoods throughout the spring, summer and fall a more complete and interesting story than the one given here.

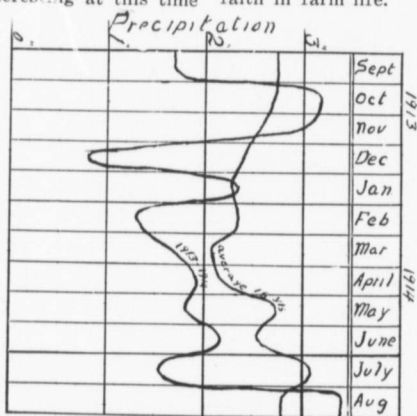
The comparison of the yields from the drained and undrained land is particularly interesting at this time

when we consider that the past season was the driest on record for Ontario. The chart given shows the precipitation of the past season compared with the average for the last fifteen years.

The deficiency in rainfall during the growing season was quite marked from April to August last year. During August the normal was exceeded. Despite the dry season, eight of the nine drainage plots showed an increase in yield due to drainage, with an average value of \$14.12. The range from the various plots was from \$8.19 to \$26.66 per acre. One plot did not show a difference in yield.

The crops grown included fall wheat, barley, oats, mixed grain and hay.

In 1915, eighteen plots will present their answer to the common question, "Does drainage pay?" They will do so not alone in terms of dollars and cents, but also in terms of ease of cultivation, earlier seeding, fewer weeds, larger crops, greater satisfaction with one's work and more faith in farm life.



Precipitation in 1913-14, Compared With Average During Last Fifteen Years.

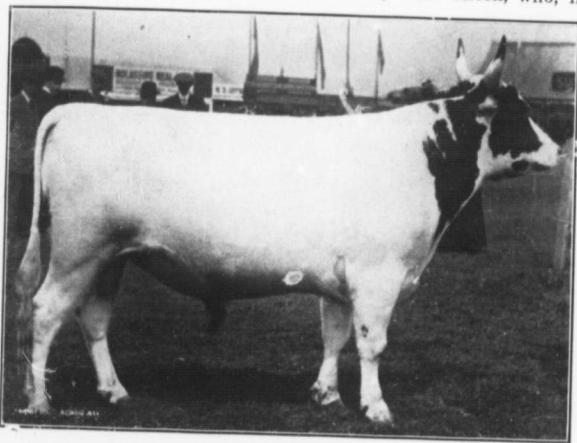
## Ayrshires at Home and Abroad

By J. H. McCulloch, '16.

A STUDY of the history of Ayrshire cattle reveals the fact that the breed has been carefully and scientifically established. It can be said that no breed has been more popular among its particular admirers, and that no dairy breed has received more attention from competent, advanced breeders; but it can also be added that no breed has been more subject

one of the recognized breeds of Scotland, and it is thought that their history as a distinct breed began some time shortly after the beginning of the past century. Up to this time they were one of the coarse varieties of cattle which formerly occupied all the southern part of Scotland.

The earliest recognition which Ayrshires received as a breed was given by Mr. Aiton, who, in 1825,



A Good Type Male Ayrshire.

to whims and fashions of breeding.

The Ayrshire of to-day, perfect in conformation and possessing so many valuable utility qualities, suggests a breed history which extends back for a lengthy period. In fact, it is generally believed that Ayrshires are one of our oldest breeds of dairy cattle.

The development of the Ayrshire breed, however, has been almost phenomenally rapid. Previous to the beginning of the nineteenth century, the Ayrshire was not mentioned as

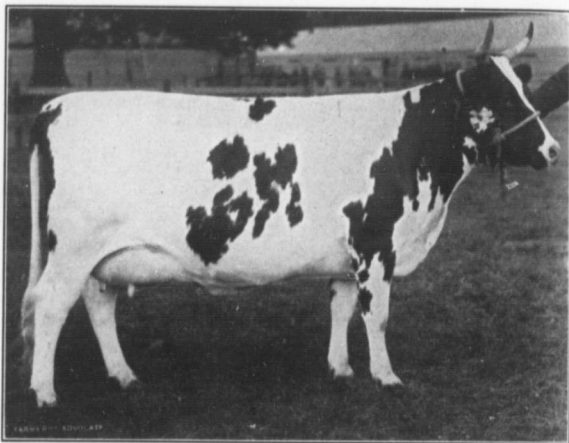
published a treatise on the dairy husbandry of Ayrshire. He described them as being puny, unshapely and not any better than the cattle of higher districts, referring, in all probability to the West Highland cattle. The Ayrshires at this time were mostly black in color and marked with white in the face, down the back and flank, and few of the cows gave more than a gallon and a half of milk per day when fresh. They were so small that the average dressed weight of mature animals

was only two hundred and eighty pounds.

At this period, cattle descended from the crosses made with the Teeswater or Holderness stock from Durham, England, had been introduced into Ayrshire, and it is also thought that the Ayrshire owes its small head and slender neck to importation, at this period, of Alderney or Jersey blood.

Agriculture in Scotland at this time was in low condition. Pasture

man bears a close relationship to productiveness. It was only in 1814 that the Highland Society first offered a premium for Ayrshires, but from that date onward the breed came rapidly into recognition, till towards the middle of the nineteenth century many important shows featured the breed. About this time fashion was beginning to be emphasized, a delicate appearance and well-set udder being the chief points aimed at. Milk production and fattening



A Good Type Female Ayrshire.

was of the poorest, and other feeds scarce, so that the conditions surrounding the foundation of the Ayrshire breed were of such a nature that only the fittest specimens could survive. This fact accounts for the hardiness so closely interwoven with every fibre of the breed.

#### The Ayrshire in Scotland.

All through the south of Scotland, and particularly in the southwest, the Ayrshire is a popular dairy cow, and popularity with a Scotch dairy-

qualities were secondary considerations. Shortly afterwards, the small teat, tight udder and upturned horns were sought after, and the showing type gradually took precedence over the utility type. A change, however, has recently come over the breeding of Ayrshires, and intelligent breeders are now laying more stress on milking qualities. In production, the herds of Scotland vary to a remarkable extent, so that an average in production is hard to ascertain. An annual production of 700 gallons of

milk, however, is a good one, and many herds do not reach this figure. For the year, the average butter fat in the milk runs from 3.5 to 3.75 per cent. The milk records conducted on the Ayrshire herds of Scotland during the last six years have embraced over 8,500 cows, and they show that an average yearly production of 700 gallons of milk, with an average of 3.75 per cent. butter fat, is common. The showing animal in Scotland is usually white in color, with brown markings on the head. Few dairies, however, feature this color, but are stocked with big, strong cows, varying in color from black and white to almost all red.

#### The Ayrshire in America.

Ayrshires were first imported into America between 1820 and 1830. The thriftiness of the breed soon became apparent, and its development on this side of the Atlantic has been rapid, Ayrshires being found all over the United States and Canada. The outstanding fault of the breed, from the American point of view, was the shortness of the teats. Milking is an unpopular pastime in America, and bigger teats are demanded, with the result that many of our best Ayrshires on this side are not now open to criticism in this respect. The extreme fashion in Ayrshires, however, is attributable in part to American importers. When the white color, the flat, faultlessly-placed udder, squarely placed teats, the straight lines and extreme neatness of the show ring Ayrshire began to be recognized in Scotland, American buyers demanded these features, and the Scotch breeders catered to their demands. The fact is simply an illustration of the in-

fluence money may have in establishing characteristics in a breed.

Competition from other breeds, however, has forced the American breeder to consider utility, and today there is a strong movement towards developing the milk flow. Ayrshires are capable of great production, yet many people fail to appreciate the fact. This is probably due to the predominance of a showing type, but it is also due to the fact that few people ever see the Ayrshire under influences which are bent towards milk production. Big, roomy cows, with a large flow of milk are not so common as the smaller sized cows with a poor milk production, and the tendency of some people is to base their opinion of the breed on the poor specimens they happen to have seen.

The productive standard in America is already at a very high mark, due chiefly to the existence of the advanced registry. Already American records of Ayrshire production have shattered those of Scotland. Numerous cows have produced over 22,000 pounds of milk in the year, with 1,080 pounds of butter. The advanced registry has shown that the average production for mature cows is 10,576 pounds of milk and 481 pounds of butter. The average production of the four-year-olds is 9,692 pounds of milk and 444 pounds of butter; that of three-year-olds is 9,002 pounds of milk and 432 pounds of butter, while the average per cent. of butter from all cows and heifers is 3.91.

A perusal of these facts bears out the statement that the Ayrshire is a producer as well as a show cow.

The conformation of the Ayrshire,

with her great fecundity, an adaptability to varying conditions of climate, feeding and care, the value of the breed from a beef pro-

ducing standpoint, crossed or uncrossed, established the fact that the breed is a farmers' one in every sense of the word.

## The Dairy Industry of Nova Scotia

By G. A. Clark, '16.

**S**OIL and climatic conditions in the Province of Nova Scotia are well suited to the dairy industry. The soil is well suited for growing all crops needed for the production of milk. The Province has excellent pastures and grows large crops of hay, turnips and plenty of coarse grains. The sea breezes temper the winter and moisten the atmosphere in summer. The stimulus of this atmosphere was helpful in developing the dairy countries of Europe. The population is inclined towards dairying since the people of Nova Scotia are descendants of the famous dairymen and dairy women of Europe,—English, Scotch, Irish, French and Germans. The blood of these dairy races runs through the veins of Nova Scotians, hence they are predisposed to favor dairying.

Markets and transportation facilities throughout the Province may be considered very fair. The advantage of obtaining cheap transportation by water and easy access for the products to all the large markets of the world, provide remarkable opportunities for securing high prices.

Nova Scotia being well adapted to dairying has made great development in the past ten years. Before this time creameries had only proved a partial success, farmers would not supply sufficient milk and cream. But 1911 saw a 30 per cent. increase in

the amount of butter manufactured in the creameries compared with 1910.

In 1913 there was an increase of 49.8 per cent. over 1912. This increase does not mean a corresponding increase in dairy products, but the factory increase was much greater than the farm dairy decrease.

This advancement has been due to the effective work of the Provincial Department of Agriculture. The officials of the department realizing the fact that possibilities for dairying were ever on the increase and believing that a well situated, well managed co-operative creamery would be the best medium to bring about the desired results. Owing to the fact that co-operative dairying had only been a partial success, the Department thought it unfair to ask farmers to organize such a company and operate their own business, the following offer was made: That if the support of 400 cows was promised and an agreement entered into by at least twenty practical farmers to organize a co-operative company and take the business out of the hands of the Department when it was made a financial success from a manufacturing standpoint, that the Department would agree to build on up-to-date principles a suitable creamery in a suitable section. This plan has met with much success, especially by one

of these creameries in Cape Breton Island. With the continued advance of this venture the future of co-operative dairying in Nova Scotia will receive a lasting impetus.

Practically all the creameries in the Province are co-operative cream gathered creameries. These all following the individual can systems for delivery of cream. The quantity of cream received at these creameries is the very best. The buttermaker has control of his product and in all cases

operative creameries, egg circle work, the handling of feeds and farmers' supplies is carried on very effectively and has proven to be of monetary value to the farmers belonging to the associations. Cow testing associations and herd improvement work has been organized and carried out effectively in these co-operative creameries.

The following is the summary of business for year ending Dec. 31st, 1913, of the largest co-operative creamery in the Province. Estimates



A Successful Nova Scotia Creamery.

effectually adheres to the rule of taking nothing but the highest grade cream.

The quality of butter manufactured under the foregoing system grades as extra No. 1 and No. 1 on Montreal and Boston markets. A large portion of the butter manufactured is consumed in the Province, but shipments are sent to the West Indies, under the special brand of "Blue Nose Butter." This brand is put up in 4-lb. tins.

Winter dairying is not followed to any great extent; a few of the larger creameries only operate during the winter months.

Through the medium of these co-

for 1914 show an increase of 30 per cent:

Total cream supplied . . .	726,728 lbs.
Total butter fat . . . . .	197,682.5 lbs.
Total butter . . . . .	229,574 lbs.
Over run . . . . .	16 per cent.
Paid patrons for cream . . .	\$55,305.06
Average price paid for butter-fat . . . . .	27.97 cts.

The future of the dairy industry in the Province of Nova Scotia points towards extensive development. With the prevailing spirit of co-operation and the policy of the Department of Agriculture to extend support to all phases of dairy work, the dairy industry will receive a great impetus.

## The Automobile on the Farm

By R. J. Griffin, '16.

**T**HE farmer of to-day is beginning to realize that the automobile on the farm is a machine of necessity and not a luxury. The fact that there are over seventeen thousand Ford cars owned by farmers of Canada proves that the farmers are beginning to realize the usefulness of a car.

The motor car lessens the distance between the farm and the market, thereby bringing the farmer in touch with the market. It is possible for him to deliver eggs and butter several times a week with no more trouble than marketing once a week with a horse. The cost of gasoline will not exceed the cost of feeding the horse for the day, providing the farm is not more than ten miles from town.

The most useful type of car for the farmer is the five-passenger touring car. It has ample room for carrying the average family and a week's supply of provisions from the store.

The lasting quality of a car depends principally upon the owner or driver. It is possible for a man to drive a car twice as many miles in a season as his neighbor and still have his machine in better condition. Driving a car over a rough road at a high rate of speed will soon make it sound like a mowing machine. The careful driver will drive at a moderate rate of speed over a rough road, and when reaches a good road he makes use of the speed, which does not interfere with the lasting quality of the machine.

The farmer's ability to operate a motor car is superior to that of the average city man. His experience with various kinds of farm machinery has made it possible for him to understand the mechanism of almost any machine. The secret of operating a machine is to have a thorough knowledge of its mechanism. If his car breaks down he will repair it himself (even if he finds it necessary to use hay wire) and then drive it to town, to the garage under its own power.

The advantages of the automobile on the farm are many. No one will deny the fact that the automobile is a time-saver. Time is money to the business man, and the modern farmer is a business man and must make the best use of his time.

Social conditions of the country could be much improved by the use of the automobile. It makes it possible for the farmer and his family to attend social functions and farmer's meetings at a much greater distance from home.

The automobile can be operated by the women folk of the farm. Many farmers do not keep a ladies' driver, therefore the motor car provides a means for them to attend women's meetings and do their shopping independent of the men.

We have heard a great deal about the rural problem. The automobile in time to come will no doubt be a great factor in keeping the boy on the farm and will help to solve this problem.



## Spring Management of the Apiary

By J. L. Dougherty, '16.

THE strength and condition of colonies in the apiary in the spring depends very largely upon the condition they were in when put up for the winter. Some of the essentials for strong, vigorous colonies in the spring are as follows:

When placed away the previous autumn, the colony should have had from twenty-five to thirty-five pounds of good honey, or an equal weight of syrup made from the best granulated sugar. The spaces between six to eight frames filled with healthy young bees with a vigorous young queen. The temperature of the surroundings throughout the winter should have been kept below forty-five degrees F., to ensure the bees remaining in a dormant state. The air should have been pure and dry.

Spring is the most critical period of the whole year for the bees. Not only the success of the approaching season, but often the existence of the colony depends upon the condition of the bees in the spring. If brood-raising was discontinued early the previous fall and the colonies went into winter quarters with a large proportion of old bees, they will be very much reduced in numbers, and in the spring the remaining old bees will die off rapidly. This condition is known as "spring dwindling." The stores may become almost exhausted before spring. The colonies should be very carefully examined, and if there are indications of shortage of food, a frame or two of sealed honey should be given to each colony requiring

it. If these are not on hand, a supply of sugar candy may be given instead.

When bees begin to fly in the spring they gather large quantities of pollen for the purpose of brood-rearing, the pollen being mainly obtained from the willow. Activity in this direction is an excellent sign, and if the colonies are stimulated by a little sugar syrup, they will be encouraged to devote their energies to brood rearing. For stimulative feeding, the syrup is made up of equal parts of granulated sugar and water. The mixture should be boiled gently and stirred until all the sugar is dissolved. Great care must be taken to avoid burning, as the slightest burning will prove injurious to the bees. The bees should be fed at night, as day feeding may induce robbing at this time of the year when food is scarce.

When the old queen is not replaced at the end of the season, the colony may become queenless during the winter, and in the spring. This state is indicated by the restlessness and buzzing of the bees, and the absence of brood. If the colony is weak it should be united with a strong colony; if it is fairly strong it may be given one or two frames containing brood from the strong colony. From this brood the queenless bees are able to raise a queen, but as there may not be any drones hatching at this time there is a possibility of the queen never becoming mated, and therefore laying infertile eggs.

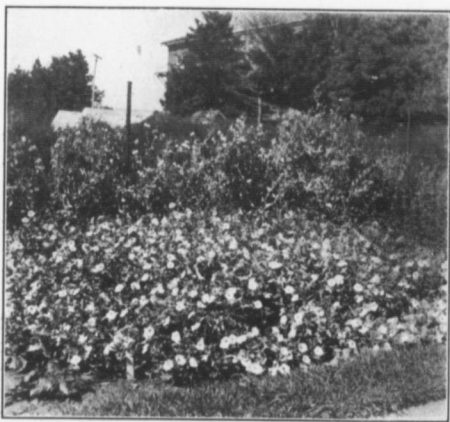
These points should be carefully looked after. When the bees are ac-

tively flying, an examination of the colony may be made with a view to finding out the state of the colony as regards brood rearing; if it is found that the brood is scattered over several frames, they should be moved to the centre of the hive. As soon as

the weather becomes warm enough any unclipped queens should be clipped. At this time also a close examination for the appearance of disease is advisable, the strength of the colony and its requirements in regard to room being noted.

## Summer Flowers for the Farm Garden from Seed

By Wm. Hunt



A Plot of Petunias.

ONE great objection to raising plants from seed sown in the open borders is that they come into flower so late in the season. Very few of them will give flowering results until well on in July if sown in the open border, while many are still later than that in producing flowers. This means that the flower beds or borders look comparatively bare and unattractive during the early summer months. To obviate and remedy this late flowering characteristic of seed-

ling plants, the seed can be sown early in the season indoors and placed in the window or in a hot bed or even in a cold frame so as to secure earlier flowering results than when the seed is sown outside in the border where the plants are to flower.

### Time to Sow Seed.

By sowing the seed indoors as mentioned about the second week in March, nice plants can be raised by the time the weather is suitable for

them to be put out of doors. Seed sown indoors even as late as the first or second week in April will flower very much in advance of those sown out of doors.

#### How to Sow Seed.

Use shallow, well drained boxes (flats) about  $2\frac{1}{2}$  or 3 inches in depth. Deep boxes are not necessary or advisable. See that some half-inch holes about six inches apart are bored through the bottom of the boxes for drainage. Empty haddie boxes from the grocers are very suitable for sowing seeds in, or for transplanting seedlings into later on, or flower pots may be used. The lower portion of the soil in the boxes to within about an inch of the top can be of rather coarse texture and fairly rich in fertilizers. The surface soil nearly an inch in depth should be sifted fine and have about one-fifth part of fine sand mixed with it. The soil should be fairly dry and pressed firm, the surface quite level and about a quarter of an inch below the top of the box when made ready to sow the seed.

#### Drill or Broadcast Sowing.

The seed can be sown in drills or be sown broadcast, the last named method being best for very fine seeds. If the seed is sown early in March it can be sown rather thickly and the seedlings transplanted as soon as the plants are large enough. If sown in drills, the bottom of the drill can be nearly covered with seed. For broadcast sowing about one-third or one-fourth part of the surface may be covered with seed. The depth the seed should be covered varies according to the size of the seed. About three times the diameter or thickness of the seed is a good general depth.

Very fine seed such as petunia should be covered with barely one-eighth of an inch of soil, just so that the seed is covered. Seeds such as Balsam, Ten-Week Stock, Zinnia and similar seeds can be covered with nearly half an inch of fine soil. When the seed is sown it should be covered carefully with fine soil, and the surface of soil pressed down slightly to prevent it from rinsing or washing easily.

#### Watering the Seed.

A very good way to water boxes of fine seed is to get a piece of rather coarse burlap (sacking) the size of the top of box. Soak it well in water first. Wring most of the water out, and lay the burlap over the box close on to the surface of the soil. Water can then be poured from a pitcher or jug on the burlap without fear of washing out the seed. The water must be allowed to drain into the soil before the burlap is taken off. Unless the water is put on very hastily and carelessly, the wet burlap will prevent rinsing altogether. A fine sprinkling watering can may also be used. One of the best appliances for watering fine seeds is the "Scollays Rubber Sprinkler," with angle nozzle. This last named can be secured at seed stores for \$1.20, and is very useful for spraying plants with water or insecticides. The soil that seeds are sown in must be kept moist and shaded from hot sun until the plants are well up and growing. A temperature of about 65 degrees Fahr. will suit most seeds. As much air as possible must be given the seedlings when started to prevent "damping off." This "damping off" is often caused by too close, humid atmosphere, careless watering, and imperfect drainage. To prevent this, give more ventilation and a cooler

temperature. The plants die down completely when attacked. The remedy is to remove the diseased plants and dust the remainder with dry, finely-powdered flour of sulphur, and move the box into a cooler place, and give them more air and less water.

### Transplanting.

When four or five leaves have de-

veloped, the seedlings should be transplanted about 1½ inches apart into fairly rich soil, in flat, shallow boxes, about 3 inches deep. The plants can be kept indoors or in the hot beds, as the case may be until about the middle of May.



A Vase of *Peutestemon Grandiflora*.

veloped, the seedlings should be transplanted about 1½ inches apart into fairly rich soil, in flat, shallow boxes, about 3 inches deep. The plants can be kept indoors or in the hot beds, as the case may be until about the middle of May.

### Hardening Off.

The process of hardening off

in May in a position where they can be shaded from hot sun and be protected during cold, chilly nights. They will thus become gradually hardened to outdoor conditions before being planted out in the borders.

### Planting Out.

As a rule, the hardiest plants, such as Asters, etc., can be set out

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in the border the last week in May or the first week in June. A few of the more tender kinds, such as Ricinus (Castor Oil Plant), Balsams, and the tropical climber Cobea Scandens and similar very tender plants are best not planted out until about the first or second week in June, or until the ground has got well warmed up. The seeds of this very pretty and fast-growing climber, Cobea Scandens, must be started indoors to secure good results. The seed is best set on its edge when sowing, and the seeds covered with about one-quarter of an inch of fine soil. If grown properly and planted out in good, rich soil, one or two plants will cover twenty square feet of trellis or more in a season. It is best to sow the seed of other climbers outside where they are to grow, as most climbing plants do not transplant readily. Ten-week Stock and Nasturtiums also do not transplant well. The tall growing plants should be set about 2 to 3 feet apart, the medium height plants about 10 inches apart and the dwarf growing about 6 to 8 inches apart. Plant out in dull, showery weather if possible.

The following is a list of climbing plants, all of which had best be sown out in the open ground about the second week in May, except the Cobea Scandens. This last named must be sown early indoors, as before mentioned. The Sweet Peas must be sown as early as possible out of doors in spring. (See notes on Sweet Peas.)

#### Climbers.

Cobea Scandens, Sweet Peas (see Hints on Sweet Pea Culture), nasturtiums (tall), Convolvulus (Morning Glory), Humulus Japonica (Jap-

anese Hop), Echinocystis Lobata (Wild Cucumber).

#### Tall Plants, 3 to 6 Feet.

Racinus (Castor Oil Bean), Cosmos, Sunflowers. The Ricinus and Cosmos must be sown early indoors to secure the best results.

#### Medium Height Plants, 1 to 3 Feet.

Petunia, Verbena, Antirrhinum (Snapdragon), Pentstemon, Salvia. These also must be sown early indoors to secure early flowers.

Other medium height plants are: Astors (Comet and Late Branching), Ten-Week Stocks, Phlox Drummondii, Balsom, Coreopsis, Celosia Plummosus (Ostrich Feather), Zinnia, Marigold (African and French), Scabiosa, Salpiglossis, Schizanthus (Butterfly Flowers), and other kinds of annuals if required. All of these named can be started indoors, as stated, to secure early flowers.

#### Dwarf Edging Plants, 6 to 10 Inches.

Ageratum, Lobelia, Sweet Alysum, Candytuft, Mignonette, Virginian Stock and Portulacco.

The two first-named must be sown early indoors to get good results, the others may be sown out of doors to advantage. The Portulacca is especially useful for sowing out of doors in a small flower bed by itself or as an edging plant. It delights in rather light soil and a hot, sunny place, and will grow splendidly in a hot, sunny spot where few other plants will grow. The seed is best sown broadcast on fine soil and raked in very lightly, so as to barely cover it. About the second week in May is early enough to sow Portulacca seed. The plants should be thinned to from four to six inches apart when large enough.

### Sowing Outdoors.

All of the plants named, except those specially noted, may be sown out of doors about the first or second week in May for later flowering. They like a fairly rich soil and an open, sunny position. Very few of the plants named will succeed in shady positions. In sowing out of doors, they may be sown in rows or in plots—four or five rows for each plot—or may be sown in single rows or in clumps or groups dotted here and there. The plants should be

very well. Close up to a building or near to a close board fence facing the south is not a good place for them. An east or west exposure, close to a fence, is not so objectional, except, perhaps, a direct northern exposure. Close to an open wire or trellis fence is not objectionable.

**2. Soil.**—A deep, fairly rich loamy soil is best. If the ground is gravelly or heavy clay, dig a trench the length required 12 to 15 inches deep and about 10 inches wide. Place about 2 inches in depth of well-



A Bed of Verbenas From Seed.

thinned to about the same distance apart as when planted out.

### Sweet Peas.

No flower garden should be without a row of Sweet Peas. They are so useful for cut-flower purposes as well as for garden decoration. The following short hints on their culture may be useful.

#### Hints on Growing Sweets Peas.

**1. Location.**—An open, sunny position in the garden suits them

rotted barnyard manure or cow manure in the bottom of the trench, then fill the trench up with well-enriched loamy soil. Deep digging is necessary for Sweet Peas, even in good soil. Never sow Sweet Peas twice in succession in the same soil; a part of the soil at least should be renewed every year.

**3. When to Sow.**—Sow as early in the spring as the ground can be worked. The seed may be soaked in lukewarm water before sowing for

three or four hours, but it is not really necessary to do this.

4. **How to Sow.**—Make a drill about two inches in depth. Sow the seed about two inches apart. Cover with two inches of fine soil. (The Spencer type is the best kind to sow.)

5. **Thinning.**—Thin the plants when about six inches in height to three to four inches apart.

6. **Support.**—Wide meshed chicken wire five feet high; brushwood or coarse twine may be used for support. The wire support should be placed in position in the fall before or when the seed is sown.

7. **Watering.**—Water thoroughly in very dry weather. Draw a drill a few inches deep and about four inches from the row on each side. Pour water into these until the ground is thoroughly soaked. Water-

ing in this way once every two weeks is far more beneficial than frequent surface watering. Sprinkle the foliage with water under pressure from a fine sprinkler every day in hot, dry weather, to keep down insects, Green Aphis and Red Spider. Sprinkle the under side of foliage especially. Tobacco and soap solutions are also good remedies to keep down these insects.

**Picking Bloom.**—Keep all the sprays of bloom picked off every second day to prevent seed from forming. If seed is allowed to form, the bloom will soon become inferior and the flowering season of short duration.

**Fertilizers.**—A watering once or twice with a liquid manure solution toward the end of August will help to keep the plants vigorous and productive late in the season.

## The Canadian Produce Association

By J. P. Hales, '15.

THE third annual meeting of "The Canadian Produce Association" was held in the new poultry building of the Ontario Agricultural College on January 11th and 12th. This organization is composed chiefly of produce and commission men from the larger cities and towns.

The main object of the association is the improvement of the system governing the distribution of produce to the consumers of Canada. The members realize that quality and appearance are important factors governing the sale of an article to a consumer. This was particularly noticeable from the phase of the subject touched upon by the various speakers.

The dealers realize as no one else how perishable a product an egg is, and their convention of necessity brings up for discussion such questions as: "Loss Off Buying," "Rapid Transportation," "Good and Clean Cases," and "Quick Collections."

Payment for eggs and poultry on a quality basis was also fully dealt with. The system of buying eggs on a "loss off" basis, or paying only for eggs fit for food, has been in use for two seasons. At the present time, practically all dealers are buying by this system.

The adoption of a simple standard as to grades of eggs must of necessity precede the buying of eggs according to quality. The standard

grades of fresh-gathered agreed upon and adopted were:

Specials—New-laid, weighing over 45 pounds net to the case.

Extras—New-Laid, weighing 45 pounds net to the case.

First—New-Laid, weighing 43 pounds net to the case, and other eggs of good quality, but slightly sunken air cells.

Seconds—All other eggs fit for food.

The present method of transporting eggs is a serious problem. No special attention is given to careful handling. They are loaded in dusty cars with heavier freight, left standing at junction points, and by the time they reach their destination are at least a week old. This method of treatment in the summer months is a serious drawback to the securing of a first-quality article.

Dr. Mary Pennington, of the United States Department of Agriculture, gave a very interesting illustrated address on, "The Packing and Shipping of a Carload of Eggs." Dr. Pennington dealt thoroughly with various phases of the question. The need for more careful packing in the cases, the improper methods of storing the cases in the car and the poor refrigeration were cited as the reasons why so many accidents happened to eggs in transit. H. A. McAleer, B. S. A., also of the United States Department of Agriculture, gave a demonstration of the correct methods of packing eggs in cases and storing them in the cars.

The Dominion Government's exhibit illustrated the best methods of handling and collecting eggs in the rural districts.

## A Glimpse of Our New Rural School

By J. C. Fuller, '17.

FOR many of us it is a long time to look back to our school days. Some one has said "the happiest days" of our lives. Well can we remember the pleasant days spent in the pretty, new, white brick building, set well back in the neat, shady school yard.

It was behind the desk instead of in front of it in one of these schools that I found myself one September morning, fresh from the Normal School, and with one desire above all others—to teach agriculture.

Teaching agriculture at that time was thought by many to consist of having a school garden, keeping it free from weeds, and making a fine showing of flowers, vegetables and

grain grown by the pupils. It was September, as I have said. We could do no gardening, and well for us, for it was here we started in the right way planning what we were going to do the following spring.

But, before going any farther, let me tell you about the boys and girls of that school. You know what you hear about children or people after you have been engaged to go and work with them? These children were all that and more. They were vicious and had even stoned people passing by, so the story ran.

But to come back to school; the preceding spring a garden had been plowed, several native trees planted, and it appeared in the fall an ideal



place for a second-year student to secure a weed seed and a weed collection. Then one day a kind neighbor brought his scuffler and cleared away the wilderness. Later in the fall the garden was well manured and plowed.

One of the first formal lessons was in Entomology, but, of course, at that time we hadn't heard of that unpronounceable study. However, two caterpillars were found; one on the milkweed and the other on the carrot, and both were confined in a small chalk box by putting a pane or glass across the opening. When these caterpillars changed into chrysalis form, and thence into butterflies, under the eyes of the pupils, everyone was delighted, and from that time interest in agriculture was secured, for other wonderful things might be going on which they might miss.

With the winter months came the study of farm animals, care of implements and preparation for spring work on the home farm. As time passed, a broader outlook was taken of the subject, and we found that what we needed was some training

to develop the citizen. Debates were held on Friday afternoons, presided over by a boy chairman. Music and singing formed part of the programme, for we enjoyed the rare treat of having a fine new piano in the school.

One Friday afternoon we gathered our band together and were taken in a big farm sleigh to the neighboring school, two miles away. There we were entertained by the scholars of that school. You will say, all this is unusual, but consider what it meant to the boys and girls; it will remain a bright event for them to look back upon, and be of more value to them than probably a whole week's plugging for examinations.

This is just a short account of the teaching of agriculture in its broadest sense. True, it is not following the course of study, to the letter; but the outline of the Department of Education when not understood has proven a stumbling block to many teachers.

To a teacher who knows and appreciates the country, let me recommend agriculture as a subject to win the boys and girls and give them a desire for better things in country life.



## The Potato Industry in Ontario

*By Howard Curran, '16.*

ONTARIO'S potato crop is increasing yearly, and during the past five years has increased by over one-half. This should prove welcome news to the advocates of more and better potato production in Ontario. Compared with the other provinces, Ontario produces over twenty-two and a half million bushels, Quebec three-quarters as many, the three Maritime Provinces together produce only slightly more than Ontario, and the three western provinces about the same amount. Thus we see that Ontario produces about one-fourth of the total potato crop of Canada.

All this is very well, and no doubt the average farmer of this Province would be convinced from these figures that we are doing well. The fly in the ointment is, however, that potatoes yield only 143 bushels per acre in Ontario as compared with an average yield of 298 bushels per acre in Nova Scotia, according to the latest figures obtainable, viz., 1912. British Columbia, Manitoba, Alberta and Saskatchewan show the highest average yield per acre next to Nova Scotia; Ontario comes next, with Quebec last. Thus we see that we can make improvements in our potato crop in this way. This comparison of yields of the different Provinces along with the following facts, should give Ontario producers some basis upon which to better their returns from the production of potatoes.

While this Province produces more than one-quarter of the Dominion's tuber crop, we find that potatoes from the Maritime Provinces are shipped

into Ontario and sold on Ontario markets at a higher price than can be obtained for potatoes grown in our own Province. It seems a strange thing that potatoes can be grown in such a distant Province and shipped to us by rail, and still obtain for the producer a handsome profit, and what is more, outsell the potatoes grown here. The secret of this is due to two factors. One is that the product shipped is far more uniform in size, and therefore better appearing than our own, and the other is that the producers in those Provinces have taken pains to discover what kind of potatoes are most in demand here and have taken means to supply that demand. In other words, they have studied our market, and know more about market conditions in Ontario than the average Ontario farmer does.

To obtain uniformity and thus increase the value of their crop the producers in the Maritime Provinces grow a large amount of one kind of potatoes in a section, and a carload of potatoes of any one variety can be quite easily obtained from a small section, and thus shipping is facilitated. When placed on the market the potatoes are uniform in appearance and attract the buyer much more strongly than a carload containing a great many varieties, and of varying sizes. On the other hand, there are very few sections in Ontario where a carload of potatoes of any single variety could be obtained. The result is that large buyers go elsewhere and get their supply. As an aid in obtaining an uniform product, the po-

tatoes are sorted according to size, in the Maritime Provinces. This is done largely by machinery and is a very simple process.

The reason it is difficult to obtain a carload of one variety in sections of Ontario is largely due to the great variety of potatoes produced. There seemed to be a tendency until recently for every farmer to have a different variety from his neighbor, and the result was a mixed lot of potatoes. The results obtained were also usually very poor as a very large number of varieties of an inferior nature were grown, but these are steadily being weeded out at the present time. It would appear that the increase in production in Ontario in 1912 over the previous year, of six and one half million bushels, on practically the same acreage was due largely to the growing of better varieties, along with better tillage.

The type of potato demanded by the Ontario market is a large sized, white potato, free from rot or scab, clean in appearance, shallow eyed and dry.

In order to make a success of potato growing the Ontario farmer must study the conditions of the market, and practice the best methods of tillage and selection of varieties, and study the market. He must realize the obstacles which confront him, and combat them. He must grow the

variety best suited to his district, conforming as closely as possible to the market demand. A large yield is necessary for best results, and this is obtained by good cultivation, spraying, and the growing of varieties which have been tested and are known to be good yielders, and resistant to diseases, as scab and rot. In the control of scab the formalin treatment is satisfactory, and spraying with bordeaux at the proper time controls rot and blights. Commercial fertilizers are used to advantage, and if properly applied, give excellent returns.

In summing up the farmer has the following points especially to keep in mind: A large yielding variety, conforming to market requirements should be grown. All the tillage possible should be given the crop as the yield is proportional to the work expended on it. The market should be studied, and the potatoes sold at the best time and a uniform article should be produced. To attain this it is best to grow a variety which has given satisfaction to, and is grown by the farmers in the district. The varieties which gave the best results at the Ontario Agricultural College, in the year 1913, were the following: Early Eureka, Early Fortune, Irish Cups, Roger's Rose and American Wonder, Davies' Warrior, Empire State, and Rural New Yorker No. 2.

## The Tracks in the Snow

**T**O the uninitiated all tracks in the wood look alike. They are simply so many marks in the snow. Was it a fox? Was it a rabbit? Was it a squirrel? They see no way of answering the question. And yet the distinctions are easy. Foxes are not plentiful, and it takes a fine eye to distinguish their footprints from those of a dog; but as for the rest, there can be no doubt. The marks of the skunk, leading from the burrow under the stump, are diagonally placed, and so the simple arrangement of the footprints in itself decides the question. The footprints of the mink, leading along the edge of the stream or pond, are clean-cut and straight.

Those of the rabbit, passing from brush-heap to brush-heap, cannot be mistaken for any others. The two small marks made by the front feet lie close together, and directly in front of them, and some inches apart are the large, rough indentations of the heavy hind feet. The position of these marks tells the story of the way the rabbit runs. The tracks of the squirrels resemble those of kittens, and those of the deer mice on the surface of the snow are more like the delicate marks of the foot of a bird. The light fairy pencillings, often deepening into a faint track from stump to stump, are the tracks of the little shrews, the diminutive insect-eating mice of the woods.

Most of the smaller species of wild animals found in the region of the Great Lakes are active throughout the winter. Our two common kinds of field mice, the deer mouse, which lives principally in the woods, and the

meadow mouse, which lives in the fields, both lay in winter supplies of grain, beech nuts, etc., and are comfortably provided for. The meadow mouse buries his supply in a hole in the ground, but the deer mouse is a great climber and often makes use of holes in trees, cavities in stumps, etc., for his storehouses.

I remember once pulling a rotten stump to pieces in midwinter and finding a little wood-mouse in the middle of it, with its nest of leaves and grass and small store of cleanly-shelled beech nuts for winter provision, and a friend of mine once came across a bird's nest in a small sapling, a chipping sparrow's I think, neatly roofed over and having for its winter tenant a little deer mouse, who had made himself snug and warm in these borrowed winter quarters.

After the snow has fallen, it is seldom that the meadow-mice are seen. They find the deep snow a great protection from their enemies, the owls, and they are able to move about freely through the grass beneath it without fear of detection. When the snow is beginning to disappear in March or April, you cannot fail to observe their network of runways in the long grass of the edge of the field. Many of the pathways seem to be grand highways used by the whole community, while others are faintly-shaded tracks that appear to be seldom used. Here is a well-worn path that leads to the store-house under the ground, and this grand avenue with its score of side tracks and branches runs down to the bank of the little rivulet where for a few feet there is a well-beaten

though dangerous path in the open to the edge of the stream.

Of the squirrels the chipmunk is the most provident. His storehouse is deep underground, and all the autumn long he is busy carrying down supplies for the winter. Early in November he retires to his well-stocked nest, and lives throughout the long winter on the fruit of his labors not reappearing again above ground until the following spring. Strangely enough, however, only one chipmunk occupies each burrow, and the winter is passed in unbroken solitude. The red squirrel is also very active in the fall, and lays by a good supply of nuts in various hiding-places, chiefly in hollow trees. He is hardy, however, and in spite of his provident habits is out in all sorts of winter air.

Most of the squirrel tracks that are seen on the snow are made by the red squirrel. He does not confine himself to one tree, but on a bright winter morning you may find him, with his usual pertness and inquisitiveness, making the round of the woods from branch to branch, or across the open from trunk to trunk. Around the foot of his home tree, you may sometimes find evidences of a winter feast in the form of walnut or butternut shells, the sides of which have been painfully chiselled out in order to extract the kernel. How much more fortunate is the black squirrel, to whom a walnut feast means only the chiselling of a small hole and the breaking of the shell in pieces with his teeth. The black (or gray) squirrel lays by no regular supply for the winter. He buries a few nuts separately in the ground, but as this is all the provision that he makes, he sometimes fares badly when the cold weather comes.

The raccoon, the skunk, the woodchuck, the flying squirrel and the bat all go into hibernation with the approach of winter. The bat hangs himself up on a single claw, head downwards in some hollow tree, or tower; the flying squirrel is gregarious, as is also the bat, and a whole company occupies the same dwelling; the woodchuck governs his winter sleep by the equinoxes; while the skunk, on the other hand, is late in retiring to his winter quarters, and re-appears again in February. The raccoon is an uneasy sleeper, and on a mild winter day he sometimes breaks all the known rules of hibernation by getting up from his sleep, and going abroad for a fresh supply of food and a breath of fresh winter air.

The cottontail rabbit is active throughout the winter, and lives for the most part on young shoots and twigs, or on withered grass and leaves. The cottontail, it should be noted, does not change color, as he is sometimes supposed to do, but his next of kin, the northern hare, changes his brown coat for a white fur covering, with the coming of the first winter snow. The cottontail is comparatively safe in the summer, but in winter comes his season of hardship and anxiety. The undergrowth and shrubbery no longer afford him shelter, and he is forced to take refuge in brush piles or in the deserted ground holes and burrows of other animals, whither he can be readily tracked by his foot-prints in the snow.

One of the common winter past-times of the country or village boy is a rabbit hunt, and on the right kind of a winter afternoon for tracking rabbits you are almost certain somewhere in your walk to meet one of these hunting parties with dog, gun

and ferret in search of their luckless game. In the open woods and coppices where underbrush is plentiful, rabbit tracks are not hard to find. When a track is discovered, it is examined to see if it is fresh, and to see in what direction it is leading. When it is followed up, it leads to a stump, a hollow tree, a log, and finally to one of the numerous brush piles.

But it emerges again on the other side, to be followed up once more until a second and larger brush pile is finally reached. Here there is no outgoing track and one of the small boys is set to work to tramp and shake the brush pile vigorously from end to end, while the others, gun in hand, stand ready for the rush of the rabbit across the open for safety.

"There he goes! There he goes!" the shout goes up from all sides as the streak of brown and white shoots from under the middle of the pile and plunges into the coppice, followed by the dog and the small boy, who in the excitement of the moment has forgotten himself so far as to join in the chase. But the gunner is skilled and a well-directed shot brings down the cotton-tail in mid flight before the friendly shelter is reached—and the dog and small boy, as if by a miracle, escape unharmed.

When rabbit number one is secured the party move on, and a fresh track is before long discovered. After many tortuous windings and doublings it leads them finally across the clearing to a deserted woodchuck burrow in which the rabbit is no doubt in hiding. The ferret—a species of weasel used for hunting purposes—is now produced from the bag and sent down into the ground hole, out of which he soon succeeds in routing the

rabbit. This time one of the members of the party who wishes to secure a cotton tail alive, places his hands in front of the hole and seizes him as he emerges from the burrow. His mournful screeching cry is soon silenced, and he is seized firmly by the hind legs and transferred without delay to the bag containing the game.

And so the afternoon wears on in the passage from wood to wood and burrow to burrow. Sometimes the dog is allowed to give chase, but it is generally of more service in tracking the rabbit up to its hiding place and in proving whether the hunters are on a true or a false trail—for the latter sometimes happens. I remember one occasion in particular when one of the boys discovered fresh tracks near a brush pile at the edge of a thick wood. The pile was tramped and shaken in vain. Finally the ferret was put in, but to their dismay it failed to reappear. The brush pile was at last torn to pieces and it was discovered that it covered a stump under which there was a deep burrow. In this burrow the ferret was evidently working, and from the series of subterranean growls which came up from the burrow from time to time they knew that the occupant of the hole was not a rabbit. What could it be? One of the boys put his head down close to the hole, but drew it back hastily. "Whew! a skunk!" "No" replied one of the older boys, "it aint no skunk. It's the ferret. He acts like that when he gets mad." And then I remembered that all the weasel family carry scent bags like the skunk, though they do not generally make themselves so obnoxious. What could it be? It could not be a wood-

chuck, for they sleep the long winter through; and a raccoon would never be guilty of being found in such a hole. But just then the growling and rumbling became perceptibly louder, and a moment later out shot a

starved, skinny black cat, while the boys around the hole stood back in open-mouthed astonishment and did not so much as even chance a shot at the retreating intruder.

## The Norfolk County Short Course

By J. L. Foot.

THE Six Weeks Course in Agriculture at Port Rowan commenced on Monday, January 11th, with 10 bright students enrolled; these attended regularly throughout the course. Most of the students drove in each morning, and returned home in time for the chores in the evening. The course, therefore, suited the convenience of the young men in this section which had heretofore not been given much attention. The attendance was not as large as we had hoped, but was fairly good when it is considered how comparatively few young men there are on the farms in this district, and also that Port Rowan being situated on Lake Erie is, as it were, one-sided. The Representative and I prepared a time table, dividing the work so that each treated the subjects with which he was most conversant. We arranged to have lectures in the morning and practical work in the afternoon. Lantern slides helped to illustrate some of the lecture work. The practical work included milk testing, weed and weed seed identification, seed judging and stock judging. We visited a number of farms in the district to get the best material possible for judging horses, cattle, sheep and swine. A schedule of outside speakers was provided by the Department at Toronto and proved a very desirable feature of the course. The schedule included

as speakers, well known experts on seed selection, fruit growing, apple packing, vegetable growing, plant diseases, beef and dairy cattle, sheep, swine, poultry, bees, horse judging and veterinary science. Another feature of the course was to give the boys practice in platform work, speeches, readings and debates. It was difficult to get some of them on the platform at first, but by the end of the course they had lost most of this nervousness. To foster the interest awakened at the course we organized a Junior Farmers' Improvement Association. The boys took hold of the idea with enthusiasm and although the number is small we believe it will be a live association.

On Friday, Feb. 19th, we brought the course to a fitting conclusion, with a banquet, which was a success in every way. The guests were mostly farmers who had supplied stock for judging purposes. The speeches from the boys were most gratifying and showed that they had certainly attended the course to some purpose. We feel that we have at least awakened in them an inquiring spirit which will lead them to find out the best varieties to grow and adopt the best means of growing these varieties. In addition to this we have made a personal friend of each and every member of the class.

## A Summary of the White Paper of England

By Mrs. Geo. Smith.

THE "White Paper of England" is the name given to the pamphlet issued by the British Foreign Office on August 3rd, 1914, in which is made public without comment the full official content of all 159 documents and dispatches, exchanged between Sir Edward Grey and the British Ambassadors on the Continent, within the fortnight, immediately preceding England's declaration of war against Germany. Within the same cover, the *New York Times* publishes a copy of the "White Paper of Germany." It is interesting to note that in the 37 closely printed pages of the latter document, events are included only up to August 1st and no mention is made of Belgium or negotiations with the Government of Great Britain after that date. It gives only a portion of the correspondence emanating from the German Government, and the text of the telegrams, which passed between the Kaiser and the Czar. Unlike the British "White Paper," the German document purports to be a reasoned historical memorial of the causes of the war, dealing especially with the relations between Serbia and Austria prior to and after the assassination of the Archduke Franz Ferdinand and his wife, the Duchess of Hohenberg and an analysis of that portion of the correspondence, the text of which is not printed in full.

"The White Paper of England" might be divided into five sections, viz.:

1—Efforts made by Sir Edward Grey to extend the time limit (48

hours) set by Austria for Serbia's reply to her demands.

2—Efforts made by Sir Edward Grey to secure a conference of representatives of Germany, Italy, France and England in order to mediate between Austria-Hungary and Serbia and to secure a moderation of the demands made upon Serbia by the dual Monarchy.

3—Efforts to bring Russia and Vienna together in a friendly discussion of the Balkan situation in order to avert a general European outbreak. At the same time conversations with Germany, France and Russia were carried on relative to England's stand, should these countries become involved.

4—Correspondence regarding Germany's demand upon Russia for demobilization and England's attitude in case France became involved.

5—Correspondence relative to the neutrality of Belgium and the detention of British shipping in German ports.

With regard to Serbia, in the first section of the correspondence, Sir Edward Grey makes it quite clear that while he considered the placing of so short a time limit for the Serbian reply a matter to be deeply regretted, while he had never before seen any one state address an independent state in terms so peremptory and unusual, so much so, that they were impossible of acceptance by any independent state, and while he thought Austria ought not to have dictated the terms of Serbia's reply, yet for no reason whatever



would the British Government concern itself with the merits of the dispute between these two countries or with any of the consequences that might arise from such a dispute unless the peace of Europe was threatened. To him the thought that any of the great powers might be drawn into a war by Serbia was detestable. One of the most remarkable admissions made by the German Government in its "White Paper" relative to this stage of the proceedings follows a direct charge made against Russia for intermeddling in Balkan politics and of organizing a new Balkan League whose sole aim was the subversion of the "Austro-Hungarian dynasty." In view of these circumstances Austria HAD TO ADMIT that it would not be consistent, either with the dignity of self-preservation of the monarchy, to look on longer at the operations on the other side of the border without taking action. The Austro-Hungarian Government advised us of this view and asked our opinion in the matter. We were able to assure our ally, most heartily, of our agreement with her view of the situation and to assure her that any action that she might consider necessary to take in order to put an end to the movement in Serbia directed against the existence of Austria-Hungary against Serbia would bring Russia into the question and might draw us into a war in accordance with our duties as an ally."

At the request of the Servian Prime Minister, Sir Edward Grey began the second section of the correspondence to secure a conference of the four Great Powers not immediately concerned in the issue and if possible a moderation in Austria's demands. France, Italy and England agreed to send representatives to such a con-

ference. Germany's comment upon this effort is illuminating. "On the 26th of July Sir Edward Grey had suggested that the differences between Austria-Hungary and Serbia be laid before a conference of Ambassadors of Germany, France and Italy, with himself presiding over the sessions. To this suggestion, we replied that while we approved his tender we could not take part in such a conference because we could not call upon Austria to appear before a European court in her controversy with Serbia. France agreed to Sir Edward's proposal, but Austria, as was to be expected, held herself aloof."

Efforts were now directed to bring Russia and Austria together in a friendly discussion of the situation in order to avert a general European war. On July 24th Great Britain was informed that any recourse to force on the part of Austria towards Serbia, would bring Russia to Serbia's assistance. On the same day Russia was told that Great Britain did not consider itself under any obligation to proclaim its solidarity with Russia and France in event of these two powers being drawn into the struggle. All representations made by France and Russia to have Great Britain join them failed. The British Ambassador was instructed to inform the German Government that if it would undertake to make proposals for an adjustment of the difficulty between Russia and Austria-Hungary, and that if the Russian Government unreasonably rejected such proposals "His Majesty's Government will have nothing more to do with the consequences." At the same time Germany was informed that an invasion of France would involve Great Britain.

The outstanding feature of the

third section of the correspondence is the German assurance that there was no intention on the part of St. Petersburg to exchange views with Vienna and until such did take place the outside Powers should do nothing. On the same day M. Saznof in a letter to the Russian Ambassador at London stated that conversations with the Austro-Hungarian Ambassador had begun which he hoped would prove favorable, although he had received no reply to his proposal to revise the note between the Austrian and Servian Cabinets. "If," he says, "the direct explanations of the Vienna Cabinet were to prove impossible, I am ready to accept the British proposals of a kind that would bring about a favorable solution of the conflict." On the following day he writes to the same Ambassador: "My interview with the German Ambassador confirms my impressions that Germany is, if anything, in favor of the uncompromising attitude adopted by Austria. The Berlin Cabinet who could have prevented the whole of the crisis developing appears to be effecting no influence whatever. This attitude of the German Government is most alarming." On the same day the Minister of Foreign Affairs for Austria when urged in the "most friendly" manner by the Russian Ambassador to find some solution of the situation that would consolidate the good relations between Austro-Hungary and Russia and at the same time give to the Austro-Hungarian Monarchy genuine guarantees for its future relations with Servia, replied that he was well aware of the gravity of the situation and of the advantage of a frank explanation with the St. Petersburg Cabinet, but his Government could no longer recede or enter into any dis-

cussion about the terms of the Austrian-Hungarian notes.

There was every indication from the strong position taken by Sir Edward Grey that Austria and Germany counted on the neutrality of Great Britain. A bid for that neutrality was made. The German Chancellor went so far as to suggest that if Germany undertook not to occupy French territory after a successful war, Great Britain should not come to France's assistance, even though Germany gave no promise as to French colonies. This elicited from Sir Edward Grey the reply that it would be a disgrace for us to make this bargain with Germany at the expense of France—a disgrace from which the good name of this country would never recover.

In the fourth division of the correspondence, Sir Edward Grey outlined to France the position of England should France be drawn into a war with Germany. In the question of Morocco a few years ago, when Germany, in an attempt to crush France, tried to fasten a quarrel on France, on a question that was the subject of a special agreement between England and France, English public opinion at once rallied to the side of France. In the present case the question of supremacy in the Balkans was of no concern to England. Should France become involved, the case would have to be carefully considered. France would then be drawn into a quarrel which was not hers, but in which, owing to her alliance, her honor and interest obliged her to engage. Should the question become one of the hegemony of Europe, England would then decide what was necessary for her to do.

The last part of the "White Paper" deals with the position of Belgium

in the event of war between Germany and France. Both the Government of Germany and France were asked by Great Britain not to violate the neutrality of Belgium so long as no other power violated it. England was informed that the German Emperor and Chancellor must be consulted before any reply to the question of Belgium's neutrality could be given, that any reply that might be made could not but disclose a certain amount of Germany's plan of campaign, and it is doubtful if they would return any answer at all. The French Government, on the contrary, sent the following telegram. "The French Government are resolved to respect the neutrality of Belgium, and it would only be in the event of some other power violating that neutrality that France might find herself under the necessity, in order to assure defence of her own security, to act otherwise. This assurance was also given to the King of Belgium and the Belgian ministry of foreign affairs.

On August 1st, England was informed that British merchant shipping was forcibly detained at Hamburg; the next day that 100 tons of sugar was compulsorily unloaded from the British steamer *Sappia*, and on the following day that other British merchantmen were not allowed to leave Hamburg. On August 4th, the British ambassador from Berlin was instructed to demand of the German Government: (1) that British shipping be immediately released; (2) that a satisfactory engagement regarding the maintenance of the neutrality of Belgium be forthcoming before nine o'clock that night. If such was not forthcoming, the British ambassador was to ask for his passports, and was to inform the German Government that England would take steps in her power to uphold the neutrality of Belgium and the observance of a treaty to which Germany was as much a party as herself.

Mrs. G. H. Smith,  
Patriotic Journal.

## Reminiscences of Memorable Excursions from the Edinburgh Agricultural College

By Norman D. Dow, '16.

**CANADA**—the very word suggests broad acres, but even in old Scotland there are farms of no mean extent. Near the most easterly part of Scotland, near the County of East Lothian, are the farms of East Barns and Barneyhill. They cover an area of nearly 2,500 acres, and their tenant is that staunch champion of the interests of the Scottish farmer, Harry Hope, M. P. Land must produce three rents

in Scotland; one for the landlord, one for the labor and one for the farmer himself. On this stretch of land the landlord's rent is \$25.00 per acre per annum, and it is not difficult to see why every part of land must be cultivated to the fullest extent. It is well worth a long journey to see these farms, their well-kept barns and trim cottages, the great herd of fattening steers changing feeding stuffs into beef and into fertilizer to

grow potatoes. Wheat, oats, barley and hay are grown in rotation, but the potato is the staple crop. Such is the reputation of East Lothian red soil potatoes that they will bring \$10 to \$15 per ton on the London market over the price paid for other kinds. But the most memorable features of the farm are in the fields. Bordered by straight, stone walls, they appear clean and neat; not a weed is visible, and the land is cultivated to within six inches of the walls. The red-brown soil, edged with narrow strips of green, the March sunshine on the waves to the eastward and the smell of the salt sea air combine to make a picture that is altogether inefacable.

Seventy-five men, dressed to face the weather, climb a steep hillside in the face of a storm of snow and sleet. At the head of the party is that sturdy Berwickshire farmer and experimenter, Dr. R. Shirra Gibb. They all come to see how poor upland pasture can be made to produce choice mutton in increased quantities. They see the thirty-year-old agrostis sod brought under the plough. They note with interest an American implement known as a disc harrow, which cuts up the tough sod and prepares it for a crop of turnips—food for the sheep in winter. They see how this crop is succeeded by another crop of turnips, and how the land is seeded down in the following year to produce grass of such quality as would tickle the palate of the most fastidious sheep. On another part of the farm two wizards

are seen at work. Lime and basic clay they are called. They neutralize the acid, and then the wild white clover shows itself and by its creeping roots breaks the tougher agrostis tufts and makes them into tender and succulent food for devouring sheep of the hardy Cheviot breed.

An interested group of men surround John Marks, of Sunnyside, as he tells why he paid \$500 for a rather common-looking Border Leicester ram, sixteen of whose sons, but one year old, had been sold two weeks before for \$125 each. A few minutes later the same party express their opinions candidly on the comparative merits of two splendid young Clyde geldings. Then Mr. Marks explains why the bay gelding will be the better draught horse when he comes to maturity. But some of the party like the looks of the brown gelding. Finally the arguments of the man of experience tell, and the supporters of the brown horse fall into silence.

Memories of excursions such as these, and many more like them, students of the Edinburgh College carry with them in their wanderings over the world. The students come from every clime and go to every land. Edinburgh Agricultural College extends a warm welcome to agriculturists from overseas. The spirit of the college is cosmopolitan, and anyone who can speak with authority on agriculture in lands beyond will be welcomed by Professor Wallace and his students.

## The Cosmopolitan Club

THE Cosmopolitan Club of the Ontario Agricultural College had its origin in the college year of 1910-1911, when a group of students interested in the formation of a club which would bring the men of all nationalities present at the college into closer touch, and thus lead to a better understanding between them. The advisability of forming the club was discussed fully at a meeting held in the Seminary Room, Massey Hall, during the latter part of the month of October. It was decided to proceed with the organization and a committee was appointed to draw up a constitution and make all other necessary arrangements.

By the middle of November the club was under way, and shortly after the election of officers, a small, but cosy, stone cottage on Forbes avenue was secured by the club as headquarters. Here the club flourished during the balance of the college year, and the membership overtaxed the accommodation of the house and it was decided in the spring to secure a larger house on College Heights if possible. The present club house was secured the same spring and the transfer made. In this location the club has proven a great attraction to the students and has made great progress. The interior of the house has been made very attractive, and improvements are continually being made.

The club parlor is a large, cosy room, with red burlapped walls, panelled in oak, with heavy carpets on the floor and heavy curtains draping the windows. Add to this the comfortable chairs and lounges, accompanied by the music of a Victrola or

piano, and you have about as attractive a place as a man could wish in which to rest and spend a half hour over his cigar, or indulge in a cup of tea and discuss current events. Here, at almost all hours of the day, members may be found passing their spare time and indulging in friendly conversation.

Another room is fully equipped as a billiard room and the members spend many a spare period or idle hour in a friendly game of billiards or pool. It is a great attraction and the click of the balls as they roll around the table, accompanied by the gay laughter of the players when a "fluke" is made or the word of commendation after an exceptionally good shot, testifies to the appreciation of this form of amusement.

Besides these rooms there is rooming accommodation for the Executive Board of the club, and the whole premises is kept in a clean and orderly condition by a resident caretaker.

The formation of the club at this college seemed particularly suited to conditions as there are always, among the student body, a large number from countries other than Canada, in fact, from all parts of the globe. Ever since its origin the club has been truly cosmopolitan. It is associated with the American Association of Cosmopolitan Clubs, which is in turn associated with a similar organization in Europe known as "Carda Fratres." "Above all nations is humanity," is the basis of the formation of all the societies coming under the title "Cosmopolitan Club."

The objects of the club are to create a better feeling and understanding among the men of different

nationalities. A quiet chat tends to do away with any misunderstandings which may exist among peoples separated only by an imaginary line known as a boundary, on either side of which the people hold different ideas and principles. By clearing up these misunderstandings a feeling of brotherhood springs up, and instead of remaining in national cliques at the college the men fraternize, and their friendship with their fellowmen is broadened. Such opportunities as this are offered in gatherings in the club rooms, and that the object is accomplished is shown by the growth of the club, and the perfect harmony

existing among all the members.

A prominent part is also occupied by the club in the social life of the college. With an occasional dance at Macdonald Hall, a sleighride, smoker or social evening in the club house, the club does much to contribute to the social pleasures of college life, and thus break the monotony of study.

The club may perhaps be permitted to take pride in the fact that many names of those students who have gone on active service may be found on its membership roll. Any student to whom such an institution appeals is invited to aid in the continuance of the work which is now so successfully in progress.

## Incubation

By J. P. Hales, '15.

**W**HILE the art of incubation is a very old one, only recently has its science been understood. The Egyptian or Chinese operator uses his mud oven and successfully hatches chicks without knowing why he uses that method, only knowing that his father and his father's father for generations have done the same thing in the same way, with good results. Strange enough civilized incubation operators have never undertaken to hatch chickens in an incubator large enough for a man to enter. We have mammoth incubators holding as many as 15,000 eggs, yet all these machines are controlled and operated entirely from the outside.

Our incubator knowledge has accumulated slowly and through many disappointing experiences. Once it was comparatively easy to hatch chickens in an incubator, but difficulty was experienced in raising them. This difficulty was laid to the brooder, but numerous experi-

ments on brooding proved that the brooders were not entirely to blame. The blame was now laid on carbon dioxide liberated in the process of incubation. Incubators now came on the market, which were supposed to remove the carbon dioxide from the egg chamber as fast as it was formed. But comparisons of natural and artificial incubation revealed the fact that there was actually more carbon dioxide present under a hen than was found in an incubator. From this it was concluded that carbon dioxide was necessary in some way which as yet was not understood. Later experiments still leave the carbon dioxide question unsettled. But these experiments have brought out some facts which seem to indicate the procedure necessary to hatch strong chicks with sufficient vitality to enable one to rear them to maturity. This marks a distinct step of advancement in our attempt at successful artificial incubation.

Incubation is a very interesting

process consisting of comparatively simple essentials, but the egg is a good example of the complexity of nature's working. In the egg are embodied the constituents necessary for the formation of a chick. The construction of the egg is such that the germ is always situated on the upper surface of the yolk. This provision of nature always places the germ nearest the source of heat. Incubation of the egg may commence at a temperature ranging around 75° F., but for the continuation of incubation a higher temperature is essential. In measuring temperature three methods are used. The egg thermometer is merely an ordinary thermometer placed inside a celluloid casing. The advantage of this lies in the fact that it gives a reliable indication of the inside temperature of the egg. It is usually kept at a temperature of 100½° F. Contact thermometers are placed in such a manner that the bulb rests on the surface of the egg. In most cases 103° F. is the temperature recommended. Hang-up thermometers, give the temperature at varying heights above the eggs. The temperature considered most satisfactory varies with the height of the thermometer above the eggs.

When a satisfactory temperature is applied to the egg, the germ commences development. Two days after incubation has commenced a spider-like object resting on the upper surface of the yolk may be observed. This spider-like object is composed of a rudimentary heart and veins. The veins branch out and the albumen or white (as it is commonly called) is changed to blood.

The blood is essential to the growth of the body and the vital organs of the chick. Gradually the network of veins is formed, which extends all

along the inner side of the shell. For the purification of the blood and to support the life of the developing chick, oxygen must come through the shell. At this stage bulbous masses indicating the beginning of the vertebra are seen, while the eyes appear disproportionately large to the remainder of the mass. The wings, thighs, skin and intestines have now commenced their development. About the fifth day the lungs are barely visible. At the eighth day the back, wings and thighs commence to take on their distinctive form. By the end of the eleventh day the blood circulatory system is practically complete. Also at this time the arteries may be seen along the edge of the shell. The final process of development proceeds at a fairly rapid rate and all the vital organs with the exception of the lungs are working. On the eighteenth day the egg contains a fully developed chick. The only part of the original egg not yet used in the formation of the chick is the yolk. This yolk is absorbed into the body of the chick just before the chick's exclusion from the shell.

After hatching varying lengths of time are required for the chick to gather sufficient strength to stand or walk. At this period of development of the chick the reason for the peculiar chemical division of the contents of the egg is seen. The albumen or white of an egg contains hardly a trace of fat, while the yolk is composed of nearly one-third fat. Up to this time the heat supplied in incubation has kept the life processes alive but now the chick has to rely on its own resources to furnish body warmth and food. The yolk of the egg supplies both of these essentials.

The successful operation of an incubator requires intelligence, careful



observation and experience. Sometimes beginners have very good results, but to secure uniform results consistently under adverse conditions, careful observation and experience will be found invaluable.

The incubation room should possess a good ventilating system and have as uniform a temperature as possible. These points are essential mainly from the fact that they allow the operator to note the "individuality" of the various machines when subjected to the same conditions. Lamps are the source of heat in practically all small machines. They should be filled with the very best grade of coal oil and kept absolutely clean. The automatic regulation of the temperature is accomplished by using substances which have different rates of expansion or by using a liquid inclosed by two metal discs. In practice both of these methods have given good results. On mammoth hot water machines, the expansion device is situated in the water and is directly connected with the damper on the stove. This controls the general temperature of the water, but each individual section of the machine is controlled in a manner similar to that used in the small machines.

Some diseases seem particularly likely to attack chicks hatched in an incubator, and it is now well known that infection may be conveyed through the shell of an egg or the organism may exist in the egg even before it is laid. Thus carrying to the embryo chick the germs that lead to its early death. As a means of prevention incubators should be thoroughly disinfected and only clean eggs used for hatching purposes.

From extensive incubation experiments Professor W. R. Graham recommends the use of moisture in all

types of machines which he has experimented with.

Commencing at the third day the eggs are turned twice daily until the morning of the nineteenth day. The machine is now left closed until the batch is completed. Experimental results on the advantages of cooling, differ markedly. Some advise not to cool, while some advise cooling. However it seems safe to say that cooling is beneficial in warm weather. At this time there is comparatively little difference in the temperature of the air and the temperature inside the incubator. The result being that circulation of air within the egg chamber is retarded. But on exposing the eggs to the air they receive whatever air circulation there is, and on cooling the contents of the eggs contract and oxygen is drawn in. This is essential to the developing embryo. Cooling usually commences about the tenth day and ceases on the eighteenth day. The length of time to cool depends on the temperature of the air. It is usually safe to cool until the eggs feel cool to the touch.

The incubator should be absolutely undisturbed from the time it is closed until the hatch is completed. Otherwise the moisture in the egg chamber will escape, thus allowing the membrane to dry around the chick and preventing its escape from the shell. On completion of the hatch remove the moisture pan, the slab in egg tray, and allow the chicks to fall to the bottom of the machine. This removes them to a cooler temperature. If any are noticed panting, the door should be opened a little.

Failures in artificial incubation are usually due to using eggs from weak parent stock, unreliable thermometers and inexperience or poor management of the operator.



# THE O. A. C. REVIEW

## REVIEW STAFF

A. M. McDERMOTT, *Editor-in-Chief*

R. D. COLQUETTE, *Agriculture*

W. H. HILL, *Alumni*

B. E. FOYSTON, *Experimental*

S. B. STOTHERS, *College Life*

R. W. DONALDSON, *Horticulture*

E. E. CARNCROSS, *Athletics*

J. P. HALES, *Poultry*

C. L. RAWSON, *Artist*

R. H. ABRAHAM, *Query*

W. MALCOLM, *Locals*

GLADYS MANNING, *Macdonald*

## Editorial

### HOUSECLEANING.

Have you kept your New Year's resolutions? Neither have we. But don't think we are none the better for having made them, even if they were so soon broken, for the same resolution will be less easily broken again. Now is the time to begin again to make this year the best in the history of the land, at least as regards honest effort. The best beginning is a good housecleaning. Now, we do not think that housecleaning should involve luncheon on the back stairs, sleeping in the bath tub, beating carpet hung over the back fence, during every hour of daylight, or having our wives go through our private correspondence, as they would have us believe. We do think, however, that just now before the busy season begins is an excellent time to clean up, take an inventory, balance our books, sharpen a pencil and plan. Most of all plan! "System spells success" is as true to-day as ever, and whether on the farm, in the school, in the college, or elsewhere, it will be easier to "hew to the line" if we have, first of all, set

a line. This is only another way of saying, have an ideal, and aim to attain that ideal. Few have accomplished anything worthy of note without system, plan or ideal in their work. Pencil and paper are a wonderful assistance in planning, even in farm work.

### SURVEYS.

The following resolution was one of those adopted at the conference on Rural Life and Work, held here recently: "Resolved, that we recommend to the authorities of the Ontario Agricultural College that instruction in business management and accounting, marketing and farm economics be included in the regular course, and that under the direction of the Department of Rural Economics, an economic survey of the counties of Ontario be instituted."

The suggestion that rural surveys be made seems to us a most timely and appropriate one. The rural problem seems to be local and such surveys would furnish us a basis to work upon in analyzing and endeavoring to solve it. There is very little inform-

ation of any locality in Ontario, such as would give any definite idea of rural conditions in Ontario. True, it has been pretty well discussed that rural conditions might be much improved, but much of the discussion has been splendid theory without the necessary foundation in fact and figure. We have numerous reports of organizations, and institutions, but again most of these are local in their statistics. Teachers should have detailed information of each district available for use in the schools of that district or others. It will surprise the grown-ups, too, more that it will be advantageous to them. It would be interesting in each locality to know, say, the number of automobiles, the number of creameries, of homes where electric light has been installed, of churches, corporations, etc. But of much greater value would be information regarding the number and breeds of stock in different localities with the names of breeders, untilled areas, average under different crops, varieties of seed, pasture and feed mixtures in use, average yields, etc. History, civics and geography would become vitalized and visualized.

Perhaps the most important result

of such social surveys, however, would be the development of new standards of achievement.

#### THE COSMOPOLITAN CLUB.

In this issue we have the history of our Cosmopolitan Club since its organization ably written up. None can question the ideals of this organization, and yet we know much less about it than we should. It takes even a greater part in our college life than we at first believe. Certainly there is a great field for its work though circumstances are adverse in many ways.

Our student body has usually representatives from nearly a score of countries as well as from all parts of our own country, the United States and the British Isles. There are influences enough in routine life in college to separate and estrange the students, but the Cosmopolitan Club is unique in its efforts to unify the student body on a basis of merit rather than nationality. Perhaps the greatest education in college comes from contact with others, it broadens, humbles and inspires and makes one more sympathetic. The club seems to have had just these things in mind in its work and effort among us.

#### REAL FRIENDS.

Call him my friend who seeks me in my den,  
 For quiet chats which light the weary day;  
 Call him twice friend who knows exactly when  
 To go away.

Call him my friend whose voice is always free  
 In my defence when critics' words are rough;  
 Call him twice friend who understands when he  
 Has said enough.

—Smart Set.

## Athletics

### Basketball.

THE loss of Munro, who was injured in London, on Jan. 23rd, greatly weakened our team in their game with 'Varsity II.'s in the college gymnasium on Feb. 6. As a result the O. A. C. suffered a somewhat severe defeat at the hands of the Toronto men, the score resulting 37-12 in the latter's favor. The first half was the fatal one. Our men lacked combination and seemed somewhat bewildered, while Toronto's combination was lightning fast, and they found the basket with comparative ease. In the second half, however, O. A. C. braced up. Wilson replaced Forman, who had injured his knee, and Baker replaced Bonham at guard. Our men checked closer, covered well, and effectually checked 'Varsity's habit of scoring, but were themselves unable to increase the score to any extent and the game finished 37-12 in 'Varsity's favor.

O. A. C. lineup was as follows—Forwards, Rowland, Forman (Wilson); centre, Culham; guards, Neff, Bonham (Baker).

On Feb. 20th, London played their return game in the college gymnasium, and the score pleased us all. Just as in the 'Varsity game, our boys seemed a little lost at the beginning of the game, but they very quickly found themselves. In the meantime London had opened the scoring, and our boys set out to overtake them. The first half ended with a score of 12 all and the play so far was a little slow, due to poor combination. At the beginning of the second half Bak-

er replaced Bonham, and O. A. C. got their combination working. Forman and Wilson began to find the basket quite frequently, while London's play became looser. When the final whistle blew the score stood 36-22 for O. A. C. Smith was easily the best man for London, while Forman did some very effective work for the college. The lineup was as follows:

London—Forwards, Smith, McRay; centre, Elgie; guards, E. McRay, Renny.

On Feb. 26, O. A. C. journeyed to Toronto to play 'Varsity their return game. Capt. Munro had emerged from his plaster cast and was back in the game. This meant that our boys were at full strength again. O. A. C. started in her customary way, playing loosely, with a lack of combination and as a result during the first half 'Varsity scored 17 points, while our boys only got 5. On the opening of the second half things began to happen for the O. A. C.. 'Varsity's fine combination collapsed in this half and our boys began to score. Munro was there just as in days of yore and the ball began to find the basket with great regularity. 'Varsity only managed to score a lone point during this half, while our boys scored 16, leaving a final score of 21-18 in their favor. Wilson replaced Forman at the beginning of this half. O. A. C. lineup was: Guards, Baker, Neff; centre, Culham; forwards, Munro (Capt.), Forman, Wilson.

By winning this game we tied 'Varsity in the league, and the winners will have to play off probably in Hamilton.



### Hockey.

The collapse of our college rink on Jan. 25th proved a great set back to our hockey season. It was our first year in the intercollegiate, and considering the unfavorable conditions under which our team worked, Manager Kedey is to be congratulated on his showing.

#### O. A. C. at McMaster.

Our first game was with McMaster in Toronto. Our boys lacked condition, as they had had very little practice. Despite this, up to the beginning of the third period the game was very even, and even then it looked as if our boys would win. The ice was heavy, though, and this, together with poor condition, proved their downfall. The final score was 6-2 in favor of McMaster.

O. A. C. lineup was: Goal, Bryden; point, Kedey; coverpoint, Lackner; rover, Oswald; centre, Hartley; left wing, Leach; right wing, Pawley; spares, Duncan and McNaughton.

#### 'Varsity at O. A. C.

On Feb. 18th 'Varsity played our team in the college arena. Up to the third period the game was even, but everybody felt that there was something coming, and it came in the last period with disastrous affects. 'Varsity played rings around our boys, and "Porky" Bryden, in goal, was stopping them like a hero. Occasionally a shot eked by him though, and bulged the net, and Ivesen, who refereed, would pull out a book and put a mark in it. He did this a little too often to suit us, too. The game ended 12-1 in favor of 'Varsity. Kedey, Oswald and Bryden were easily the pick of the O. A. C. team. O. A. C. lineup was: goal, Bryden; point, Kedey; cover, Lackner; rover, Oswald; center, Hart-

ley; left wing, Leach (Duncan); right wing, Pawley.

#### McMaster at O. A. C.

The final game of the season was with McMaster, on the 22nd. Our boys had been getting a little more practice and showed much improvement in their play. The teams were very evenly matched and it was a pretty game to watch. During the game McMaster missed two or three excellent opportunities to score, but most of the time our defense held them well out and forced them to take long shots. It was anybody's game right up till the last minutes of play when McMaster scored the goal that won them the game. The final score was 3-2. O. A. C. lineup was: Goal, Bryden; point, Kedey; cover, Lackner; rover, Oswald; center, Hartley; left wing, Leach; right wing, Pawley.

#### Baseball.

Our college baseball team has no regular league to play in this season, but the inter-year matches are waxing hotter than ever. The Fourth Year think they have the inter-year championship cinched, but maybe they have and maybe they haven't. Surprises come with amazing regularity, and when the Third Year made the Second Year look like a bunch of novices everybody was surprised. Then came in the Freshmen, who had been taking their medicine in regular doses, and rebelled and made the Third Year think of home and mother. At present it is all a grand uncertainty and prognostications (whatever they are) are strictly out of order.

#### Aquatics.

The Second Year made a cleanup in the aquatic meet which was held on Feb. 27th. In fact the greedy Sophomores guzzled about all there

was to guzzle. They took the cake and the other years eked out a meal apiece from the crumbs. Townsley, '15, broke the record for the long plunge, Brother Bill going 50 ft. 10 ins., which is just 3 ft. 3 ins. more than the old record. Some of the races were exciting, especially the inter-year relays. The results were as follows:

52 yard swim—Langley '16, Gautby '17, Cowan '17. Time, 37 4-5 sec.

104 yard swim—Gautby '17, Cudmore '17, Beaumont '16. Time, 1.27 2-5.

208 yard swim—Gautby '17, Cudmore '17, Beaumont '16. Time, 2.29 3-5.

52 yard novice—Cudmore '17, Mills '17, McEwan '18. Time, 36 3-5 sec.

35 yard beginners—Smith '17, Luckham '17, Mallory '17. Time, 38 3-5 sec.

52 yard back swim—Cowan '17, Boulton '17, Townsley '15. Time, 44 2-5.

Long Plunge—Townsley '15, Mason '17, Beaumont '16. 50 ft. 10 ins., record.

Fancy Diving—McWhinney '18, J. C. Agar '17, Mills '17.

Novice Relay—First Year, Third Year, Second Year.

Inter-Year Relay—Second Year, Third Year.

Total points—Second Year, 38; Third Year, 14; First Year, 11; Fourth Year, 7.

Grand champion of meet, L. B. Gautby '17, with 13 points, winning the silver medal, donated by Mr. E. L. Davies.

#### Notes.

Scott and Clare, two grapplers of the First Year, went down to Toronto to the inter-faculty meet on Feb. 21st. Scott came second in the middle-weights, and Clare won the heavy-weight. The boys did this on three days notice, and are to be congratulated on their showing. This is the first time that any of our students have gone to the inter-faculty meet in Toronto, but probably next year the O. A. C. will have a whole line of boxers and wrestlers to send down.

The other day the athletic editor had a dream. He gazed at the corner of the dairy field opposite Old Chumpy's, and there he saw a fine new stadium with a grand stand and bleachers, a dandy football field and a swell cinder track all around the field. Of course it was only a dream, but—



## College Life

### Inter-Year Debate.

**R**ESOLVED: "That co-education as practised in our Canadian Colleges and Universities is to be commended." This was the subject of debate at the meeting of the Union Literary Society on February 20th. The affirmative was upheld by Messrs. E. G. Rowley and C. M. Meek of the Second Year, while the negative cause was championed by Messrs. A. T. Brown and V. A. Stewart of the First Year.

After the arguments in favor and against the resolution had been carefully weighed by the judges, they decided in favor of the affirmative. The First Year have hardly been amongst us long enough to appreciate our friends' presence across the campus, but will probably readjust their opinions when they become better acquainted. The Second Year now debate with the Senior Year for the term championship.

Misses M. L. Kelso and V. Sutton and the college orchestra assisted in the program.

### Public Speaking Contest.

Competition was keen at the Fourteenth Annual Public Speaking Contest, which was held in the Gymnasium on February 5th, under the auspices of the Union Literary Society.

Honorary President Prof. J. W. Crow occupied the chair, and the judges were Mr. W. B. Roadhouse, Deputy Minister of Agriculture for Ontario; Rev. A. J. McGillvray, M.A., D.D., of Guelph, and Prof. W. R. Graham.

First prize is known as the "Rettie-Clemens" prize, as it is provided for

by Messrs. Rettie and Clemens, who are graduates of this college. This trophy consists of Bailey's Encyclopaedia of Agriculture in four volumes. Mr. S. G. Freeborn won it with a very masterly address on "The Book Farmer."

The other prizes are given by the Literary Society, and were won by the following:

J. H. McCulloch—"Farm Journalism in Relation to Agriculture."

J. E. McLarty—"The Place of Agriculture in Ontario's Rural Schools."

R. B. Hinman—"The Big Boy—What About Him?"

E. K. Hampson—"Methods of Mending Our Ways."

### Athletic Concert.

"The Best Ever" was the verdict of many who attended the annual concert of the Athletic Association, which was held in the College Gymnasium on February 12th.

The program was varied and did not get monotonous, as one of purely athletic numbers is likely to become. Musical selections and others were interspersed in a proportion to please the most exacting audience.

Thorough and regular practice enabled Mr. D. Gillies and his gym team to execute their numbers without a hitch. He was assisted by Mr. Keefe, Y. M. C. A. Physical Director, in the city. Mr. W. Strong played a lone hand in several contortionistic feats, which were well received by the audience.

The final number was a sketch entitled "A Night on Craig Street." This was cleverly executed and gave an insight into the causes of the up-

roar characteristic of Craig street. In this was included a solo by W. Malcolm, which contained several clever local skits.

#### Programme.

Mat Work .....Gym. Team  
 Song—"Macushla" ..Miss E. Carey  
 Exhibition on Parallel Bars.....  
 .....Gym. Team  
 Quartette—"A Perfect Day".....  
 .....Messrs.

Fancher, Legate, Sullivan, Vahey  
 Dance—"My Lady of the Snows"  
 Exhibition on High Bar ..Gym Team  
 Song—"The Little Damozel" .....

.....Miss Estelle Carey  
 Demonstration of Curative Exercises  
 ....Messrs. Gillies and Keefe  
 Quartette—"Star of Hope"....Messrs.

Fancher, Legate, Sullivan, Vahey  
 Variety Gymnasts .....

Messrs. Gillies, Keefe and Strong  
 Song—"Smiles" ..Miss Estelle Carey  
 Gymnastic Dancing .....

Guelph Y. M. C. A. Leaders Corps  
 Intermission ..... Orchestra  
 Sketch—"A Night on Craig Street"  
 ..... "Inmates"

#### "Are You a Mason"

The semi-annual concert of the Philharmonic Society was held on Friday, 26th, and Saturday, 27th. Both nights were thoroughly enjoyed by good audiences. Those who were present on Friday advised their friends to "go and have a good laugh."

The Choral Club, under the direction of E. M. Shildrick, opened the programme with two selections—"Come Sweet Morning" and "Picaninny Babe." These were well received as were their other selections—"Dream Days" and "Nautical Airs."

The orchestra with H. K. Black as leader, rendered several pieces between acts, which reflected credit on every member. They also accom-

panied the Choral Club in two selections.

Part two of the program consisted of the three-act farce "Are You a Mason?" presented by the Dramatic Club. The parts as taken by the members were all well acted and the opinion has been expressed by many—"the best amateur show I ever attended." Mr. R. K. Brydon played two parts, and did justice to both. The members of the Sophomore year considered the work of Mr. Arthur Mann worthy of special recognition and presented him with a beautiful bouquet of "Lactuca sativa."

The proceeds of Saturday night's performance go to the Red Cross Fund.

The characters and actors were:

Frank Perry .....  
 .....Mr. Ormonde Boulton, '17  
 George Fisher, his friend.....  
 .....Mr. R. K. Brydon, '18  
 Amos Bloodgood, Perry's Father-in-law.....Mr. G. E. Patton, '17  
 John Halton, Gentleman Farmer...  
 .....A. C. McCulloch, B. S. A.  
 Hamilton Travers, an old Thespian  
 .....Mr. J. H. McCulloch, '16  
 Malony, a Gigantic Policeman.....  
 .....Mr. Arthur Mann, '17  
 O'Brien, his tiny comrade.....  
 .....Mr. C. Rawson, '17  
 Ernest Morrison, the Real Mason...  
 .....Mr. R. C. Merrick, '18  
 Mrs. Bloodgood...Miss Clara Gwynn  
 Her Daughters.  
 Eva (Mrs. Perry) .....  
 .....Miss Freda Grenside  
 Annie.....Miss Frances Allan  
 Lulu.....Miss Marguerite Stewart  
 Nora, cook to the Perry's.....  
 .....Miss Naomi Horning  
 Mary, maid to the Perrys.....  
 .....Miss Isabel Cochrane  
 Fanchan Armitage, a cloak model  
 .....Miss K. Cunningham  
 Mrs. Halton.....Miss Marjorie Toy



## Alumni

"One man is no more than another, only in as much as he does more than another."—Don Quixote.

### A. D. Campbell, B. S. A.

"Archie" Campbell was born at Strathroy, Ontario, where he received his early education at the High School and then at Strathroy Normal School. After graduation from Normal, he followed the teaching profession for a short time, being lured away by the "call of the West" to try to satisfy his ambitious spirit. However, one day he conceived the idea that the O. A. C. might be able to give him some valuable information and training, so he enrolled as a student in 1905. During his junior year at this college he was Editor of the Review, he graduated in 1909. Mr. Campbell has acted as District Representative for Dundas County until a short time ago. He is now acting as first assistant to Dr. Rutherford in the Agricultural Department of the Canadian Pacific Railway, with headquarters at Calgary, Alta.

Wade Toole, B.S.A., since graduation, in 1911, has been editor of the "Farmers' Advocate" of London, Ont. Mr. Toole when at college was Agricultural Editor of the Review in his senior year. During the early part of last month he gave an extremely practical and interesting short course on "Farm Journalism" to the junior and senior classes.

"Pat" Keegan, B.S.A., '11, is in charge of the seed branch at Calgary, Alberta, where he is doing some excellent work along seed improvement lines for that Western Province, his

capacity to work at all times, regardless of financial remuneration, has gained him many friends, who testify that "he is not one of the kind that is just satisfied to draw his salary." Good luck to you "Pat."



B. H. C. Blanchard, '14, with First Canadian Contingent.

E. A. Weir, B.S.A., '13, is now advertising manager of the "Farm and Ranch Review," Calgary. Mr. Weir was recently in Guelph on a combined trip, for business and pleasure, renewing many old acquaintances.

"Prixie" when at College, was Business Manager of the Review, during his junior and senior years. He was also President of the Cosmopolitan Club.

E. L. Davies, B.S.A., '14, has been taking a post-graduate course for the degree of Ph.D. at Massachusetts Agricultural College, Amherst. He is now assistant on the Bacteriological Department of the O. A. C. He is also doing some investigational work in connection with his thesis for his degree.

Dan Mackee, B.S.A., '13, is Associate Editor of the "Canadian Countryman," Toronto.

J. McCulloch Brown, L.D.D., B.S.A., '14, is Assistant Professor in the Animal Husbandry Department of the Manitoba Agricultural College, Winnipeg.

J. J. Kenny, B.S.A., is manager of the Western Canada Cheese Company, Limited, Winnipeg. Mr. Kenny was married at Orillia recently to Miss Hogan. The couple are spending their honeymoon trip with friends in London, Detroit, Chicago and Milwaukee. On their return they will reside in Winnipeg. "Jack's" many friends and the Review wish him every success in his new life.

The Review staff extend congratulations to Professor and Mrs. J. Eaton Howitt, on the arrival of a son and heir on February 14th, St. Valentine's Day.

With deep regret we have to announce the tragic death of Miss Tena McMillan, at St. Anne de Bellevue.

Miss McMillan was accidentally killed when bidding good-bye to some friends at the railway station, being run over by an engine. She was a graduate of Macdonald Institute, and held the position of Superintendent of Residence at Macdonald College, Quebec. The Review extend their sympathy to the bereaved relatives.

W. R. Reek, B.S.A., Lecturer of Animal Husbandry, O. A. C., has left us to take up the position of Live Stock Commissioner for Prince Edward Island. We are sorry to lose our popular lecturer, but we congratulate him upon his appointment and wish him every success in his new work.

The fifth annual reunion of the Ottawa Valley O. A. C. Alumni Association was held in the University Club Rooms, Ottawa, on January 21st last. Although on this occasion the number attending was small, the evening was spent most profitably. The reunion took the form of an informal gathering, the members present partaking of a light lunch and spending the time in music and in renewing old acquaintanceship made when attending this college. Among those present were Dr. Mills, of Ottawa, George H. Clark, T. G. Raynor, L. H. Newman and L. LeLacheur, of the Seed Branch; W. A. Brown, Live Stock Branch; J. B. Spencer, Publications Branch; F. C. Nunnick, Commission of Conservation, and several others.

Dr. Mills gave a very interesting talk, dealing with changes and progress noted during the past few years; while Mr. Newman, Mr. Brown and Mr. M. H. Winter, District Representative, Ontario Department of Agriculture, Renfrew, Ontario,

each outlined the particular work in which he was engaged.

The following members were elected as officers of the association for the ensuing year:

Honorary President—Dr. James Mills.

Honorary Vice-Presidents—Dr. G. C. Creelman, Dr. C. C. James, Dr. J. G. Rutherford, Dr. J. W. Robertson.

President—F. C. Nunnick, Ottawa.

Vice-President—T. H. Mason, Ottawa.

Secretary-Treasurer—W. Dawson, Ottawa.

Committee—E. D. Eddy, A. J. Logsdail and W. A. Brown.

The association has about 120 members at present on its mailing list.

Salisbury Plains,  
Bustard Camp.

"Our one big day here is when the Canadian mail arrives. I am glad to be one of the representatives of the O. A. C. here. My uncle, Lieut. M. G. Blanchard, who was killed in the South African war, was an O. A. C. student about 30 years ago. The life here is not easy by any means, but we are cheerful and exceptionally healthy. The English people remark on the excellent physique of the Colonials. A couple of weeks ago we changed camps; made a move of six miles. We are now at headquarters. Stonehenge, the Druid relic, is about 2½ miles away. The Newfoundland boys are still with us. They are a fine bunch of men. The 500 were picked from 900 volunteers.

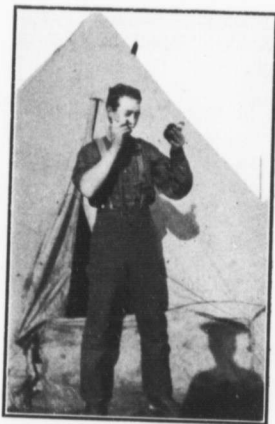
The Plains are of immense scope, considering the size of England; I would judge they are 25 miles by 15 miles. The Westerners say they remind them of the prairies. There

were farms here once, but all the houses have been vacated.

I had a nice trip to Liverpool a short time ago. Three of us went as escort to bring back a man who had overstayed his leave. We took our time on the way, stayed four hours in Bristol, and half a day in Liverpool, visiting the art gallery, museum and wax works. Our regiment is soon to be fitted out with kilts. I can imagine the spiders tickling my knees.

The English people have given us a grand reception. The Canucks are the candy kids here."

By B. H. C. Blanchard,  
No. 1 Company,  
17th Battalion,  
1st Canadian Contingent.



Eric Hearle, in Camp at Salisbury Plains.

The Alumni Editor received a letter from Eric Hearle, '16, recently, in which he says in part: "I guess I don't need to tell you what England has been like this winter—the worst for rain that they have had in a century, and our brigade is still under

canvas on the plains. However, the fellows are real mud larks, and have made the best of a bad job, and had a good time in spite of all the weatherman could send us.

They have been wild to get away, and go across the water to France and get to business. At last I believe we are about to move, for we are packed up and to-morrow are to be inspected by the King and Queen.

We are working hard with full packs at bayonet fighting, etc. I have met many of the O. A. C. boys here on route marches and when on picket duty.

Pte. E. Hearle, No. 10916,  
4th Batt. 1st Brigade, C Co.,  
1st Canadian Contingent.  
Care War Office.

Captain Pratt, of year '16, is with the 3rd Contingent in training at Guelph.

W. K. Edye, '16, of Dryden, has

joined the Canadian overseas expeditionary force.

Messrs. Percival, Clarry and Western of year '17 have left Halifax for England, where they will go in training for the Army Service Corps.

C. R. Arnold, '17, has gone to London mobilization camp to train.

J. R. Donaldson, '16, late of staff of "Farm and Dairy," Peterboro, has joined the Army Medical Corps at Ottawa, going with 2nd contingent.

#### "Sons, Awake."

Hark, the bugle call is sounding,  
Duty ne'er shall know a fear;  
File away then into muster,  
Tell your country that you hear.  
Rally 'neath the good old standard,  
Long unfurled for equal laws;  
Show the world how British valour  
Ever aids a righteous cause.  
—Private A. Cronie.



Winslow, to Mr. Hunt, in Hort. Class-room—"Does 'Downey' Mildew affect the Spencer variety of Sweet Pea?"

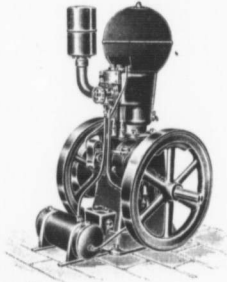
## POWER ON THE FARM

The LISTER Gasoline Engine provides the most reliable, efficient and economical power for farm use.

It will drive the grinder, separator, churn, washing machine, grindstone, saw, thresher, ensilage cutter; will fill the silo, pump water or generate electricity for lighting up the farm and outbuildings.

No technical skill is required to start, run or handle the Lister Engine. There is no battery to run down or get out of order, no lamp to adjust, no outside holes to fill, no danger, no extra insurance. Ten Thousand "LISTER" users will confirm this.

Write for Catalogue with photographs of Lister Engines in use on Canadian Farms.



### R. A. LISTER & CO., Limited

58-60 STEWART STREET,

TORONTO.

Local Sales Agents for Guelph and District—S. & G. Penfold.

## Macdonald

### Weddings.

On Monday, February 22nd, at 7:15 p.m., in St. George's Church, Mae Whitehead to Captain Wood, of the 34th. The ceremony was military, which aroused much interest in the school as well as Guelph society.

A reception was given by Miss Watson for the bride in the Institute. Miss Watson received in the Reading room, which was beautifully decorated. The Macdonald Institute faculty, the officers and the 1915 Housekeeper Class were present. Toasts were given to the bride and the bridesmaid, Miss Watson and the housekeeper.

Mr. Fuller spent several days in February with his mother at the Hall. Mr. Fuller belongs to a Vancouver Regiment and stayed in Guelph en route to the front.

### Y. W. C. A.

During the past month, the regular Sunday evening meetings have been held with increasing interest, with an average attendance of fifty-six. On February 7th, Miss Conklin, traveling secretary of the Student Volunteer Movement, spoke to us concerning her work. On February 14th, Miss Stover gave a most interesting talk on "Settlement Work," in which she has taken an active part in New York City. The following Sunday, we were most fortunate in having with us the Rev. Mr. Woodsworth, of Winnipeg, who addressed the meeting on the subject of "Immigration."

The Bible Class has continued to meet each week. For several successive meetings, character sketches of the important women of the Bible

have been given by different members, and have proved most interesting.

#### Athletic.

The weather during the last few weeks has been hardly suitable for hockey. However, we are hoping that now a change has come, it will remain cold. The last few

handicap is that the opposing team plays with the straight end of the sticks and is minus two goals. A large audience is expected and hope is high for the success of the Hall team. If only the weather keeps cold more matches will be arranged and "Good Luck" to Macdonald Hall.

The interest in basket ball has been kept up by practices several times a



practices have been very encouraging, and the team has now been picked. The following is the line-up: Goal, K. Percy; point, M. Toy; C. point, L. Panton; rover, L. McCarthy; centre, I. Cochran; R. wing, Miss Stewart; L. wing, M. Williams; spare, M. Smith.

The captain, challenged by the team in Woodstock, Ont., was extremely sorry that she was unable to accept. However, a match has been arranged for February 27th against a chosen team of O. A. College boys. The

week. When the winter season is over the game will be entered into again with the usual spirit and matches will be arranged.

Baseball interest is manifest and several matches have been played with varying success.

#### War Reading—Fighting Lines.

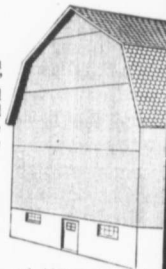
(By Harold Begbie Price)

Harold Begbie is drawing censure and praise from different quarters on account of his lines appearing in Toronto street cars. Though intended

# "Metallic" Building Materials

Are Famous All Over Canada For Their  
Durability and Economy

If you are about to build a new barn or repair an old one, you will do well to post yourself on the superior value of "Metallic" materials. We have a reputation of over 30 years successful business with Canadian farmers. "Metallic" shingles, corrugated iron, roof lights, ventilators, siding, ceiling and wall plates have a wonderful reputation for honest materials, careful, accurate manufacture and sterling durability. We have all the information ready to mail you in book form, waiting your request.



## THE FAMOUS "EASTLAKE" STEEL SHINGLE

Is the original and most successful of all the steel shingles in use. "Eastlake" Shingles laid 30 years ago are in splendid shape to-day. Their heavy zinc coating and high-grade steel, with special patent, economical, easy-laying features, have given them wonderful favor. Booklet free.

## "METALLIC" STEEL PLATES FOR THE HOME

Don't neglect your home. Get our suggestions and prices on how to make your ceilings and walls beautiful, fire-retardant and all but imperishable. Patterns are new, exclusive and handsomely embossed. "Metallic" Sheets are easily laid over plaster.

"Metallic" materials are British through and through. No "Keystone" or other foreign-made sheets used.

Shingles, Ceiling, Corrugated Iron,  
Barn Roof Light, and Ventilators.

The Metallic Roofing Co., Limited, Manufacturers, King and Dufferin Sts., Toronto.



to hearten the scared and retrenching business men some able-bodied young office man might derive an excuse for remaining snugly at home while his brothers are bearing the brunt of the enemy's steel. The danger is greater here than in England.

Every hero shall be welcomed, every orphan shall be fed,  
By the man who stuck to business, by the man who kept his head.

"Fighting Lines" ring with far echoes of Kipling and Tennyson. It is popular poetry, meant to inspire the average man with fine feelings about the war.

Macdonald Fish have had several meets in the boy's gym. Diving, novice, long distance and plunging are demonstrated by the swimmers every Saturday morning.

We wish it understood that Barney Raymond is not taking lectures at the Institute though he does get considerable roasting.

### Girls' Hockey.

It is rumored that the game with the seniors won't have any resemblance to a pink tea. If it is half as exciting as the match with 'Varsity, the rail birds should really make an effort to get up for the game.

After the Mill Street snow shoe tramp, we would strongly advise W. B. McMullin and C. Nixon to consult an optician. Such defective eyesight is inexcusable.

Mr. Hunt to Mac. Class in Horticulture—"You must put up with me for the two periods this afternoon, as Mr. Britton is engaged." (Laughter.)

Mr. Hunt—"Yes, I thought it would be news."

Isabel M. (after reading new stamp regulation).—"Say, girls, I'm going to buy up a dollar's worth while they're cheap."

Was it owing to the confetti at the wedding reception that one of our Sr. Housekeepers so completely lost her head, or was it something else?

"Perhaps "Mac" will explain.

It is to be regretted that the Fourth Year have not the opportunity of observing the Two-in-One demonstration on bread. Perhaps Donald could arrange for private lessons.

Miss Watson (at telephone)—"Miss Smith, I would like to see you this evening at 8:30 to discuss a prospective position for you at the Manitoba Agricultural College."

May Smith—"I'm sorry, Miss Watson, but it is impossible for me to come to-night as I've just heard there is skating at the arena."

#### New Year Resolutions, Firmly Made, But Long Since Broken.

Francis B.—That I shall spend two consecutive Sundays at Mac. Hall at least once this year.

Nettie H.—I shall not use the college phone for longer than ten minutes at a time, twice in one day.

Nellie W.—That I shall not write more than one letter during any one lecture.

Miss Roddick—That I will not ask the girls to come over before daylight to set bread.

Winifred W.—That I will not climb any more fences than necessary when on a Mill Street snow shoe tramp.

## Locals

### The Botany Martyr.

O ye that trace the plant  
Into the Spotton lair,  
Who spake in Spotton's can't,  
Now hear what I declare,  
The Lord forbid that I should be  
A bug of your fraternity.

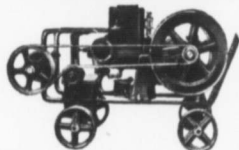
### Squad, Halt!

"Dad" Hanlan (drilling awkward squad)—"Now, on the command 'form fours,' take one pace to the left with your right foot and one pace to the right with your left foot and stand easy."

Ask our smiling dietitian how sleigh riding at the O. A. C. compares with snowshoeing at the M. A. C., Winnipeg. After M. A. C. Gazette.

### *"Goes Like Sixty"*

Engines, Grinders, Wood Saws  
Ensilage Cutters, Spraying  
Outfits, Pumps, Washing Ma-  
chines, Speed Governors, Etc.



Gilson Engines have special exclusive features which put them in a class by themselves. Every man who gets a "GOES LIKE SIXTY" engine secures for himself

"Safety, Service and Satisfaction"

PRICES RIGHT—EASY TERMS

Write for full particulars and our new illustrated catalogue.

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## You have many uses for this machine!

We are frank in telling you that a SPRAMOTOR, rightly used, will earn its cost the first season and pay you a handsome profit besides.

Our SPRAMOTOR is a very adaptable machine—one that will benefit you in many ways. It saves orchard trees and row crops with equal certainty; destroys weeds, kills rot, blight, canker, lice, beetles and all parasites.

It throws paint or whitewash on to buildings twenty times as quickly as by hand and does a better job. Used with disinfectant it protects horses and cattle from biting, tormenting flies and lice. A



orchards. Used on potatoes, a SPRAMOTOR has increased a yield of almost nothing to 400 bushels an acre.

The SPRAMOTOR stands unequalled in the whole world as an effective spraying machine. It has won over 100 Gold Medals and first awards against all comers. Twenty distinct patent improvements on the SPRAMOTOR that no other machine can have. Prices run from \$6 up to \$350—dozens of styles and sizes. Let us send you FREE, our valuable illustrated treatise on Crop Diseases. Post-card brings it quickly.

# Spramotor

**It isn't a SPRAMOTOR unless we made it**

reduces the percentage of loss in fruit over 80 per cent. as shown by Government tests in 19 different

Made in Canada—no duty to pay.

J. H. HEARD, SPRAMOTOR, 2162 KING ST., LONDON, CANADA.

## The Ontario Government Says



In Ontario Government Bulletin No. 206, entitled "Dairying on the Farm," this advice is given:

"In choosing a separator it is advisable to select one that is simple in construction, strong, durable, with reasonable care, and having all parts, which come in contact with the milk, easily washed."

The writer of this Bulletin might readily have had the

# Standard

cream separator in mind, for he chose three of the points on which the Standard is unbeatable. The simplicity of the Standard is a mechanical triumph. Its durability is insured by the use of the highest grade materials, exact manufacturing methods, rigid inspections, running tests at the factory, splash oil system, etc. Its bowl and discs contain no crevices or places that are hard to clean. Washing them "as clean as a tea cup" is no trick at all.

But there are other reasons for selecting the Standard—reasons of close-skimming, of larger profits. But we cannot go into details. Our latest cream separator booklet does that in a way that cannot fail to open a dairyman's eyes. Send for a copy.

## The Renfrew Machinery Co. Limited

Agencies Almost Everywhere.

RENFREW, ONTARIO.



**"Made-in-Canada"** and a credit to Canada.

## Locals

### Society Notes.

J. E. McLarty is absent from lectures attending the "fair" at home this week.

E. L. Small attended the "fair" last week.

Note.—Typographical error noticed too late for correction.



Interested Outsider—"And what time does the rising gong go at Mac. Hall?"

E. F. G.—"At 6:45 a.m."

I. O.—"Oh! Is that the time the girls have to get up?"

E. F. G.—"No, my dear, that's the time the gong rings."



Steckle and Francis are not receiving again this season.



Hurrah for the hen—her son never sets.



Lost—A large piece of chewing gum. Kindly return to Shaw, '16.



Telegram to 5 p.m. Edition of O. A. C. "Review.")

Grimsby, Feb. 24. — Grimsby grieved over sudden demise of Cooper, the well known cold-storist. Death due to aqueous vapor in his refrigerator. Will be conveyed to Calcium in Carre's machine, where body will be stored in brine. Please notify Third Year at O. A. C. No flowers requested. "Read up on this, fellows."

## Apple Trees

All standard varieties, one and two years old, large, strong and clean; grown with special care from selected buds for our own planting.

**AT RIGHT PRICES.**

Write us for prices and information.

**LYNNDALE FARMS,  
Simcoe, Ont.**

P. E. Angle, Supt.

Made in Canada



**Develop your  
home market  
buy Windsor  
Table Salt**



## Rennie's Seeds Always Grow

THE BEST VEGETABLES AND THE FINEST FLOWERS  
CANADA'S OPPORTUNITY—Every foot of  
fertile soil in Canada must be sown and culti-  
vated to its limit this season. The world  
needs all the products of the soil we can sow  
during 1915. While our supplies are large,  
we advise ordering seeds immediately in case  
of shortage, as the demand will be enormous.

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Cyprus Incubators and Brooders  
Cyprus Poultry Foods  
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Cyprus Laying Mash  
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Pratt's Poultry Foods, etc.

Write for prices.

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Portage Avenue, Winnipeg, Man.

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## FOR SALE

ON EASY TERMS

# 200 ACRE FARM

IN BRUCE CO.

100 acres, Lot 17, Con. 13, Brant Township. About 90 acres cleared, balance  
hard wood bush. There is on the premises frame house, frame barn, and frame  
horse-stable. Soil, clay-loam. It has a never-failing spring creek running across  
the farm.

100 acres, Lot 18, Con. 13, Brant Township. About 90 acres cleared, balance  
hard wood bush. There is on the premises: bank barn 56x65, frame barn 35x40,  
and frame house. Soil, clay-loam. A never-failing spring creek runs across the  
farm.

THIS IS AN EXCELLENT STOCK FARM.

The above farms are 6 miles from Chesley or Cargill; 9 miles from Walker-  
ton or Paisley. Close to Methodist, Presbyterian, and Roman Catholic Churches.  
Also close to School and Postoffice.

Full information can be obtained from the proprietor,

JOSEPH LAWSON,

Imperial Life,  
GUELPH, ONT.

## THIS WASHER MUST PAY FOR ITSELF

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but, I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right, but pay me first, and I'll give you back your money if the horse isn't alright."

Well, I didn't like that. I was afraid the horse wasn't "alright" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it.

But I'd never know, because they wouldn't write and tell me. You see, I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough, to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six minutes. I know no other machine ever invented can do that without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that on washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 50 cents a week, send me 50c a week till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer that washes clothes in six minutes.

Address me personally,

H. O. MORRIS, Manager,

"1900" Washer Co.,

357 Yonge St., Toronto, Canada.

(Factory 79-81 Portland St.)

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

## Locals

Mr. Graham (in physics class-room, lecturing to Freshmen)—"What is velocity?"

Geddes (an apiculture student with considerable experience)—Velocity is what a fellow lets go of a bee with.

### Please Tell Us.

Why Mel. Jones doesn't get a girl of his own instead of borrowing.

Whether Bill Tawse knows another song beside "Sunnybrook Farm."

If the Kaiser and Old Nick were up a tree what kind of fruit would they be. (Answer)—A rotten pear.

Prof. G. E. Day—"Can anyone tell me why the new rink was built so close to the piggeries?"

Student—"So that the pigs could "root" at the hockey matches."



## Hotel Carls-Rite

"The House of Comfort"

Opposite the Union Station,

TORONTO

American Plan, \$2.50 per day  
European Plan, \$1.00 per day.

W. F. WATT, Manager

... THE ...  
*New Spring Fashions*

HIGH-CLASS LADIES' TAILORING  
AND TAILORED DRESSES

We are always to the front with the latest  
fashions and goods. Try us and you will come  
again and send your friends.

*J. N. LANE*

*Ladies' Tailor*

*Masonic Block, Quebec Street, Guelph*

WHY PAY TWO PRICES FOR YOUR CLOTHING  
THEY COME DIRECT FROM THE MILL TO YOU

Suit or Overcoat to Order

NO  
MORE

\$15.00

NO  
LESS

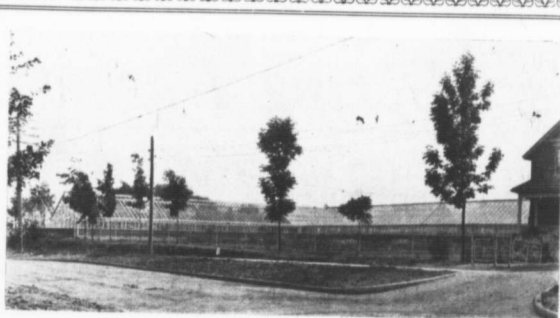
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The Scotland Woolen Mills Co. Limited

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KING EDWARD CLOTHING CO.

OPPOSITE CITY HALL



#### GREENHOUSE MATERIAL.

This department has grown extensively and now forms a very important part of our business.

One of the most important features in the manufacture of greenhouse material is the kind and quality of the lumber used. We use exclusively Louisiana Gulf Coast Red Cypress, air dried and free from sap. It is less affected by atmospheric conditions and has more desirable qualities for greenhouse construction than any other.

Our long experience in the manufacture of greenhouse material, combined with the best machinery, justifies us in assuring our customers entire satisfaction.

Before buying your greenhouse material do not fail to get our figures. We are satisfied that once you give us an order we shall retain your patronage.

#### STOCK HOT BED SASH

Our hot bed sash are made of the very best material clear Gulf Red Cypress—and are put together to withstand the most severe usage.

All the joints are tight fitting, blind mortised and white leaded before being put together. A  $\frac{1}{2}$  in. oak rod runs through the bar and into the stiles. A metal pin is driven into each of the bars and stiles through the rod. In this way each bar is held in proper place and prevented from sagging.

Write us today for our folder and Price List.

The prices are for clear Red Cypress, unglazed  
When ordering state whether  
for Lapped or Butted Glass.

**BATTS LTD.** 347 PACIFIC AVENUE  
WEST TORONTO



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Write the date and the title on the film at the time you make the exposure. Add to the value of every negative with a permanent record that you can always have for reference. It's only a matter of seconds with an

## Autographic Kodak

The Autographic records are made on the margins **between** the exposures. It is not intended that they be made to appear in the prints themselves but that they be simply preserved as an authoritative reference. It is obvious, however, that they may be shown on the print itself—if desired.

Autographic Kodaks and Autographic Film at all Kodak Dealers. Our booklet, "Autographic Kodaks", free at the dealers or by mail, gives the details.

CANADIAN KODAK CO., Limited, TORONTO.

## Locals

### A Secret.

This secret became a secret last September. Heimpel had just been a week at college, and everything seemed so different from home, away back at New Hamburg. He was making his first venture off the campus and sat in the waiting-room waiting for a car to take him to the city. The hours passed slowly, and he finally made bold to ask a passer-by—"Please, sir, when do the cars go to the city?" "Every twenty minutes, my lad." "That's funny," said Heimpel. "I haven't seen a car going to the city in the last two hours, but several have gone by to the country."

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Company, Limited**

Educational Equipment,

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Ontario.

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We carry a full line of

Baseball, Cricket and Tennis Supplies

Every requisite for the

Runner, Swimmer and Footballer

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TORONTO



# The Most For Your Money

You aim to "make two blades grow in place of one." To do this, you must get the MOST from every hour—every acre—every cent. To be a successful Scientific Farmer, you must be a shrewd Scientific Buyer.

In buying Fence, for instance, you want the HIGHEST QUALITY at the LOWEST COST. You get it in

## PAGE FENCE

"Direct from Factory to Farm"  
(Freight Paid)

There are many miles of PAGE FENCE that has seen 20 years service—and still looks good for 20 more. Because PAGE FENCE is built to last a LIFETIME.

No. of bars	Height	Stays inches apart	Spacing of horizontals	Price in Old Ontario	SPECIAL FENCE
6	40	22	6½, 7, 8½, 9, 9	\$0 22	No. 9 top and bottom. Balance No. 13. Upright 8 inches apart.
7	40	22	5, 5½, 7, 7, 7½, 8	24	18-bar, 48-inch ..... \$0 43
7	48	22	5, 6½, 7½, 9, 10, 10	25	20-bar, 60-inch ..... 48
8	42	22	6, 6, 6, 6, 6, 6, 6	27	Set tools ..... 8 00
8	42	16½	6, 6, 6, 6, 6, 6, 6	29	3-ft. Gate ..... 2 25
8	47	22	4, 5, 5½, 7, 8½, 9, 9	28	12-ft. Gate ..... 4 20
8	47	16½	4, 5, 5½, 7, 8½, 9, 9	30	13-ft. Gate ..... 4 45
9	48	22	6, 6, 6, 6, 6, 6, 6	31	14-ft. Gate ..... 4 70
9	48	16½	6, 6, 6, 6, 6, 6, 6	31	25 lbs. Staples ..... 75
9	52	22	4, 4, 5, 5½, 7, 8½, 9, 9	33	25 lbs. Wire ..... 70
9	52	16½	4, 4, 5, 5½, 7, 8½, 9, 9	33	
10	48	16½	3, 3, 3, 4, 5½, 7, 7, 7½, 8	35	
10	52	16½	3, 3, 3, 4, 5½, 7, 8½, 9, 9	35	
11	55	16½	3, 3, 3, 4, 5½, 7, 8½, 9, 9	38	

ALL FULL NO. 9 GAUGE.

Freight Paid on Orders of \$10.00 or over.

### HIGHEST QUALITY

It is made of the very best carbon steel fence-wire. Every bit of wire is full No. 9 gauge—even the locks. Laterals are woven under uniform tension. Up-rights are correctly spaced—exactly as specified in our catalog. You never see PAGE FENCE "sag." PAGE Locks are simple—yet absolutely slip-proof. PAGE Galvanizing is the finest ever used on Fence. For 22 years, PAGE FENCE has been Canada's biggest-selling fence.

### LOWEST PRICE

PAGE FENCE is sold DIRECT FROM FACTORY TO FARM. All middlemen's expenses and profits are cut out. There is just one small profit between you and us. That's why PAGE—the Highest-Quality—FENCE can be bought at the price of "ordinary" fencing. Instead of buying through the Dealer—at 100 per cent. over manufacturing cost, you sell yourself PAGE FENCE and get BETTER Fence at LOWER Cost.

### MAIL YOUR ORDER

Start your farm on a Scientific basis. Fence your fields with PAGE FENCE. Get "life-time" service—at the price of ordinary "2 or 3 year" fence. PAGE FENCE (Direct)—at our low prices—is the HIGHEST QUALITY Fence at the LOWEST Cost. When you buy other fence—you GIVE MORE or GET LESS.

Orders should be mailed to the nearest PAGE Branch; with cash, check, bank-draft, money or express order enclosed. Immediate shipments from nearby stock. Freights paid on all \$10 orders or over.

## PAGE WIRE FENCE CO. Ltd.

Write for FREE copy of our big 80-page General Merchandise Catalog. QUALITY goods at WHOLESALE prices.

DEPT. 106, 87 Church  
DEPT. 106, 39 Dock.  
DEPT. 106, 100 James E.  
DEPT. 106, 1137 King W.  
WALKERVILLE ST. JOHN WINNIPEG TORONTO  
MONTREAL



# 10,000 FARMERS WANTED

## To Stand Behind the Sarnia Metal Products Co. Limited, and the Organized Farmers in a Great Co-Operative Proposition

We want every farmer in Canada that contemplates using Corrugated Iron, Metal Shingles or any other Sheet Metal Building Materials, to write us at once for information of our new co-operative plan by which we are supplying the farmers of Canada with Sheet Metal Building Materials at the lowest possible cost.

## \$25.00 to \$50.00 Saved Every Farmer QUALITY

We guarantee the galvanized iron used in the manufacture of Sarnia Metal Products to be equal to that of any iron used by any manufacturer in Canada in the manufacture of similar lines of roofing products which they are selling to the farmer, at the time of advertising, at an advance of 25 to 50 per cent. above the prices we are quoting. And please remember that all Sarnia Metal Products are made from galvanized iron of a quality specified by the organized farmers themselves.

### PRICE

By an agreement with the farm organizations we have agreed to supply all farmers with sheet metal building materials at a small percentage in advance of the cost of our raw materials, leaving the control of the selling price in the farmers' hands. We have estimated our profits on a very large volume of business, and every order you send us will help in making our price still lower.

### SERVICE

Our factory at Sarnia, just completed, is the most modern factory in Canada for the manufacture of the lines we offer, and we carry such large stocks and are situated in such an advantageous location that it is possible for us to make the quickest possible delivery of orders.

## A Vital Question

If approached by another company or its agent in an endeavor to sell you Corrugated Iron, etc., simply ask them what they would supply you the same material for if it were not for the Sarnia Metal Products Company, Limited, and its co-operative plan. We have some information in regard to the plan used in the endeavor of others to head off our business, which proves very interesting reading.

If you contemplate the erection of any new buildings or the re-roofing of any already built, please send us a rough sketch, and we will do the rest.

WRITE AT ONCE TO HEAD OFFICE.

## THE SARNIA METAL PRODUCTS CO. Limited SARNIA, CANADA

Our lines are sold and distributed through the United Farmers' Co-Operative Company of Ontario.

## CANADIAN PACIFIC NEW LIMITED TRAINS

"THE CANADIAN"

Between

**MONTREAL, TORONTO, DETROIT, CHICAGO** Via **CANADIAN PACIFIC** and **MICHIGAN CENTRAL RAILROADS**

via **Michigan Central Gigantic Steel Tubes** between Windsor and Detroit. Leaving Montreal 8:45 a.m.; Toronto 6:10 p.m., arriving Detroit 12:35 a.m. and Chicago 7:45 a.m. daily.

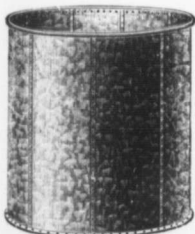
Equally good service returning.

Through Electric Lighted Equipment.

### TORONTO—WINNIPEG—VANCOUVER

Toronto-Vancouver Express No. 3 leaves Toronto 5:55 p.m. daily. Vancouver-Toronto Express No. 4 arrives Toronto 11:45 a.m. daily. Manitoba Express No. 7 leaves Toronto daily except Sunday 10:50 p.m., arriving Winnipeg second day. Ontario Express No. 8 leaves Winnipeg 9:25 p.m. and arrives Toronto 5:15 p.m. daily except Tuesday.

For further particulars apply to Canadian Pacific Ticket Agents or write M. G. MURPHY, D. P. A., C. P. Ry., Toronto, or J. Hefferman, C. P. & T. A., 32 Wyndham St.



## Wayne Steel Tanks

Do not buy wooden tanks or build concrete ones until you have investigated the WAYNE STEEL TANK.

The WAYNE TANK is moderate in price, and has twice the life of a wooden tank and many advantages over cement.

No fuss or muss. Use it in the barn to-day, and to-morrow put it in the yard if you wish. They do not get water-soaked, and freezing weather has no effect on them.

If your dealer does not handle the Wayne, let us hear from you direct.

**WAYNE OIL TANK AND PUMP COMPANY, LTD.**  
WOODSTOCK, ONTARIO

**D. M. FOSTER, L.D.S., D.D.S.,**

Dentist,

Cor. Wyndham and MacDonnell Streets.

Telephone 14. Over Dominion Bank.

You could enjoy yourself for a nice meal and a cup of real American Coffee.

Call at the

**DOMINION CAFE**

104 WYNDHAM STREET.

Phone No. 688.

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

## SMALL FRUITS PAY BIG DIVIDENDS



### SEND for FREE INFORMATION

We tell you how to start a small  
Fruit Patch.

The right varieties to plant.

What the cost will be.

What profits can be realized.

AGENTS WANTED to sell the  
**New King Raspberry** and other  
specialties.

## STONE & WELLINGTON

Nurserymen

TORONTO

## GREENHOUSES FOR THE FARMER

The possibilities of raising many fruits and vegetables under glass are attracting the attention of farmers.

Hot-house products command high prices and find ready market, and the greenhouse also affords a means of propagating plants, to be set out later, for very early vegetables.

If you intend building this year look into our proposition NOW and get early returns. We have designed a special house for farm use, which is constructed to give the highest efficiency at low upkeep and operating expense.

We will be glad to send you further information about farm green-houses. Write for it to Dept. A.

### GLASS GARDEN BUILDERS, LIMITED

Makers of Greenhouses, Heating and Ventilating Apparatus, etc.

201 CHURCH ST. TORONTO

P. O. BOX 1042, MONTREAL



VIEW of the Dairy Barn at Guelph, O.A.C. covered entirely with PRESTON SAFE LOCK SHINGLES and ventilated with ACORN VENTS.

The rink at the O. A. C., shown in the last month's Review, is entirely covered with ACORN CORRUGATED IRON.

These are but two of the many public buildings which are covered with our iron. Thousands of roofs and complete buildings all over the Dominion are protected by ACORN BRAND products.

Preston Safe Lock Shingles are a guaranteed proof against lightning. We guarantee this IN WRITING over the seal and signature of our company.

Acorn Corrugated Iron is used for a complete covering of the famous MODEL BARN which was shown at the National Exhibition, and which is being used by the best farmers of Canada.

## A SPECIAL BOOK FREE

We have just issued a book on Farm Barns and Buildings, showing reproductions of some of the best barns in Canada, together with letters from many of our customers. May we send you a copy free of all charges.

Clip the Coupon to-day and send it to us.

**The Metal Shingle & Siding Co., Ltd.**  
**Preston, Ontario.**

Send your Free Book as advertised in the O. A. C. Review.

Name.....

Address.....

# KELLY'S MUSIC STORE

Sheet Music    Music Books    Victrolas    Violins    Guitars  
 Amberolas and Records    Banjos    Strings

*Sole Agents for—*

## BELL ART PIANOS

"MADE IN GUELPH"

The piano distinguished for its beauty of case and clearness of tone, for its stand-in-tone qualities and for the Bell tone sustaining frame, the most wonderful support ever given to a piano.

### C. W. KELLY & SON

133 Upper Wyndham St.    -    Guelph

## Ontario Veterinary College

Under the Control of the Department of  
 Agriculture of Ontario

Affiliated with the University of Toronto

Established by Professor Andrew Smith, F.  
 R.C.V.S., D.V.S., in 1862, under the aus-  
 pices of the Upper Canada Board of  
 Agriculture and taken over by the Gov-  
 ernment of Ontario, 1908.

COLLEGE REOPENS ON THURSDAY,  
 OCTOBER 1st, 1914.

Calendar, 1914-1915 Sent on Application.

E. A. A. GRANGE, V.S., M.S.,  
 Principal

110 University Avenue. Toronto, Canada.

## The Kennedy Studio

Is equipped to produce the best  
 in **Groups** or **Individual Por-**  
**traits.**



A Students' Special in Photos  
 at \$1.50 a Dozen.



The Kennedy Studio  
 23 WYNDHAM ST., GUELPH

'Phone 498

## Stable Your Cattle the Superior Way



If you are thinking of building a new barn or remodelling your present one, I want you to know all about my **SUPERIOR SANITARY STEEL STABLE FITTINGS**

Consisting of Horse Stalls, Horse Box Stalls, Horse Stable Fittings, Cow Stables, Cow Stanchions, Maternity Pens, Calf Stanchions, Calf Pens, Bull Pens, Hog Pens, Water Bowls, Manure Carriers, Feed Carriers, Feed Trucks, Milk Can Conveyors.

Manufacturers of the only universal Rotating Adjustable Stanchion made. Get my 1915 Book; it is free; write to-day.

**SUPERIOR BARN EQUIPMENT CO.**

Geo. P. Maude, Mgr.

**FERGUS, ONT.**

## "CORN IS CORN"

Very true, corn is corn—but we have pop corn, sweet corn, field corn and almost endless varieties of each.

So when you dismiss the subject of cleaning with the thought that all washing agents are the same, may you not be overlooking the possibility that they are not.

We guarantee that after you have used one barrel of

**Wyandotte**  
*Polymers*  
**Cleaner and Cleanser**

Indian in Circle



you will note a very great difference in the cleaning it does compared with the cleaning any other washing agent does you have ever used.

It differs both in being more efficient and more economical. Can you afford to pass it without a trial?

Ask your dealer or order from your supply house.

In Every Package

The J. B. Ford Co., Sole Mnfrs., Wyandotte, Mich.

This Cleaner has been awarded the highest prize wherever exhibited.

**It Cleans Clean.**

# The Dominion Bank

GUELPH

CAPITAL PAID UP	. . . . .	\$5,990,000
RESERVE FUND	. . . . .	\$7,760,000

## A General Banking Business Transaction

Drafts bought and sold on all parts of the world

### *Savings Bank Department*

Special attention paid to Savings Accounts, Interest allowed on deposits of \$1.00 and upwards.

Every convenience will be afforded students for the transacting of their banking business.

## *Sweater Coats and Sweaters To Order*



Our goods are all HAND-FINISHED.  
They do not fray at edges and button-holes.

The pockets wear as long as the coats.  
Write for prices.



*Thos. Warren*

359 Spadina Ave.  
TORONTO



## Purina Chick Feed

SAVES Baby Chicks—Makes them sound and healthy

## Keep Purina Chicken Chowder

Before them all the time and Watch Them Grow.



Feed Purina Scratch Feed and Purina Chicken Chowder to your Laying Hens  
FOR PROFIT

Write us for 1915 Checkerboard Booklet and Learn the Purina Way

**THE CHISHOLM MILLING CO. LIMITED, TORONTO**

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



# The Royal Bank of Canada

Capital	- - -	\$11,560,000.00
Reserves,	- - -	\$13,500,000.00
Assets,	- - -	\$180,000,000.00

A General Banking Business done. Drafts issued to, or cashed from, all Countries; 374 Branches throughout Canada, West Indies and Cuba, and our own offices in London, Eng., and New York.

Savings Bank Department with separate room for Ladies.

R. L. TORRANCE,

Manager,

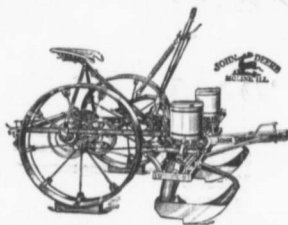
Guelph Branch.

## It Makes No Difference

Whether you are growing Corn for Seed or for Ensilage YOU will raise MORE and BETTER CORN with our

**JOHN DEERE No. 999 CORN PLANTER**

OBLIQUE SELECTION



VARIABLE DROP

52 years ago scientific farmers began using our planters. If it wasn't the right way then how can you explain the fact that we build annually 45,000? Ask for our book, "More and Better Corn."

**JOHN DEERE PLOW CO.**

77-79 JARVIS ST., TORONTO.

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



## A Safe Place For Your Savings

If you refer to the Government Reports you will ascertain that this institution is one of the oldest established of Canadian Banks, with a Surplus Fund of nearly double its capital and a high proportion of cash reserves. We invite deposits, large and small.

28

# The Bank of Nova Scotia

Paid-up Capital	- -	\$6,500,000
Surplus	- -	12,000,000
Total Resources	- -	90,000,000

GUELPH BRANCH:  
T. G. McMASTER, Manager.



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

## Locals

R. R. Graham—"When packing the cakes of ice fill the cracks with "chinks."

(Editor's Note.—A good suggestion for those who do not want to pay their laundry bills.)

### RIDER AGENTS WANTED

everywhere to ride and exhibit a sample 1912 Hyslop bicycle, with all latest improvements.



We ship on approval to any address in Canada, without any deposit, and allow 10 DAYS TRIAL.

It will not cost you one cent if not satisfied after using bicycle 10 days.

**DO NOT BUY** a bicycle, pair

of tires, lamp,

or sundries at any price until you

get our latest 1912 illustrated catalogue

and learn all about our special proposition.

The low prices will astonish you.

**ONE CENT** is all it will cost to

write us a postal,

and catalogue with full particulars will

be sent to you **Free, Postpaid,**

by return mail. **Do not wait.**

Write **now.**

**HYSLOP BROTHERS, Limited**

Dept. 28 TORONTO, Canada

## The Rosery

MISS E. S. MARRIOTT

FLORIST AND DESIGNER

51 QUEBEC ST., WEST  
GUELPH

PHONE 966  
SUNDAY 385L

## The Little Dutch Inn Tea Room

Lunch from 12-2 o'clock.

Afternoon Tea from 4-6 o'clock.

Arrangements made for Special or Evening Parties

## OSTEOPATHY

DR. GORDON V. HILBORN

DR. MARY SHERRIFFS

Eyes Scientifically Tested.

10 SUFFOLK ST., W., GUELPH  
PHONE 534



**PURITY  
QUALITY  
ADAPTABILITY  
TO OUR COUNTRY**

We pay railway freight to points throughout Ontario and Quebec on all orders of \$25.00 or over. Write for our 1915 Catalogue. We would like you to look it over.

**GEO. KEITH & SONS**

SEED MERCHANTS SINCE 1866

**124 KING STREET EAST, TORONTO**

**O.A.C. Students  
Co-operative  
Supply Store**

A Full Line of

**Agricultural Text Books**

**BOTANICAL SUPPLIES**

Plant Mounts,  
Labels,  
Weed Seed Vials, etc.

**ENTOMOLOGICAL SUPPLIES**

Insect Pins,  
Stretching Boards,  
Boxes,  
Butterfly Nets, etc.

**DRAINAGE SUPPLIES**

Paper  
Instruments, etc.  
Transportation Charges paid  
on orders of \$5.00 and over.

**STUDENTS'  
CO-OPERATIVE SUPPLY  
STORE**

O. A. College, GUELPH, ONT.

# Greenhouse GLASS

SINGLE AND DOUBLE STRENGTH

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Special Make, Flat  
and Nicely Cut Edges

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The Toronto Plate Glass Im-  
porting Co., Ltd.

91-133 Don Roadway - Toronto

## GEO. M. HENRY

Grinds skates concave and guarantees them  
not to stick. Give us a trial.

Also see us about hockey sticks.

THE RED FRONT STORE

63 Quebec Street

Phone 398.

## H. H. WORDEN

O. A. C. BARBER SHOP

Three Barbers. No Waiting.  
St. George's Sq. Cars stop at Door.

## PEEP SIGHTS

for Farm Drainage Purposes, as de-  
signed by Prof. W. H. Day, sent by  
mail to any address.

## H. Occomore & Co.

124-126 Wyndham St.

GUELPH

## *Military Equipment*

We are prepared to look after all your wants in military  
equipment, such as

TUNICS, TROUSERS, BREECHES  
GREAT COATS, BRITISH WARM  
COATS, FOXE'S SPECIAL PUT-  
TEES, LEGGINGS, SPURS,  
SWORDS, REVOLVERS, CAPS,  
STARS, ETC.

## *R. W. Waterhouse*

MILITARY TAILOR,

36 QUEBEC ST. W.

GUELPH

1915

O. A. C.

1915

STUDENTS should try some of our delicious *Bon-Bons* put up in all sorts of fancy packages — *quality* unsurpassed.

We cater to the best class of trade.



HOT DRINKS LUNCHES  
COLD DRINKS

*Everything for Refreshment*

**THE KANDY KITCHEN**

**PLOUGHING MATCHES.**

There was a time in Ontario and Quebec when the ploughing match was an event of importance in many localities. Later, interest in the matches decreased greatly, especially among the younger men. As a result, good ploughing and good soil cultivation have fallen back some points since the old days, except in the few districts where the matches have been continued. As the first-class ploughman is likely to be a good cultivator of the soil, agriculture, in general, has suffered. On the other hand, the farmer who regards ploughing merely as a process of turning over land, the sooner done the better, will not, and can not, be a good cultivator of the soil. Unless the soil is well ploughed, it is impossible to give the land the best of preparation for the seed.

It is encouraging to note, however, that the ploughing match is being revived, and that the Prairie Provinces

Continued on Page xlvi.



**Rexall Goods are Made  
in Canada and are Not  
Costing You a Cent More  
than before the War. . . .**

And what is more, a portion of every Rexall purchase goes to swell the Canadian Patriotic Fund being raised by The Rexall Stores of Canada, 400 of the Best Drug Stores in Canada.

Full list of **Rexall Toilet Goods**, **Rexall Remedies**, and other Rexall merchandise free at my store. Get one, and you'll realize how easy you can help and how much you can help relieve the suffering caused by the war, and at the same time help Canadian industry as well, by purchasing Rexall Goods at my store or any other Rexall store in Canada.

**McKees Drug Store**

The Rexall Store  
GUELPH - - ONTARIO

# LOOK!

Is there something in this list you would like to have:

ROGUEFORD CHEESE  
CREAM CHEESE  
CLUB HOUSE OLIVES  
BOVRIL EXTRACT  
OXO CUBES  
OYSTERS  
BISCUITS  
FRUIT

## Benson Bros.

25 Wyndham Street

**DIAMOND  
and SHIELD  
O. A. C. PINS**

**Leather Fobs  
Twenty-five Cents Each**

**SAVAGE & CO.  
JEWELLERS**



# SHOES REPAIRED

By the latest improved  
machinery in America,  
Promptly and Neatly at the

## Goodyear Shoe Repair Co.

50 Cork St. E., Guelph.

Telephone 957. PERCY T. KING, Prop.



### WAR! WAR! WAR!



Be Patriotic—Patronize the  
Britisher, not the  
Foreigner

We call for and deliver regu-  
larly, twice weekly. Special dis-  
count to O. A. C. Students.



## Guelph Steam Laundry . . .

"Ours Is Sanitary."



## ABSORBINE

TRADE MARK REG. U. S. PAT. OFF.

Removes Bursal Enlargements,  
Thickened, Swollen Tissues, Curbs,  
Filled Tendons, Soreness from any  
Bruise or Strain; Stops Spavin  
Lameness. Allays pain. Does not  
blister, remove the hair or lay up  
the horse. \$2.00 a bottle, delivered.

Book 1 K free.

ABSORBINE, JR., the antiseptic liniment  
for mankind. For Synovitis, Strains,  
Gouty or Rheumatic Deposits, Swollen,  
Painful Varicose Veins. Will tell you more  
if you write. \$1 and \$2 per bottle at dealers  
or delivered. Manufactured only by W.  
F. YOUNG, P. D. F., 177 Lymans Bldg.,  
Montreal, Can.



Cheaper than  
Home-made  
Ties

25  
Cents  
postpaid

Strong as two  
knots—but won't  
bind. Handy as a  
snap—but won't break

If you bought a good rope as  
the 1/2-inch Hard Rope that goes  
into this tie and fitted it with  
snap and ring—a flimsy thing  
at best—you would pay more  
than the price of Griffith's  
Handy Tie.

### Griffith's HANDY Rope TIE

So simple you can put it on or  
off with your mitts on. Strong  
and proof against slipping or  
binding. Live dealers sell them.  
If yours does not, we will  
mail one for 25c, postpaid  
(30c west of Fort William).  
Write to-day. Ask for our  
Book of Bargains, full of  
money savers, on sale  
everywhere.

G. L. GRIFFITH & SON  
DEPT. R  
Stratford, Ont.



**MOORE & ARMSTRONG**

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**Guelph's  
Ladies' Store**

Women's and Children's  
Garments

Dress Goods and Silks

Exclusive Millinery

Perrin's Kid Gloves

Northway Coats and Suits

Crompton's C-C a la Grace and  
Parisienne Corsets

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**THE WHITE HOUSE**

# FLOWERS

We carry the best selection of Cut Flowers in the city. When you want something choice call on us or 'phone 866. Prompt delivery and careful attention to all orders.

**McPhee, Florist**

Wellington Block.

**M. J. Rudell, D.D.S., L.D.S.**

Dentist

(On the Corner)

Over Guelph and Ontario Investment  
and Savings Society Bank

PHONE 16

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

Phone 719

44 Cork St.

**Jas. K. Readwin**

Pants Pressed	-	-	15c
Coats Cleaned and Pressed	-	-	25c
Suits Pressed	-	-	50c
Suits Cleaned and Pressed	-	-	75c
Suits Dry-Cleaned	-	-	\$1.25
Velvet Collars	-	-	75c to \$1.50

Monthly contract, special rate. Goods called for and delivered.

**C. E. HEWER**

49 Quebec St. West

Cleaning, Pressing & Repairing.  
Goods called for and delivered.

**Phone 808**

Pants, pressed	.....	\$0.15
Pants, cleaned and pressed		.25
Coats, pressed	.....	.30
Coats, cleaned and pressed..		.40
Suits, pressed	.....	.50
Suits, cleaned and pressed..		.75
Dry Cleaning Suits.....		1.50

Monthly contracts for Students. Moderate charges for alterations.

**CUT FLOWERS**

Choice Cut Flowers always on hand. Roses, Carnations, Valley, Violets and all Flowers in season.

**GILCHRIST'S**

Phone 436.

St. George's Square.

**R. H. McPherson**

Barber

Get your hair cut at 145 Wyndham street. An extra barber employed at the highest wages for your sake.



## The Guelph & Ontario Investment and Savings Society

Incorporated A. D. 1876.

Capital Subscribed \$1,000,000.00

Reserve Fund - - - \$524,044.00

Assets - - - - \$3,415,877.19

Debentures issued for One Hundred Dollars and over, for five years at 5 per cent., payable half yearly.

Deposits of One Dollar and upwards received and interest paid, or compounded half yearly.

Office: Society's Building, corner Wyndham and Cork Sts., Guelph, Ont.

J. E. McELDERY,  
Managing Director.

## College Printing is A Specialty With Us

Every order receives the personal attention that ensures the delivery of the better class of work. Consult us about your printing.

We have an exclusive range of Novelties for

## College Functions

Something that will please you. Come in and see the samples.

## The Guelph Herald

PRINTERS AND DESIGNERS  
OF GOOD PRINTING

Herald Building, - Douglas St.

GO TO

## PETRIE'S

FOR

## Drugs, Kodaks and Confectionery

2 STORES

Our Kodak Department is at your service. We develop and print, also carry a full line of supplies for Kodaks and Cameras.

Our Confectionery Department—For fresh candies, ice cream and lunches.

A Box of Chocolates may have been fresh when first packed, but how can you tell by looking at a sealed box? Petrie's chocolates are made in Guelph—fresh every day—shown to you in an open box, and are sold only by Petrie's two stores.

COR. WYNDHAM AND McDONALD STS.

## Fine Job Printing

We execute the finest grades of printing, plain or in colors, promptly. Put us to the test.

## Kelso Printing Co.

FLOUR

SNOWDRIFT - - - Manitoba Patent Flour

PEOPLES - - - Blended Flour

DICTATOR - - - Pastry Flour

Made from the choicest of Canada's Wheat

We will ship to any place.

Write us immediately for prices.

THE

James Goldie Co., Ltd.  
Guelph - Ontario

FALL AND WINTER SUITS  
AND OVERCOATS AT \$15.  
"MY TAILOR"  
49 CORK STREET

Continued from Page xlii.

also are taking a keen interest in competitions of this kind. If they are beneficial as an aid to better farming on the virgin prairie they are of even greater value in the older parts of the country, where the land needs more careful working to maintain soil fertility and increase crop production. Good ploughing is a matter of good ploughmen as well as of good ploughs and, as these matches encourage good workmanship, they are worthy of support by all interested in better farming. As they have an educational value and often give the boys the needed encouragement to remain on the farm, ploughing matches might well form one feature of the work of the Farmers' Club, Farmers' Institute, or Agricultural Society.—F.C.N.

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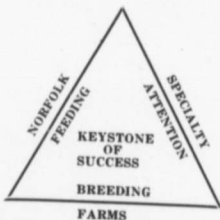
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