

Volume XXVII.

Number 5

O.A.C REVIEW

February

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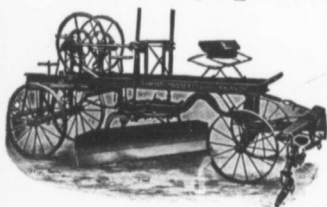
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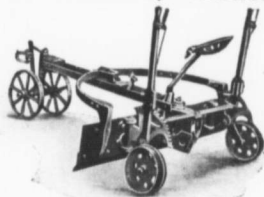
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CONTENTS

VOL. XXVII. FEBRUARY, 1915. NO. 5

	Page
A Pioneer Industry, by W. J. Kerr, '15.....	187
Gleanings from a Trip to Australasia and the Orient, by Dr. G. C. Creelman	190
Why Spring Care of the Orchard? by W. J. Tawse.....	195
Baby Chicks, by W. Bennett, '15.....	197
Agricultural Short Course, by J. M. Varey.....	199
The Vineland Experimental Farm, by O. J. Robb, '15. . .	201
Co-operation in Advertising	203
The Experimental Union	205
Agriculture in Public Schools in 1914, by Prof S. B. McCready.....	207
Cartoon	213
Editorial	214
Athletics	216
College Life	218
Alumni	220
Macdonald Hall	225
Locals	229

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THE O. A. C. REVIEW

THE DIGNITY OF A CALLING IS ITS UTILITY

VOL. XXVII.

FEBRUARY, 1915.

NO. 5.

A Pioneer Industry

By W. J. Kerr, '15.

AN industry without a slum problem? An industry without smoking factories and whirling machinery and a labor union? Impossible. The Wall Street broker knows that it doesn't exist in the twentieth century.

But it does exist. It is as old as America and its history is a part of American tradition. The modern method of evaporating maple sap may give a lighter colored product that will sell for more money, but its vaunted excellence comes at the expense of the charming old fashioned method of our folklore. It may be supposed by many that the old way is no more, and that to get an idea of its delights one must resort to the literature of a dead past. This is not correct, however. In the remote part of Ontario and Quebec maple sugar making is carried on as in the days of our grandfathers.

When the March sunshine and the south wind begin to coax the dormant things of nature into new life, the habitant, for he is still the habitant, feels in his blood the spirit of the spring. That spirit always speaks to him and to the boy in terms of the sugar bush. The habitant knows the proper day on which to start operations and so does the boy. They know just as the blue-bird knows when to venture on its northward flight. They

read the message that nature sends to all her children at this time.

The day is clear and bright with a yellow haze over the sunrise. The air is crisp and the snow lies deep over wood and clearing. The habitant lashes on his snowshoes on this morning and proceeds to the maple bush to overhaul the troughs and spiles and to select the site of the camp. In a small thicket on the river flats he finally sets down his dinner pail by a tree trunk and covers it over with snow to keep out the frost. This is an ideal location for the camp. The balsams grow thick on all sides. This will shield the fires from the wind, and the thicket is on a knoll which will ensure a dry spot when the snow begins to melt. And now the work begins in earnest. The man clears away a little amphitheatre and piles the brush neatly. All the evergreen boughs are kept by themselves for use later on. Two stout crotched stakes are cut from a sapling and planted firmly in the earth. This is a hard, slow job if the frost is in to any considerable depth. On these crotched uprights a cross-bar is placed, which will support the kettles by-and-bye.

Of course the boy is everywhere. He makes himself particularly busy at building a fire and making tea for the mid-day luncheon. A log is rolled

close to the fire and covered with spruce boughs and with a carpet of balsam under their feet the boy and the man sit down to eat their pork sandwiches and drink the strong tea that the boy has made. A chick-a-dee hops about with a busy chick-chick, gathering a repast from the disturbed brushwood, while a squirrel chatters saucily at this wanton intrusion of his domain. Mysterious noises come from the deep wood back on the creek. The fire crackles and the smoke curls among the tree tops. This is one of the biggest days of the

side to the blocks. The habitant now splits a thin slab off the long side and on the flat surface thus produced he hollows out a trough. This is done with great dexterity and speed. The camp is constructed of poles covered with fir boughs on sides and roof. A few blocks of wood supply seating and a carpet of evergreen boughs completes a sylvan retreat that talks to the boy in the language of fairy-land.

The spiles are split out of slabs of pine, two inches thick. The tapping gouge is used as a wedge to do the



Scene in the Sugar Woods.

whole season to the boy; the first dinner out.

Here and there over the tapping area the troughs of last season have been piled in little heaps of a dozen or so together. Many of these will be leaky, and so a new supply is now made for emergencies. A tall straight basswood about sixteen or eighteen inches in diameter is selected and cut into lengths of two feet. The cutting is done with the axe and all on one side of the trunk, so that each section is bevelled at both ends. This gives a long side and a short

splitting, and this gives each spile a concave surface. The spiles are eighteen inches long and about one-quarter inch thick. When the concave end is nicely trimmed off it will exactly fit into the gouge cut in the maple trunk.

When the preparations are all complete the habitant returns home to await the coming of sap weather. This is a time of trial for the boy. He watches the sky anxiously and notes with displeasure any signs that may indicate protracted winter weather.

The day comes at last. When the boy steps out of the house in the morning he knows that this will be a "sap day." The hammering of the red head echoes among the hills. The softer drumming of the partridge blends with the call of the crow. From a neighboring farm house a pillar of grey smoke curls into the sky. At breakfast the habitant announces that "sap will run." The boy is now thoroughly aroused. The man takes his axe; the boy carries the tapping gouge and mallet, and with snow-shoes slung over their shoulders they start for the woods walking on the crust.

The tapping is started at once. With his axe the man makes a slanting cut straight into the trunk of the maple. With the next blow he cuts out a chip and then drives the tapping gouge into the tree just below the lower corner of the cut. The boy hammers a spile into the gouge cut and adjusts a trough to catch the sap and the tapping is done. When all the trees are tapped the kettles are slung and the fire is kindled. Everything is cleaned and made ready for the morrow, when the sap will begin to come in.

Sap gathering commences in the early forenoon before the sun has softened the crust. The work can be done without snow-shoes at this time. And now the fires are started and soon the kettles are seething. A barrel elevated on a buttress serves as a supply tank. A tiny stream of sap is allowed to run from this reservoir through a basswood bark spout into the big kettle. The boiling sap is dipped from the large kettle to the smaller one at intervals, where it becomes further concentrated. The camp is now in full swing, and his

first wild joy being spent, the boy settles down to tending the fires and watching the kettles that they do not boil over. To obviate this danger he has suspended a pork rind directly over the kettle so that it will hang an inch or so below the rim. This has a magic effect whenever the contents threaten to go over. In the evening all of the concentrated sap is dipped into the small kettle and allowed to boil down. In order to clarify the syrup the white of an egg is added to the boiling sap. As boiling proceeds the mass becomes thicker and the bubbles on the surface become larger. The boy gets a hazel wand which tapers to a fine point and ties a loop in the end. With this he dips out a film of syrup and blows fantastic bubbles. When the syrup will bubble it is ready to turn off. If the syrup is to be made into sugar it must be boiled until quite thick and stirred to give the sugar the desired grain.

Sugaring off is always a time of excitement, and usually takes place at night. The weird effect of the camp fire, the mystery of the woods, the consciousness of the hundreds of wild things that are observing every movement, combine to produce a feeling of awe that tempers and subdues the excitement of getting the sugar off at just the proper moment.

Days pass with varying success. As the weather grows warmer the sap flow lessens. Finally it is decided to close down for the season. On the evening of the last day the young people from the neighboring farms begin to straggle into the camp, and merry laughter awakes the echoes and makes the wood folk start in new wonder. A circle of happy faces surrounds the fire as the little kettle begins to bubble up and show signs of

thick syrup. At a certain point in the boiling the kettle is hastily removed from the fire and the contents turned out on snow gathered fresh and clean for the purpose. The taffy, one of the most delicious of sweets, is enjoyed by all. The party now returns to the habitant's home.

Here all is merriment. The fiddler is tuning his instrument. The boy

alone is disconsolate. He is no longer the popular hero. He sits in the background.

Suddenly a deep voice calls out in a monotonous sing song "All join hands and corners address!" The company instantly responds, and the shuffling and stamping of feet, fairly shakes the house on its foundation. This is the last act in the drama of sugar-making.

Gleanings From a Trip to Australasia and the Orient

By Dr. G. C. Creelman

DR. George C. Creelman, B. S. A., president of the Ontario Agricultural College, recently returned from a five months' tour of New Zealand, Australia, the Philippines, China and Japan. In his journey of 26,000 miles, in which he was accompanied by Mrs. Creelman, he collected a store of interesting information, agricultural, political and general. Leaving Victoria, B. C., on the day that war broke out, Dr. and Mrs. Creelman proceeded to New Zealand, via the Hawaiian Islands. Occupied about seventy years ago by the British, New Zealand has about the same area as Great Britain. It has a delightful climate, which has been described as "wine without the headache," and the lowest death-rate in the world. The soil is very fertile and the colony is remarkable for its aggregate production, relative wealth and the financial ease of its population.

Practical Imperialism.

Dr. Creelman was surprised to find that the Canadian Club idea has been adopted at the Antipodes and that

there are already many New Zealand Clubs at which the members take luncheon while listening to public speeches upon current topics. As yet the New Zealanders seem to know comparatively little of the sister Dominion of Canada, but they are so strongly attached to the Mother Country that despite the six weeks' ocean voyage, the sons of the well-to-do still attend the great schools of England, finishing at Oxford or Cambridge. We know the alacrity and enthusiasm with which the population of one million, years ago assumed more than their share of the Imperial defence burden, and we know that at this moment the battleship "New Zealand" helps to blockade the German navy in the North Sea. Another evidence of the strong practical Imperialism of the New Zealanders came under Dr. Creelman's notice. Three weeks after the war began, the Premier called upon the farmers of the colony to grow all the wheat possible, as an Imperial duty. The response was immediate. As one travelled through

the country during the next few days he saw conservative farmers breaking up sheep runs in all directions and planting more wheat than they had in the past twenty-five years.

Proud of the Maoris.

Dr. Creelman was greatly impressed with the Maoris, the unique native race, which, although not conquered until the middle of last century, are the warmest friends and allies of their conquerors. They are a fine race, physically, manly, and yet delightfully gracious in bearing, poetic in temperament, chivalrous, and with a natural gift for oratory. In contrast to the Canadian Indian, the Maori and his wife both have the vote, and leading Maoris occupy seats in the Legislature and are highly respected members of the Cabinet. The white people are very proud of their colored citizens, upon whom they have bestowed an equal citizenship. The origin of the Maoris is obscure, but it is probable that they came originally from India.

SPLENDID SUBURBAN SERVICE PRIDE OF AUSTRALIAN CITIES.

In Australia, 1,200 miles by sea voyage from New Zealand, Dr. Creelman found much to interest the agriculturist. The Commonwealth, which comprises 3,000,000 square miles, is 2,500 miles long by 2,000 miles wide. Nearly as large as Canada, it is larger than the United States, less Alaska, three-quarters the size of Europe, and territorially one-quarter of the British Empire. It lies one-third in the tropics. Everything is done on a large scale—on a much larger scale than even in Canada. The farms range from 100 to 30,000 acres in

extent, while big farms, or "stations," as they are called, include as much as 1,000,000 acres.

Large Farms an Obstacle.

The large farms are an obstacle to the modern Australian policy of closer settlement. They make it difficult to homestead new settlers near a market. The proprietor with a 30,000 acre farm finds little temptation to break it up, because he can operate it with twelve hands, as his stock runs outside all the year round and is herded only for branding or shearing. Under these conditions, the newcomer in search of a homestead has to go far afield, so the Government some time ago adopted the policy of buying out large farmers here and there and sub-dividing their property. The policy is being carried out effectively both in Australia and New Zealand. In Australia the endeavor is to include in each farm a goodly proportion of fertile soil, and a portion of inferior land for grazing or timber-growing purposes. The Government adds to the purchase price the cost of surveys and roads, and sale is made to the settler on easy terms. Such partly improved land can be bought in Australia or New Zealand at from \$25 up.

Problem of Irrigation.

At present Australia is more concerned with irrigation than with any other question. The primary difficulty is that there is not enough water in the rivers to supply even that portion of the country lying between the mountains and the sea. Some experiments have been made with artesian wells 1,500 to 2,000 feet deep, but the cost of water got in this way is likely in most instances to be prohibitive. Where irrigation

is successful, the exceedingly fertile soil yields phenomenal crops, and the farmer can make an annual net profit of \$5,000 out of dairy cattle and poultry on 50 acres of land. There is, of course, in this mild, dry climate no outlay for buildings and no need of cutting or storing feed. The irrigated farms are proving most useful as stock farms for the production of pure bred cattle and sheep for distribution as breeding stock for the outer stations.

Australia is peculiarly British, perhaps more so than the Mother Country itself, 96 per cent. of the population having been born either in Australia or Great Britain. Despite high Imperial sentiment, there is an exuberant national spirit disturbed only by state differences. Confederation was so long in coming that the several state units developed very strong local characteristics, including different franchise systems and different gauged railways. For instance, in travelling between the two chief cities of Sydney and Melbourne one has to change trains at the Provincial or State border.

A Large Defence Force.

The national expenditure on the navy is \$1.70 per capita per annum. For the purpose of land defence, school cadets from 12 to 14 years of age must drill 90 hours a year, the senior cadets, from 14 to 18 years of age, 12½ days and 24 evenings, or the equivalent thereof, and the citizen forces, from 18 to 25 years of age, 16 whole days a year. The consequence is that the Commonwealth has a defence force of 170,000 trained men, which fact made it comparatively easy to equip and despatch an expeditionary force to the European battle-line. Aus-

tralian, by the way, are inclined to laugh at Canada for its unpreparedness when the war broke out, but there was a revolution in sentiment at the promptness with which the Dominion Government contributed vast quantities of food and a large body of troops for the defence of the Empire.

Social Legislation.

Dr. Creelman discovered that the Labor party now in power in Australia is not so much a Labor party as a political party. The Fisher Cabinet contains as large a proportion of lawyers and professional men as an ordinary Canadian Government. The Australians seem particularly proud of their minimum wage laws, old age pensions, maternity allowances, factory laws and other social legislation. In 1912, \$3,000,000 was paid out for maternity allowances, and yet there is no evidence of an increase in the size of families. The workman's creed is:

"Eight hours to work,
Eight hours to play,
Eight hours to sleep,
And Eight bob a day."

The Minimum Wage.

Dr. Creelman said: "Observation seems to show that the minimum wage has increased rather than decreased unemployment. Having to pay higher wages, the employer engages the most efficient men, and, as a consequence, there is some grumbling among the less efficient who are left out in the cold. Australia has more anti-strike and more anti-lockout legislation than any other country, and yet it has probably a greater number of strikes and lockouts than any other part of the world."

There is observable in Australia

the same drift of population to the cities as is to be found in Canada and elsewhere. Dr. Creelman noticed some very attractive features of urban life in the Commonwealth. Sydney is about the size of Toronto, and Melbourne about the size of Montreal, but in both cases the people live and sleep largely in the country. In this they follow the English precedent, based on an excellent suburban rail service. No less than 1,500 trains a day carry 200,000 people from their rural homes to their work in Melbourne. Moreover, so widespread is the love for flowers that the majority of these workers descend from the trains carrying bouquets plucked from their own gardens. So general is the practice that in the morning hours floral processions appear to be emerging from the railway stations.

Botanical Gardens.

The national fondness for horticulture has led every considerable town in Australia and New Zealand to establish a beautiful botanical garden in its midst, and this garden is one of the sights to which the visitor is introduced. The people of the Commonwealth are extremely hospitable, strangers being everywhere welcomed with open arms. They are much given to outdoor sports, and there is a horse-race in Australia every day in the year, excepting on Sunday. As a people the Australians are almost if not quite as boastful as the Americans, and they like to talk of their own enormous resources, but perhaps Canadians are not exactly fitted to take the lead in making such a charge. A peculiar thing about Australia is that the harsh Cockney accent has been almost universally adopted.

CHINA STILL UNORGANIZED.

From Australia, Dr. and Mrs. Creelman travelled three weeks by Japanese steamship to the Philippine Islands. British steamships on the Pacific have largely been withdrawn for war purposes, and as a result the business is very largely in the hands of the splendid Japanese mercantile marine, with some slight competition from American steamships. A curious fact is that the Manilla Club, the oldest social institution in the capital city of this American dependency, admits only British-born to its membership.

Hong Kong, Canton, Shanghai.

Another 1,000-mile journey on a Japanese steamer brought Hong Kong in view. The city of that name is sheltered from attack by a number of strongly fortified islands, stretching out some miles to sea. A night's sail from Hong Kong is found the nearest typical Chinese city, Canton, with its population of 3,000,000 natives, 500,000 of whom live in boats all the year round, their occupation being fishing and the carrying of small cargo from one part of the city to the other. Four days' steaming up the Chinese coast brought the travelers to Shanghai, the commercial capital of the country, with an immense shipping trade.

As a mass the Chinese people seem to be infinite patience personified. But here in Shanghai the men are big strapping fellows, many of them keen in business and of independent views. It is estimated that not four per cent. of the people of China take any interest in politics or know anything about the government of their country. The masses are unaware that the Empire has been changed to a Republic. The wide differences

between the provinces in language and in monetary systems goes to show that the vast country is really a series of nations, and for this reason alone western civilization need not fear any aggressive move, either military or commercial from a united China for a long time to come.

RAPID ADVANCE OF JAPANESE

The Japanese ship on which Dr. and Mrs. Creelman left Shanghai took on a cargo of eggs for British Columbia, some of which are now possibly being sold in Canada as new laid. Contrasted with unorganized China, efficiently organized Japan was something of a surprise. The wagon roads, railroads, telegraph and telephone systems are built, owned and operated by the strong central government. At the important port of Nagasaki there is a commercial museum containing specimens of the world's latest inventions. The collection is added to by every steamer that arrives from foreign parts, and native workmen are expert and indefatigable in copying and adapting new devices. A considerable export trade in manufactures is being built up. In October and November British merchants were already in Japan, buying shiploads of toys and other novelties to take the place of goods generally bought in Germany. According to Dr. Creelman, while both China and Japan are still rice-eating countries, many natives now take one European meal a day and some even two European meals a day. The opening for Canadian wheat and flour is certain to grow. The average Japanese farm is $2\frac{1}{2}$ acres in extent. Compare this fact with the fact that many Australian farms comprise

1,000,000 acres, and the pressure of Japanese population for an outlet can easily be understood. The Japanese must have room elsewhere, but they desire territory near at home, preferably some of the Pacific islands, and have no designs on America or other distant lands.

Fall of Tsing Tau.

Dr. and Mrs. Creelman were in Tokio when Tsing Tau fell, and the victory was celebrated for several days. It was obvious as one travelled through the country that the military spirit is strong. Scouting parties were to be seen in all directions, and when Dr. Creelman left the country in November no less than 1,000,000 were in camp under arms. At that time the Government was not proposing the despatch of troops to Europe, but in the army itself there was a widespread desire for experience on western battlefields.

Between Australia and British Columbia, Dr. and Mrs. Creelman travelled for 12,000 miles on Japanese steamers. The Japanese boats are remarkable for being on time. On leaving Hong Kong, Dr. Creelman asked the captain when he expected to reach Victoria, B. C. The captain replied, "At twelve o'clock noon on November 17th." Despite much stormy weather on the way across the Pacific, the Victoria clocks were striking twelve when the gang plank was being put out to the pier in Victoria Harbor.

Social Characteristics.

Dr. and Mrs. Creelman were much struck by the delightful social characteristics of the Japanese. At every turn in city and country one came upon grandparents, parents and children all enjoying themselves together and never in one instance

were parents heard scolding children, or children seen quarrelling with one another. As they went about together the elders took an obvious delight in pointing out trees, flowers and other objects of beauty to the little ones. A uniform respect is shown to elders, and when a little Japanese miss enters a home the inmates bow to her as if she were a lady, and she returns the salutation with interest.

Reverence for ancestors is universal. The son carries flowers every day to his father's grave, generally taking his own son with him, and when he goes to his rest, that son honors him in the same way. It is said that the Japanese language contains no "swear words," and when Japanese see foreigners quarrelling

they walk away in disgust. The Japanese religion seems to be summed up in kindness, affability, love of flowers and a delight in all things beautiful.

Heretofore, Canada's ocean-carrying trade has been largely with Europe, but Dr. Creelman is greatly struck with the possibility of commerce between the countries bordering on the Pacific. There are about 150,000,000 people in North and South America and about 900,000,000 people in the countries bordering on the other side of the Pacific. Cheap water transportation is the medium of communication between these two huge populations and trans-Pacific trade is bound to develop rapidly with the years.

Why Spring Care of the Orchard?

By W. J. Tawse, '15

THE question where are we going to find a market for our apples and other fruits this coming season is being asked by many Ontario fruit growers. With the European markets completely demoralized by war and the 1914 crop not all sold the prospects are not the brightest. One outstanding feature of the marketing of this past season's crop was the lower prices on all grades, but especially on the lower grades. This fact must be realized by even the average grower, that, though the crop of apples was very large the best grades found a ready market and returned a fair profit.

The Ontario fruit grower has much to learn from his Western competitors in not only caring for his orchard but in packing and selling his crop. The British Columbia growers have

sold their entire pack at fair prices. The Ontario fruit is just as fine in quality and perhaps better; but the growers here ripen too high a percentage of wormy, scabby fruit.

Some growers claim pruning is the one great factor. It is only one step toward success. Pruning must be done thoroughly and systematically if the trees are to be kept growing properly for efficient spraying and cultivation. The pruning should be done in February or March, and all the trimmings burnt by the end of March. This precaution destroys many insects and diseases.

Spraying is absolutely necessary in the production of clean fruit and in keeping the trees free from insects and fungus diseases. The keynote of successful orcharding lies in thorough spraying. The first spray should be

applied before the buds burst, using concentrated lime sulphur testing 1.030 sp. gr., or in districts affected with San Jose scale, 1.032 sp. gr. This spray controls Oyster Shell scale, Blister Mite and also assists in controlling scab and canker.

The second spray should be applied just before the blossoms burst, using concentrated lime sulphur testing 1.009 sp. gr. and a poison added of 2 or 3 lbs. of arsenate of lead to each 40 gallons of the mixture. This spray controls the tent caterpillars, case bearers, canker worms and bud moths.

The third spray is used as soon as four-fifths of the blossoms have fallen. Bordeaux, 3-3-40 and two pounds of arsenate of lead as a poison controls the Codling Moth and scab.

Cultivation should commence as soon as the land is dry enough to work properly. This is important if the soil moisture needed later in the season to mature the fruit is to be conserved. Conservation of soil moisture in the spring by early cultivation is often the determining factor in the development and ripening of the crop.

The orchard if ploughed late in the fall is in much better condition for early cultivation, but spring ploughing is not advised by the best growers. The best implement for early cultivation is the double action cutaway disc. It can be set to cut deep or shallow as the operator desires. It leaves an even mulch on the soil and keeps the land clean. Later the spring-tooth cultivator may be used to cultivate close to the trees and maintain a good mulch.

Cultivation renders the plant food more available by working in the air and holding the moisture, which keeps the soil conditions favorable for chemical and bacterial action. It also permits the use of leguminous cover crops for returning nitrogen to the soil. It has been proven that all the nitrogen necessary for orchard practice may be supplied in this way. Cultivation also destroys the pupae and larvae of many insects attacking the fruit and trees.

When the various factors entering into production are summed up it becomes evident that the spring care of the orchard determines the quality of the crop.



A Homemade Spraying Outfit.

Baby Chicks

By W. Bennett, '16

WHAT is there more attractive and interesting than a brooder full of strong active scratching baby chicks. They draw attention even from the casual observer, and often are the means by which "victorus" are inoculated with the "bacillus" that ultimately develops into the most violent attacks of chicken fever.

Baby chicks, if the whole truth were known, are also the direct cause of a large percentage of the convalescents when it becomes necessary for many to make an exodus from the business.

To produce vigorous chicks, the kind that will live and reproduce the flock, it is necessary to know the pedigree of the parent stock from which the eggs are obtained.

As vitality is inheritable, just the same as any other character, it is essential that they should be bred with this point always in view.

The parent stock should be reared on range conditions and housed in dry, well-ventillated quarters. Also the hens from which the eggs are obtained, especially those of the heavy breeds, should not be over-fed. The rations should not be too narrow and thus cause a phlegmatic condition nor too fattening and cause sluggishness and fatty degeneration. Either of these would come by over-feeding of rich rations. Meat should be fed only with great caution. Whole grains should be fed in the litter to induce exercise and a limited amount of green feed with abundance of oyster shell and fresh water given.

Only eggs which are under seven

days old, clean and uniform—neither too large nor too small—should be set. They should be stored in a dry place with a temperature of about 60 to 70 degrees Farenheit. Some advise turning them, but this is not essential. Very little need be said here about incubation. So, considering that the standard machine has been used and instructions carefully followed, I will pass on to the chick itself.

If a normal temperature has been maintained the majority of the chicks will have hatched by the middle of the 21st day, but unless ideal brooding equipment is used it will be found wise to leave them in the incubator until they are at least well dried and on their feet.

The heat should be maintained at the incubating temperature, but it will be found wise to open all ventilators and to prop open the doors about half an inch to be assured of ample ventilation.

The brooder should be prepared for their reception by this time; cleaned, disinfected and a uniform temperature maintained for some hours previously. Clean cut straw or shavings, absolutely free from mold or must, should be spread on the brooder floor.

When all is in readiness the chicks may be moved, care being taken to avoid all chance of the chicks becoming chilled in transit. Also after they are placed in their new quarters it is very necessary that they should not be allowed to wander too far from the source of heat. This may be done by placing a board across the coop in

front of the hover. After they are old enough to know where to find the degree of heat they require this may be removed.

Feeding should not commence until the little charges are at least thirty-six hours old. It should consist of fine grit and water or what is much more to be preferred, buttermilk. This is considered one of the very best things that can be given to little chicks.

Stale bread soaked in milk is very good for the first few feeds, and later chick-feed may be alternated with it. After the first few days chicks should be fed five times a day until they are three or four weeks old. The chicks' feed given for the morning, noon and evening feeds and a crumbly mash at intermediate periods.

Infertile eggs boiled for half an hour and chopped up very fine—shell included—together with several times their bulk of oatmeal, makes a desirable mash for the first two weeks.

Later this may be substituted by wheat bean, cornmeal and oatmeal mixed into a crumbly condition, with skim milk or buttermilk. The mash food given should be fed in troughs and the chick feed in the litter to promote exercise.

Green feed should be supplied from the first. Lettuce, oat sprouts or cut clover is very good, but whatever is given must be free from mold. If this precaution is not taken trouble will surely be encountered. One of the greatest difficulties with the average hover is to secure a sufficient inter-

change of air. This can be largely overcome by using one of the up-to-date brooder stoves instead. But the average person will not likely have a sufficient number of chicks to warrant the use of one of these, and therefore must make the best of the lamp-heated hover.

It is not necessary to be continually watching the thermometer to run the brooder. A surer guide is the appearance of the chicks. If they are comfortable when under the hover at nights they will be spread out with their heads peeping out from under the felt and will never show any inclination to bunch together.

Any bunching or huddling under the hover is evidence that the hover temperature is not sufficiently high, whereas a tendency to remain outside the hover is an indication that it is too warm under it.

It is usually advisable when leaving the little chicks for the night to make sure that they have a sufficient amount of heat, as the hovers generally get cooler during the night.

It should never be necessary to coddle the chicks and they should be gradually hardened off. If they are properly hatched and well-bred they will run boldly from the brooder into the chilliest sort of out-door weather scratching and hurrying for something to eat and then scampering back again to get warm.

The first two or three weeks of a chicken's life is the critical period, and after this is past, if it is normal, it will need very little further brooding except in cold weather.

Agricultural Short Course

By J. M. Varey.

NOW that agriculture is becoming more recognized as a science from year to year, the young men who select this as their life work are anxious to learn all they can about the subject. In order that they may have an opportunity to get the desired information the Ontario Department of Agriculture is assisting them to a great extent through the office of the District Representatives. In almost every County which has a representative, a four or six weeks course is conducted at some central place in the County during the winter months, when work is slack on the farms. This course is free; any young man may attend it by making application to the District Office. As no text books are required the only expense the student has is his travelling expenses to and from the place where the course is held, and his board while there.

The programme of studies taken up is so arranged as to best meet the local needs of the County. A large field of studies must be covered in order to give every student some practical information along his particular line and to stimulate within him the desire to make further investigation by reading farm journals and agricultural text books. There are students who attend to get instructions on fruit-growing and market gardening, but who care very little for live stock or general farming, while there are others who are not interested in fruit-growing, poultry or bees, but who come solely for the judging and caring of live stock. There are also those who come for the

poultry alone. Therefore, in order that none of the students may go home and feel that they did not get special training on their particular line it is necessary to cover a large field in a very short time.

It is no holiday for the Representative and his Assistant during this course if they take the work up in earnest and go at it with the idea of making it a success. Difficulties will arise from day to day which will give them numerous opportunities to employ their ingenuity. No matter how carefully the programme has been arranged it will be necessary to alter it on several occasions, due to conditions over which they have no control, such as a stormy day when it has been planned to visit some local stock farm.

The students who attend these courses are young men who have been out of school for one or more years and are not accustomed to sitting quiet for three hours at a time. Therefore, if the lecturers are going to hold their attention for that length of time they must not only make their addresses instructive, but also have them so well prepared that they can make them interesting, especially to those who are not engaged in that particular line of work.

The forenoons are devoted to lecture work on various subjects, while in the afternoons practical work is taken up in judging live stock, grain and seeds, the grading of samples of clover and grass seeds, the identification of weeds, weed seeds, injurious insects and plant diseases, the box packing of apples and the pruning of

fruit trees. Visits are made by the class to local stock farms where practice is given in the use of the score card, the judging of the classes of animals and the writing reasons. A visit is also made to some near by orchard, where a demonstration is given in the pruning of the different kinds of fruit trees.

During the lecture periods nearly all the subjects relating to Agriculture are discussed to a limited extent. The work of live stock consists of instruction in types and breeds of the different farm animals, the breeding, feeding and caring of live stock and the importance of pedigree. In field crops the importance of different kinds is taken up and the most suitable varieties of each for local conditions pointed out; with special instructions on the growing of corn and alfalfa. A considerable amount of time is devoted to the discussing of the following subjects: The care of fruit trees, the home garden, the storing of apples and vegetables, the method of spraying and the use of the different kinds of spray materials, poultry in regard to the housing, feeding of laying hens, the rearing of chicks and the marketing of eggs and poultry; the various types of soil, the benefit of tile drainage and the methods of installing the tile, the use of artificial fertilizer and the care and handling of farm yard manure. One or more lecture periods is devoted to the following subjects: Bee keeping, entomology in relation to the orchard, garden and field crops, veterinary science including the common ailments of farm animals, bacteriology in relation to water and milk supplies, farm dairying, co-operation, farm book-keeping and arithmetic.

A literary society is organized at

the beginning of the course and a part of every Friday afternoon is devoted to literary work in the form of the writing of letters and compositions, public speaking and debating. Probably this part of the course is more appreciated by the students than any other. While some of the students are rather reluctant about taking the topic to speak on, they always speak in the most commending terms of this part of the work after the course is completed. Very often they have never made a speech before and feel timid at first, but it is amazing the progress they will make during the month. Every student has an opportunity to speak one or more times during the course and each speaker is criticised by the instructor.

Students who have taken this course are eligible to enter "The Baby Beef Competition" and "The Hogs for Profit Competition," also they may compete in the growing of an acre of some crop which has been decided upon by a majority vote of the class sometime during the course. The object of this latter competition is to get the largest return from an acre for the amount of labor expended in its production.

At the close of the course which I assisted Mr. Laughland, District Representative of Simcoe County, to conduct last winter in Barrie, we had the class organized and each member took up some line of experimental work. Some took up the testing of the different varieties of grains and corn, while others conducted experiments with artificial fertilizers. The reports of these different experiments were sent to our office, in Collingwood, and we prepared a tabulated statement showing the results obtained from the various tests. A

copy of this was sent to each member of the class. This not only tends to hold the class together, but the information gathered from these experiments is of great local value.

By having the classes from year to

year linked together, in the near future, an organization of young progressive farmers will be developed in each County, which will be a powerful factor in bringing about better agricultural conditions throughout this Province.

The Vineland Experimental Farm

By O. J. Robb, '15

THE history of this Experimental Station dates back to the year 1906, when Mr. M. F. Rittenhouse presented to the Ontario Government a piece of land for the purpose of establishing a purely horti-

When taken over by the Government the farm did not present a very inviting appearance, and its excellent showing to-day speaks volumes for those who have had charge of it. Perhaps the one man who has done



Administration Building, Government Experimental Farm, Vineland, Ontario.

cultural experimental farm. The location was well chosen, being near the centre of that great fruit-growing district, the Niagara Peninsula, and in the very locality that was in the greatest need of such an institution. The farm lies about one mile west of Jordan Harbour along the south shore of Lake Ontario, where the climate is most favorable for the tender fruits. The soil, ranging from a light sandy loam to a heavy clay, is well suited to experimental work.

most to develop the farm was the late Mr. H. S. Peart, who was appointed director in 1907. Mr. Peart improved the land and laid the foundation of most of the work which is being carried on to-day. He outlined many experiments, but was not permitted to carry them out owing to his untimely death in the summer of 1910.

Mr. A. D. Harkness took up the work as director in 1911, and during the three years following many im-

provements were made. New orchards were set out. A Skinner irrigation system was installed over three acres for use in growing small fruits and vegetables, and a fine large packing house was constructed. Mr. Harkness resigned in 1913, to take up a fruit farm of his own in the neighborhood of Vineland.

Mr. F. M. Clement, who graduated from the O. A. C. in 1911, and until recently a member of the faculty of Macdonald College, Que., was appointed director of the farm early in the spring of 1914. Mr. Clement has

that district, Mr. W. A. Boss, B.S.A., is stationed at the farm, and while not directly connected with the station, his advice is valuable at all times regarding insect troubles in the district.

The appearance of the farm to-day is very pleasing. A magnificent stone road three miles in length stretching from the lake shore to the foot of the mountain passes the farm. This gives easy access to the railway station and adds much to the beauty of the place. Mr. M. F. Rittenhouse, who is the great benefactor of that



Skinner Irrigation System, Experimental Farm, Vineland, Ontario.

had considerable experience as a fruit grower. He is well acquainted with the practical as well as the scientific side and is recognized as one of the leading authorities on Pomology in the Dominion. His work at the station during the past year has been very successful. Mr. Clement has working with him Mr. F. S. Reeves, a graduate of class '12. The hybridizing work is under Mr. Reeve's charge. He has done much good work so far and is extending his work over many varieties of fruits.

The Dominion Entomologist for

locality, built and maintains this road entirely at his own expense, which is a lasting monument to his generosity.

The farm is well laid out in sections and arranged for experimental purposes. It is devoted mostly to variety and cultural tests. A part is devoted to hybridizing work and the growing of seedling stock.

There are some 170 varieties of apples, 147 varieties of peaches, with 500 seedlings, 130 varieties of plums, 47 varieties of cherries, 147 varieties of pears, 54 varieties of grapes, with 5,000 young seedlings, 92 varieties of

strawberries, with 7,500 hybrid seedlings and 4,000 hybrid seedlings of raspberries besides many varieties of the different vegetables.

This short list may give some idea of the work, but a personal visit is necessary to fully realize what is being accomplished. Visitors are cordially invited and are always welcome. The only railway con-

nection is Vineland Station on the G. T. R.

The object of the station is to help the farmers to have greater success in their life work. The knowledge gained there is distributed to all and it is to those who have faith enough to reach out and take the lesson to themselves and apply it to their business that the rich reward shall come.

Co-operation in Advertising

How and Why the Student Should Stand Behind His Own Enterprise

THE Review may well be called the keystone of the whole structure of student equipment and ownership at the college.

Men came into college as freshmen, passed out into the world again and sent their sons back in their footsteps, and still a college rink was a dream. Year after year the student body sighed at the thought of the exercise and pleasure they were missing, and year after year the hockey manager grumbled and gave up as hopeless the task of ever getting any systematic training for his team. Meantime the Review was progressing slowly but surely, until it had saved sufficient profits to finance the building of a rink, and last year the dream became a reality.

While an essential principle of successful co-operation is the elimination, as far as possible, of all overhead and capital expenses, yet some capital is necessary to begin any kind of business, and here again the Review was the "old man" that started the young offspring in business. The Co-Operative Supply Department is one of the most successful illustrations of the new idea in business life

on the continent. By purchasing from their own store, at the same cost as they could buy elsewhere, and at much less inconvenience, students enjoy the almost paradoxical experience of receiving a dividend on their expenses. The Co-Operative Supply Store would have been an impossibility without the backing of the Review.

In the establishment of these two institutions alone, the Review has earned the right to enjoy a quiet old age and let the younger branches finance any new undertaking; but it does not propose to stop here. The present measure of success has but opened the eyes of the students to the possibilities of increasing their equipment. Already negotiations have been opened for the purchase of a block of land and plans prepared for a students' administration building costing \$100,000—figures that would scare students of a few years ago out of their natural senses.

How do we propose to get the money?

Of course, the Review cannot pay \$100,000 next week, but it can put up sufficient money and security to

start even this stupendous proposition, and make it earn its own way, as the rink is doing.

At the present rate of progress, it will take the "old man" a long time to bring up this family, just as it took many years to raise the funds for the rink and supply department; but there is no reason why the Review should continue at the present rate; in fact, there is abundant reason why it should make double and treble the present profits. The opportunities for doing so are banging away at our doors so forcibly that the management can scarcely sleep for the noise.

When you read the account of a great battle or a great feat of seamanship, the outstanding figures in the story are the general and the captain. But did you ever stop to think that the great general who aroused your admiration would be helpless without a regiment of enthusiastic soldiers behind him fired with the zeal of battle? Did it ever strike you that the expert old seadog on the bridge would go down in the very act of shouting orders for the safety of his ship and passengers if he did not have a common seaman on the forward deck and an obscure stoker in the hold to assist him in carrying out these orders? The president of a great company may possess the greatest executive ability ever collected under one hat; the general manager may be the most capable man in his line in the world, but all their planning and direction and work will fall far short of their possibilities unless they are backed up by the faithful and enthusiastic co-operation of every man on their staff, right down to the most inconspicuous labourer in their employ.

The Review staff have always been capable and hard-working officials who have done wonders in making their Review the best college paper on the continent. But even these devoted and tireless workers have not exhausted the possibilities of the Review; in fact they have merely blazed the trail and pointed the way for their successors to work out bigger undertakings than they ever dreamed of.

During the past three months the Review has been placed before scores of advertisers in almost every city and town of importance in the province. While it has met with a good reception from many business men who can see its advantages as an advertising medium, it has been turned down by many others. Why? Because they regard an advertisement in its columns as a donation to the students and of no value as a business-getter. Our representatives are instructed that the Review does not seek such business; but the means of overcoming this attitude on the part of prospective advertisers cannot be supplied effectively by our representatives or our management. This is where the rank and file of our subscribers come in.

The Students Can Solve This Problem.

If the five hundred students at the college would use the power at their command in this direction, they could exert a force that would turn the most indifferent advertiser into a keen competitor for space in our columns. Many of the largest papers spend enormous sums of money in writing personal letters to their subscribers requesting them to mention their paper when writing advertisers. If it is necessary for them, surely it

is important for us. If every student would make a point of writing three letters to our advertisers during the year, or seeing that some of our readers whom we know are in the market for purchasing goods would make enquiries and mention the Review, it would mean that advertisers would receive fifteen hundred letters as a result of their advertisements in the Review. We doubt if the greatest paper in the country could show such merits.. If your folks at home need any equipment for the farm, see that our advertisers are given a chance to quote prices and

terms. If your neighbor wants to add to his plant and machinery, tell him he'll find the best supply firms in the Review, and ask him to make a noise about it when he buys. This will convince advertisers that their message to our subscribers has been received. That is all any paper can do, and all our advertiser expects. If he can't sell after that the fault is with himself or his goods. When every student has done this, and not until then, he has done his part in building up a business of which he is a shareholder and part owner.

The Experimental Union

By the Experimental Editor.

THE thirty-sixth annual meeting of the Ontario Agricultural and Experimental Union was held as usual at the college here, from January 11th to the 15th. Commencing with a reception of ex-students in the balcony of the new dining hall, followed by a banquet including the regular students and officers of the college, the succeeding meetings of the Union were followed with much interest and benefit by the large number of farmers and others attending.

Owing to the unprecedented position in which the nation finds itself at the present time, due to the war, it was felt that the meeting this year had a double significance. There was a perceptible seriousness in the gatherings—a realization of the fact that duty, in the form of greater production, must be done.

Beginning with an address by the Hon. J. S. Duff at the opening banquet, an address marked by an in-

tense patriotic spirit and a thorough knowledge of what is rightly expected of us by the Motherland as producers of food stuffs. Dr. C. C. James spoke the following night to a large audience in the gymnasium, taking as his subject, "Ontario's Duty in Food Production Under Present Conditions." Dr. James, at the outset of his address, adopted the slogan "More than Usual," and proceeded to show that only in producing more bushels of grain per acre, more pounds of milk per cow, more pounds of meat per animal, will the Ontario farmer be doing his duty under present conditions.

The meeting on Tuesday afternoon was given a distinct aspect of provincial importance by the presence on the platform of Mr. N. W. Rowell, M. P., leader of the Opposition, and Mr. W. B. Roadhouse, Deputy Minister of Agriculture. In the course of his address, Mr. Rowell remarked that both parties, irrespective of

political opinions, were zealous and anxious to do everything possible to stimulate rural life and agriculture, that they may be recognized in their real place as the basis of the strength and stability of the nation.

Following Mr. Rowell, Deputy Minister Roadhouse laid special emphasis on the need of a greater consideration of the problems of distribution and said, "that though there was no doubt that the matter of production was at the present of paramount importance, yet we must move the products to the people in the most economical and most efficient manner, and that in the future the marketing side of agriculture must receive far more consideration."

President Mason, opening the meeting of the Union Tuesday afternoon, January 12th, emphasized strongly the need of increased crop production to meet the increased demands of the present situation as regards foodstuffs. Then followed a discussion in which the Hon. Nelson Monteith dwelt particularly with the labor question, and the importance of economizing labor as much as possible.

Professor Zavitz next followed with a report on some of the most important observations and conclusions from the co-operative experiments with farm crops throughout Ontario in 1914. These were conducted on nearly 5,000 farms, the results showing that Marquis Wheat, O. A. C. No. 72 Oats, O. A. C. No. 21 Barley, Yellow Leviathan Mangels, White Cap Yellow Dent Corn and Ontario Variegated and Grimm varieties of Alfalfa were the heaviest yielding varieties in their different

classes as shown by these experiments over the province and at the college.

This report was followed by an address by Mr. J. O. Laird, of Blenheim on, "Bean Growing." Mr. Laird thought that beans should be more extensively grown than at present, and believed that the average this year will be much increased, owing to the fact that beans are a valuable concentrated food and easily shipped long distances.

On Wednesday morning, an address by Dr. F. C. Greenside, on "Canada's Chance in Heavy Horse Breeding," was listened to with much interest by the large audience present. The speaker expressed the opinion that the rock bottom price had not yet been reached in the heavy horse market, and said, "Breed your horses as usual, but breed only your best horses. Be ready when the market wakens and the call comes to supply the very best type of animals, and you need not fear the results."

The closing session of the Union Wednesday afternoon was marked by a discussion on some important ways in which farm life in Ontario might be improved and the election of officers to carry on the business of the Union during the present year.

The officers elected were as follows:

President—Anson Groh, Preston.
 Vice-Pres.—J. B. Fairbairn, Vineland
 Sec.—Prof. C. A. Zavitz.
 Asst. Sec.—W. J. Squirrel.
 Directors—Dr. G. C. Creelman, H. L. Beckett, R. S. Duncan, H. Sirett, J. E. McLarty.

Agriculture in Public Schools in 1914

By Prof. S. B. McCready.

THE Schools' Division of the Experimental Union was organized in 1909, and this is the sixth annual report that has been made of its work. It has been carried on as what might be called the extension work of the Nature Study Department, having chiefly for its clientele the teachers in the rural schools of Ontario and the 250,000 boys and girls attending these schools. The Nature Study Department was estab-

Last spring material was furnished to very nearly five hundred schools scattered all over Ontario. Fifty counties or districts are represented in the distribution, Middlesex, Kent, Elgin, Perth, Lambton, Simcoe, Bruce and Oxford, leading in the number of schools co-operating.

The Outcome of Teaching Agriculture.

Lack of time and space forbids the telling in any detail of what resulted



A Grey County School Garden.

lished in 1903 as that part of the Macdonald Institute which would deal with the redirecting of rural education along agricultural lines, mainly through the training of teachers. Since its establishment about twelve hundred trained teachers have come under its instruction in one or three months' short courses. And through the Schools' Division hundreds of other teachers have received practical help in the planting material and instruction sheets that have been sent out.

from the distribution. To be convinced of the possibilities for revivifying the work of the country schools through the teaching of agriculture, one would need only to read a few of the reports sent in by teachers. I am convinced that it is through the kind of leadership being displayed by many of the teachers represented in these reports, that we will best meet and solve Ontario's rural problem. When the country people rediscover their own schools and get their eyes opened to the rich possibilities that

lie in education of the right kind for them as farmers, we are going to see a great advance in rural Ontario and the cause of Agriculture. We may have to wait until the next generation makes its influence felt, but the country leaders who are developing in our schools through the proper teaching of agriculture will undoubtedly exert a great influence when they "arrive." The place of the new kind of country teacher who will come into being will then be exalted and a new kind of school (or different new kinds of schools) to more adequately meet the country's needs will be formed. As man's continual struggle with nature in his agricultural work is to be the moral equivalent of war to keep up the stamina of the race when wars shall be no more, so through the teaching of agriculture are country people to find new schools and new possibilities in education.

What Our Schools Are Doing in Agriculture.

In these reports are to be found records of very varied school activities carried out or directed by teachers. Many tell of the good work that has been done by their School Progress Clubs in keeping the school and school grounds tidy, of making repairs, of developing leaders through class debates, of carrying out the arrangements for the school fairs, of looking after the school garden in summer holidays, of conducting the experimental plots, of introducing improved strains of poultry or grain into their neighborhoods—a training in service, which prepares well for that type of citizenship needed in the country if our needs in co-operation are ever to be met.

Many tell of the little school fairs which brought the people together in

a social way to see their children's school work, to watch their games, to hear them sing and incidentally to derive new conceptions of the work of the country schools that are to be. Several tell of the school undertakings to help the Patriotic Fund and the Red Cross Society, at one school all the boys as well as the girls helping to knit things. Some report that the pupils raised money by selling garden produce to purchase pictures, balls or play ground equipment. One teacher tells of the work with a Babcock milk tester carried on by herself and the older pupils by means of which the good cows of the neighborhoods were "discovered."

In many places through the beautiful flower beds on the school grounds the schools have become the local beauty spots, and people have been led to visit them from miles around. Some schools have excited the neighborhood interest in their experiments and demonstrations in their school-farms. Bouquets have been sent to the aged and the sick, or to the churches and Sunday Schools; vegetables have been given to poor people. Many homes have had donations of sage or summer savory, perennials or new kinds of vegetables. Many report that the homes have been directly affected, the yards kept tidier and flower beds put out. And everywhere the school has come to mean more to its community.

In the teaching of agriculture and the conducting of the garden, perhaps the following are some of the best things reported: The school and the home (the two great educational factors in a child's life) are brought close together and into a working partnership, discipline is made easy.

pupils and teachers become companions, fighting and quarrelling cease, a new spirit of helpfulness replaces the old spirit of indifference and opposition, parents visit the school when the agriculture is being taught—and incidentally the position of the teacher and all that she stands for is enhanced.

It is not to be inferred that all reports are filled with stories of successes. A few tell other tales; of indifference of trustees, of antagonism of parents, of unresponsive pupils, and of temporary defeats. But with it all this must be concluded that, given fair chances, the teaching of agriculture will bring large returns to a community, the children and the teacher.

Purpose of Teaching Elementary Agriculture.

I suppose there is no subject included in the programme of school subjects which has been so misunderstood and objected to as the subject of agriculture. There has been marked improvement in this respect in late years, and I look forward to the time—not more than twenty years ahead—when it will be as acceptable all round to school supporters and as well established in school work as arithmetic or geography.

For seventy years efforts have been made by our educational leaders in Ontario to secure a place for it in the country schools, but without any stable results. This has been owing on the one hand to our not having a method of teaching it adapted to the elementary schools, and on the other hand because people in the country were not in active sympathy with the efforts. And now that we have found the proper method of teaching it and a growing desire amongst farmers to

have it taught, we have fallen into the evil days of itinerant girl teachers! The difficulty still remains, though it is different in kind. In the opinion of many the situation to be rightly met now calls for a new kind of teacher and a new kind of country school.

Historical.

It is interesting to look back at the first efforts to secure for agriculture a recognized place in our schemes of education. This was by means of a special text book or reader.

Misunderstandings About the Teaching of Agriculture.

The teaching of agriculture has been and is confused with a number of things, viz.: "Book-learning," farming, nature study, school gardening and school fairs. I wish to clear up some of these confusions if I can.

1. Teaching Agriculture and Book-Learning.

This misconception is probably a remnant of the earlier method of teaching agriculture tried in our schools. In the past, four texts have been used: Fuller's, published in 1865; Ryerson's in 1870, Mills and Shaw's in 1890, and James' in 1898. At present there is no prescribed text book in agriculture. Not that the printed word as a means of enlightening the mind is ignored. But for young pupils in the elementary schools the primer in agriculture is the open book that lies open in every country child's every day observation and experience. The book is the book of nature as found in the farm. The teacher of agriculture directs the learner to that book and helps him to read it. He learns from his teacher just as a farm child in a good home with an intelligent father and mother learns lessons in agriculture and in

life every day. It is a natural method of teaching and learning agriculture. It is the so-called "Nature Study" method. It reveals the commonplace and makes it meaningful. It awakens interest, it trains the powers of observation, it leads to inquiries and experiments. And the trained teacher, who is the chief guide in the intellectual development of the child uses these interests, these inquiries, these experiments as the solid ground work for her building. She goes further in teaching agriculture than any home can.

The pupil seeks the help of books, but he is not primarily dependent on books. There is created in him a taste for reading and his reading is directed intelligently. But the method doesn't make "book farmers"; it makes interested, intelligent **reading farmers**. Moreover the book is not discarded, but given a place of honor; every country school should have its agricultural book shelf.

2. Teaching Agriculture, Not Teaching "Farming."

"Where mind co-operates with muscle we get a new man compared with the drudge who digs from childhood till death, bringing no reward simply because of lack of education and misdirected energy. The soil is a great educator. Let man know the reasons governing his efforts and every morning breaks brighter and brighter."

A great many people appear to think that the teaching of agriculture in our schools means the same as teaching "farming" so called. There could be no greater mistake. The misunderstanding lies in the limited conception of what constitutes a good farmer or what is implied in good farming. Agriculture is a science;

"farming" is an art. The successful artist who gets the most out of his work (I do not mean merely money) or puts the most intelligence into the practice of his art is the one who, other things being equal, applies best the scientific principles underlying his art.

Agriculture is more than plowing, harrowing, seeding, harvesting, cutting wood, drawing water, milking cows, feeding cattle. Agriculture is **thinking** no less. But success in farming (and again I do not mean merely making money) is not wholly dependent on these manual operations. These are necessary of course. But they may all be done with labor and persistence without being a success that is filled with pleasure and satisfaction, and even profit. Success will come from **intelligent effort**, from effort made in accordance with scientific principles.

Success depends largely on trained intelligence—as some one has said, on that small part of the body above the nose. The successful farmer, just as anyone else who makes a real success of any work, must be proud of his job, must be devoted to it, must believe in it, must talk about it, think about it, confer about it, read about it—must stick at it. And these things are dependent on an attitude of mind largely—and this attitude of mind may be fostered in every "little red school house" by every good teacher who gets the support and sympathy of the patrons of the school. It is not teaching **farming**, but it is teaching **for farming and for farm life** through the subject of agriculture with all its manifold interests and principles. Agriculture becomes a medium at the same time as an object of education.

False Conceptions of the Purposes of Education.

Perhaps this attitude towards the teaching of agriculture is due to a wrong notion regarding the purpose of education as a whole, entertained largely by country people. "Getting an education" has always been accepted as equivalent for preparing to fill a position in the so-called learned professions or in the business of the town or city. The boy who is "only going to be a farmer" is too often allowed to drop out of school before he has taken full advantage of even the learning which the local "little red school house" might afford. Only rarely does the country boy go to a high school to get a training which might enable him to get more out of life or to make more use of his life on the farm.

Agriculture has been obscured in the farming. The manual part of the calling has hindered a recognition of the need for intellectual and mental betterments through education. In the strong individualism and independence of our farmers, no class-consciousness has developed to demand for rural communities a kind of education suited to their needs. Like other fashions, they have taken their fashions in education from the town. No pride of calling has shaped itself to demand general recognition of agriculture as a learned profession deserving of an important place in our system of education.

In these matters, however, we are at present in the midst of rapid change. During the past few years, Governments, Departments of Agriculture, Departments of Education, the Agricultural Press, Manufacturers' Associations, and such like organizations, and a largely growing

number of country people themselves, have been active in readjustments. The future looks promising.

3—Teaching Agriculture and Nature Study.

The farmer is the world's working nature-student. His every-day interests and employments are with plants and animals, with soils and weather; and these are the raw materials of the school subject called nature study. So agriculture is included in nature study. This applies not only to the subject matter, but also to the generally accepted method of learning, i.e., by first-hand contact with and inquiry of nature.

But to save confusion in school work a working distinction has arisen. Elementary agriculture is **agriculturized** nature study. Nature study limits its studies to birds, insects, plants, soils and clouds as interesting objects of nature more or less dissociated from the farm. In agriculture these birds, insects, plants, soils and clouds are studied in relation to the business and science of agriculture. A teacher might conduct a good course of nature study without ever revealing the phenomena studied as applied to farming. The two studies cannot be very well sharply defined so far as subject matter is concerned. It is in the motive, the end that is sought, that a difference lies. Nature study that only reveals the beauty and the interests of the country or tends to make children intelligently happy in their rural environment would not be considered as elementary agriculture. Nature study must have a serious touch with the affairs of the work-a-day world in order to be accredited as agriculture.

4—Teaching Agriculture and School Gardens.

School gardens have come into the educational world as a twin with nature study. Their place and purpose in our schemes of training children is very commonly misunderstood. To most people the important word in the phrase is the word "garden," and so they are considered as merely exercises in horticulture. The word "school" is also misconstrued; it is commonly thought that a school garden must of necessity be at a school. It isn't **location** at a school which makes it a school garden; it is the **educational** use that the child's actual experience is put to by the teacher which makes it a school garden. A garden at school in which pupils grow the prettiest of flowers and the finest of vegetables is not a real school garden unless the teacher bases much of her instruction in drawing, arithmetic, composition, literature and nature study upon the pupils' self-learning. The first fruits are not horticulture; they are not flowers or vegetables; they are **ideas** that have grounded in consciousness through **doing things**; they are new desires to acquire knowledge by actually working with some of the most interesting things in life—plants and soils.

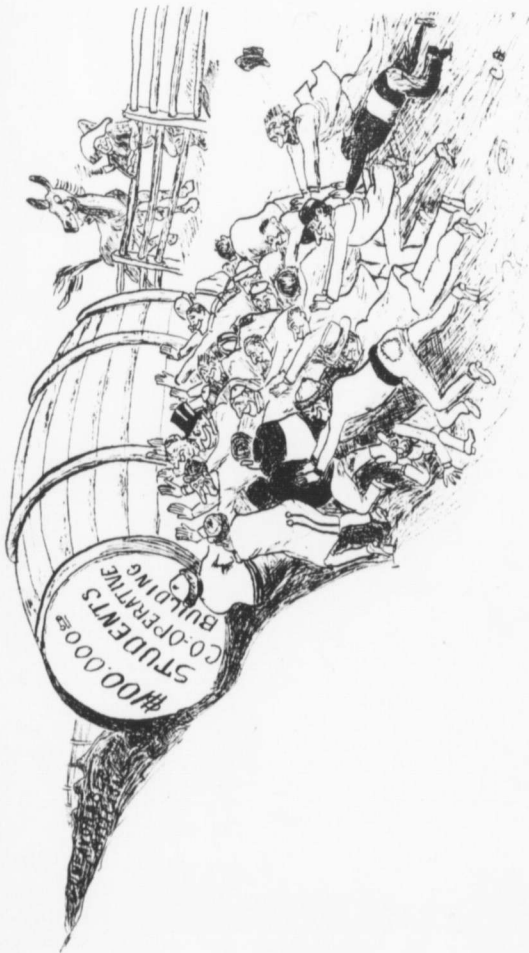
So a garden cared for at home by a pupil, under a teacher who intelligently uses the child's experience in **educating** him, is as much a **school garden** as one located right under the eave of the school house. Indeed, the concern doesn't need to be with an actual garden to make it a school garden. The caring for chickens, the oversight of a flock of sheep, the looking after of the house plants, the testing of milk—all these may be in the broad sense the school

gardens from the **horticultural** standpoint that are poor school gardens from the **peragogic** standpoint. And conversely there may be **poor** school gardens from the horticultural standpoint that are **good** school gardens from the pedagogic standpoint. Conducting a school garden is not the same as teaching agriculture; it is the **means** of teaching agriculture.

5—Teaching Agriculture and School Fairs.

A large number of people, including many teachers, are confused in these terms also. The preparation of exhibits for pupils' competitions, even if the teacher is taking an active part in assisting the pupils, is not "teaching agriculture." Something about agriculture may be learned in this no doubt, but it should not be confused with the giving of instruction in the subject of Agriculture.

There are two kinds of school fairs developing in Ontario, each doing a commendable work in arousing public interest in agricultural education. A school fair which is carried out by a teacher who is systematically giving instruction in agriculture under the plans of the Department of Education is a part of the years' work in agricultural instruction. Through this the teacher seeks to arouse the interest of the patrons of her school in the agricultural work that has been carried on there during the year, as well as in all the other subjects. It is to reveal to the people the possibilities of their own little school and to re-create an interest in it; to make their school a centre of local sociability and to arouse generally a new activity in education and in a new kind of education for country people.



THE O. A. C. REVIEW

REVIEW STAFF

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W. H. HILL, *Alumni*

B. E. FOYSTON, *Experimental*

S. B. STOTHERS, *College Life*

R. W. DONALDSON, *Horticulture*

E. E. CARNCROSS, *Athletics*

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C. L. RAWSON, *Artist*

R. H. ABRAHAM, *Query*

W. MALCOLM, *Locals*

GLADYS MANNING, *Macdonald*

Editorial

LOOKING AHEAD.

Anticipation is the spice of life. Time rushes by in dizzy flight, and unless our every movement be used to discharge that moment's duties we are outclassed in the race for achievement. By the time this number is in the hands of our readers, we will be almost half way through this term and approaching the end of winter. The sap in a few weeks will begin to stir in the branches of the trees; the magic wand of spring will have worked a marvellous change on the landscape and a new life will be budding forth everywhere. Many a heart looks impatiently forward to the arrival of spring and warmth within doors and out. With firm endeavor we enter the new season.

"SAP'S RUNNIN'."

These words have almost lost their real significance to the Ontario boy. It seems a pity that in the changes that are taking place in our rural life with many another characteristic and land mark should go the old-

fashioned maple sugar industry. It was hard work; the financial returns were not large, but there was a fascination about it easier experienced than described. But what shall we say of the product? There may have been many thousand streptococcus bacilli per cubic centimeter contained therein; but none knew about that, so what did it matter. As we travel over the country we seldom see the grand old sugar woods once so common. What little of the work still done has now become so commercialized that the fascination is almost gone. Much of the product one sees on the market now may even have been made without ever seeing a sugar wood. In this issue, W. J. Kerr gives us a vivid picture of this industry as it once was.

AGRICULTURAL EDUCATION.

We believe the Review can perform one of its most important functions as a link between the Ontario Agricultural College and the rural school. The wisdom of teaching agriculture is now pretty well recog-

nized by educational authorities throughout the land. Every year scores of teachers attend this institution for instruction in agriculture, and we number among our readers many of these teachers who have gone back to their country schools with higher ideals of service to the country. Prof. McCreedy has given us a report of this year's work in the Schools' Division of the Experimental Union, and we intend to make this the first of a series of articles on topics of interest to rural school work. The rural teachers have no official organ, so we invite all interested or active in rural schools to use our columns for the dissemination of useful information, ideas or experience, looking, perhaps, to the establishment of a permanent department of this nature.

WHAT SHALL WE DO ?

To one who thinks and reads, it is not difficult to see that the rural population is the backbone of the country. Within the last week or two we have listened to several addresses, the burden of which was: the farmer alone can save the nation in this fearful crisis by his increased production to maintain not only those who fight the nation's battles, but the starving and homeless of our own and other nations as well. We have read articles directed towards the farmer, saying, "Send us the best of your sons. You must increase your production as never before, and you are sending us little more than half the number you should to swell the ranks of the overseas contingents." We are told that the labor problem is likely to be more acute than ever. Already many of our agricultural sons have gone—the fittest. More will have gone by

spring. Conditions on the farm are much as in previous years. Many of our own college boys are asking themselves seriously, conscientiously and thoughtfully: "What shall I do? Shall I enlist or no?"

Our college stands in a unique position. The boys attending are, almost wholly, familiar with farm work and practice. For the most part, they have come from farm homes, which, in many cases, depend on them during the coming season for the necessary labor and management of farm operations, and, without exception, every student at this college, if placed on a farm, can at once set about the work, not only as an intelligent, efficient farm laborer, but with a store of scientific knowledge which, properly applied, cannot fail to increase production. Every man here can do a great deal to enhance agricultural production. In the meantime, while in attendance at college, he has the advantage of a training in the officers' training corps. Then to every student at the Ontario Agricultural College we would say: If you can identify yourself with greater agricultural production, the call of duty is not overseas, but back to the farm.

THE EXPERIMENTAL UNION.

The meetings of the Ontario Agricultural and Experimental Union were held here last month. They were marked throughout by an interest and enthusiasm which always characterizes the work of this organization. It has grown to immense proportions, and the reports, as received from the various departments of the work, of the past year is a record to be proud of. We have to hand a report of the inaugural meeting of the then-called Ontario

Experimental and Industrial Union, dated March 10, 1880. Comment on the organization is in part as follows: "The association, which has begun well, will no doubt, in a very short time, prove of great interest and profit to the community of farmers at large; for, by the meeting together of young farmers year after year, relating experiments, both in grain and cattle, must of necessity bring forth good fruits."

This was thirty-five years ago and the prediction has been more than fulfilled. Prospects for even greater things in the future of this organization are very bright.

RURAL LIFE CONFERENCE.


January 29-31 a conference on "Rural Life and Work" was held by the Ontario Agricultural College Young Men's Christian Association. This conference was unique in that the papers were taken and the discussion led by students. E. C.

Drury, of Crown Hill; Dr. John Brown, Jr., Secretary of Rural Work Department Young Men's Christian Association, New York, and Mrs. Brethour, of Burford, were the only outside speakers. A wide range of topics were discussed, as follows: "Attractions and Repulsions of Farm Life," by E. C. Drury; "What the Y.M.C.A. is Doing to Help Country Life in the United States," by Dr. Brown; "The Place of Women in Country Life," by Mrs. Brethour; "The Labor Question," "Educative and Social Factors in Country Life," and "The Economic Question."

There was little theory indulged in. Every question was presented clearly and discussed in the light of attempts to solve the question being worked out successfully elsewhere. Such a conference should be productive of a renewed interest in rural life, especially if it could be made an annual affair.

Athletics

BASKETBALL.

 O. A. C. opened the basketball season in London on January 23rd, by defeating Western University on their own floor. Our boys had practiced faithfully, and Manager Baker was confident of a victory. He was not disappointed in his expectations, but had the pleasure of seeing his team play some basketball of the first order.

The London floor was small, and, as a result, the play was close and the checking hard, but, despite this, the game was clean. Captain Munro easily opened the scoring for the O. A. C., and once he got started he did

not know when to quit. He gave what was probably the greatest exhibition of basketball ever seen on the London floor until he was injured early in the second half. O. A. C. took a large lead in the first half and slackened in the second to play a defensive game after Munro was injured. He was replaced by Fidlar. Every man on the team played right up to form. The game ended 32-27 in favor of O. A. C. Our line-up was as follows:

Guards—Neff, Bonham.

Centre—Culham.

Forwards—Rowland, Munro (captain), Fidlar.

FRESHMAN INDOOR MEET.

The Freshman Indoor Meet was held on Saturday, January 23rd, Only one record, the rope climb, was broken, Matheson performing the feat. Some good material was uncovered, and Year '18 promises to loom up strong in the college indoor meet in March.

The following are a list of the events and winners:

15 yard dash—Hamilton, Wallace, Michael. Time 2 2-5 seconds.

60-yard potato race—Newton, Wallace, McEwen. Time 15 2-5 seconds.

Standing high jump—Brown, Nelson, Fidler. Height 3 feet 10 inches.

Rope climb—Matheson, Leach, James. Time 10 2-5 seconds.

Fence vault—McEwen, Fidler, Matheson. Height 5 feet 9½ inches.

Chinning bar—Read, James, McEwen. 13 times.

Pole Vault—Lavis, Leach, McEwan. 7 feet 9½ inches.

Hitch and kick—Michael, Hunter, Fidler. 7 feet 6½ inches.

Running high jump—Matheson, Brown, Wallace. Height 5 feet.

Standing broad jump—Wallace, Michael, Matheson. 9 feet.

Shot put—McGregor, Dodding, Michael. 36 feet 9 inches.

Rope vault—Michael, Kay, Wallace. 9 feet 9½ inches.

Inter division relay race—1st, B Division; 2nd, A Division.

52-yard swim—Read, Halsey, McEwan. 44 seconds.

Fancy diving—McWhinney, Halsey, McEwan.

Long plunge—McWhinney, De Long, Halsey. 39 feet 7 inches.

Grand Champion—1st, Michael, with 15 points; 2nd, Wallace, with 13 points.

Champion of A Division—R. Brown.

Champion of B Division—W. Michael

B. Division—93 points.

A Division—42 points.

NOTES.

Munro's injuries in London proved to be quite serious and he will be unable to play again this season. His loss will be greatly felt because he was a power on the forward line. "Sandy" tarried a week at the London hospital, but he says that the board at the college dining-hall is good enough for him. He has also donned a plaster cast of $2\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$.

Early in the season the O. A. C. and the G. C. I. played an exhibition game of hockey, Manager Kedey desiring to get a line on some of his material. No record was kept of the date and score. During the game Lackner was slightly injured, but 'Stewart attended to his injuries. The hockey outlook is bright, and our boys have great hopes of winning their district in the intermediate collegiate. McMaster and University of Toronto will be their competitors.

THE PERFECT MAN.

There is a man who never drinks,
Nor smokes, nor chews, nor swears,
Who never gambles, never flirts,
And shuns all sinful snares
—He's Paralysed.

There is a man who never does
Anything that is not right;
His wife can tell just where he is
At morning, noon and night
—He's dead.

College Life



Hon. James Duff, Minister of Agriculture.

O. A. C. Ex-Students Banquet.

As there were many ex-students in attendance at the meetings of the Experimental Union, it was made the occasion for holding an ex-students banquet. The banquet was a more or less formal opening of our new dining hall, and took place on Jan. 11. About four hundred and fifty students and ex-students were present. After all had done justice to the menu, prepared under the direction of Miss Rutherford, assisted by the House-keeper Class from Macdonald Institute, a very interesting programme was rendered. This consisted of toasts, speeches, and informal songs. The singing was in charge of Mr. E. Shildrick, who was assisted by a male chorus.

Dr. Creelman acted as toastmaster. After the toast to the King had been drunk, a toast was proposed to the Department of Agriculture.

This was responded to by Hon. J. Duff in his usual happy vein. He extended heartiest congratulations to all interested in the building and

equipment of the dining hall and to the Experimental Union, in whose honor the banquet was held. Such a gathering as this should have an influence on the most vital question, for our consideration at the present time. Where will our responsibility end?

Mr. Duff further explained that the end of the war—however near or remote—will leave an immense war debt. Much of this will fall on the agricultural or main producing section of the Canadian people. A meeting such as this should have an influence, by preaching the doctrines of increased production and buying in Canada if possible. If we cannot buy in Canada let us buy in the Empire and thus be better prepared for the strain when it comes. Is there any reason why the balance of our trade should be in imports rather than in exports?

Do we realize our position when compared to the soldiers at the front? Let us compare our lot with theirs even if not pleasant, and let our re-

fections spur us to renewed activity in production or in enlistment for service at the front. Much is being done to lessen the ignorance of our rural people, in regard to our responsibility, by the educational campaign of the Government.

Mr. Duff closed by hoping that some good would come of the war. All wars had served some good purpose, and if this war made us more unselfish, good would come of it.

The toast to the ex-students was responded to by Messrs. Hon. Nelson Monteith, Thos. H. Mason, President of Experimental Union; Thos. Binnie, of Grey County; Mr. F. C. Clement, Jordan Harbor; F. Hart, Laird and Sirett. All were more or less reminiscent and looked back with pleasure to their associations at college. The meeting closed with a toast to the soldiers at the front.



Literary Society.

The first meeting of the Union Literary Society for the winter term was held in Massey Hall on Saturday evening, Jan. 23. The meeting was called to order by the new president, F. C. Paterson, after which the secretary, H. B. Steckley, read the minutes of the last regular meeting of the society.

Prof. J. W. Crow, who is the new honorary president, addressed the meeting. In his remarks he deprecated the barrier which seems to exist between the student and teacher at this college. He wished for more personal touch with the student if possible. Prof. W. H. Day, who acted as critic, wished also to put himself on record as concurring very heartily with Prof. Crow's views.

The debate was between representatives of the Senior and Junior

years. It read: Resolved—"That life in the country in Ontario is satisfactory to people of normal characters and taste." The affirmative was taken by Messrs. T. W. Morse and J. E. McLarty, of the Junior year, while Messrs. J. P. Sackville and H. M. Holmes, of the Senior year, upheld the negative. The judges decided the debate in favor of the negative.

Solos were rendered by Misses F. Beven and J. McIlquham, and by G. E. Patton, with a little local color included. The male quartette was also on hand and gave a couple of interesting selections.



The Freshman skating party held in the college arena on Wednesday evening, Jan. 27th, was in every particular a decided success. Despite the fact of the Monday calamity the executive was undaunted and put forth every effort to clear away the debris and decorate the remains most attractively with pennants and Chinese lanterns.

The ice was in excellent condition and the music sent a thrill of enthusiasm tingling through every nerve, so that those of Mac. Hall, whose timidity would not permit them to skate under the diamond set dome of heaven, not only missed that treat, but also the one comprised of sandwiches, cake, coffee and other delicacies rarely met with in the arena.

The evening was surely a rare treat as any of the participators will acknowledge, and will long be remembered by those fortunate enough to belong to year '18.



The Carnival.

Our rink committee supplied a very enjoyable evening's entertainment on Jan. 20, when they held a fancy

dress carnival. The ice was in good condition and a good crowd was present; quite a few being in costume. Students and visitors contributed to the success of the carnival by their presence on the ice and also on the benches. The costumes were varied in color and style, while the rink was lighted with Japanese lanterns; all combining to produce a scene of brilliance. Most nationalities from the Equator to the Arctic circle were represented. Among the visitors noticed were Aborigines from the South Seas and representatives of the regions of ice, Westerners from Alberta and Missouri, Indians from Lion's Head and Macdonald Hall, and a miscellaneous collection of tribesmen

from Guelph City and the College. The following is the list of prize-winners.

Fancy Dressed Lady—1, Miss K. Cunningham; 2, Miss M. Smith; 3, Miss Percy.

Fancy Dressed Gent—1, E. E. Carncross; 2, G. H. Rowe; 3, Geddes.

Chariot Race—1, Messrs. W. R. Brown and H. W. Boquart, "driven" by Miss Brown. 2, Messrs. R. K. Bryden and H. A. Pawley, "driven" by Miss M. Stewart.

Mixed Doubles—Miss Brown and W. R. Brown.

Inter-Year Relay—Class '17, represented by Messrs. D. M. Oswald, E. Agar and L. H. Mallory.

Mile Open—D. M. Oswald.

Alumni

THIS department of the Review is for the purpose of keeping the graduates, associates and ex-students in touch with one another. In order to perform this mission successfully, it is essential that the Editor have the hearty cooperation of all old boys (and girls, too).

It would be almost impossible for the Editor to write personal letters of enquiry to all those who are still interested in their Alma Mater, but they can write to us from time to time.

The amount of light you give us for these columns, in the form of information will be reflected with greater intensity to all parts of the country.

Do it now!

"High is our calling, friend!—
Creative Art

Demands the service of a mind and heart."
—Wordsworth.

Graduates of Class '14.

Allen, J. W.—Assistant District Representative for Perth County.

Anderson, J. Y.—"Back to the Farm," Raymond, Alberta.

Barnet, I. T.—Assistant at the Tobacco Experimental Station in Essex County.

Bergey, J. E.—Demonstrator in Poultry Husbandry Department, Manitoba Agricultural College, Winnipeg.

Blanchard, B. H. C.—Late Associate Editor of "Farm and Dairy;" now with Nova Scotia Regiment at the front.

Britton, J. E.—Demonstrator in Vegetable Gardening at O. A. C., Guelph.

Brown, J. M.—Late of German

- Potash Syndicate; now Assistant District Representative for Peel County.
- Campbell, A. M.—Returned to Natal, South Africa; now on active service.
- Carroll, J. A.—District Representative at Brampton, Peel County.
- Castro-Zinny, H.—Managing a 3,000 acre sheep ranch in Argentine, South America.
- Cleeves, A. C.—Sergeant-Trumpeter Royal Canadian Field Artillery, in training at London for 3rd contingent.
- Duff, G. C.—“Back to the Farm,” Simcoe County.
- Forsyth, F.—Assistant District Representative at London, Middlesex County.
- Golding, N. S.—Dairy Department, Agricultural College, Ames, Iowa.
- Good, C. A.—Assistant Provincial Entomologist, Truro, Nova Scotia.
- Hare, H. R.—District Representative for Halton County.
- Hayes, W. H.—Assistant Horticulturist, Department of Agriculture, Victoria, B. C.
- Hirst, G. S.—Sergeant-in-charge of transport, London Scottish Rifles; in training at Dorking, Surrey, England.
- Kelleher, M.—Assistant, Vegetable Gardening Department, Macdonald Agricultural College, Quebec.
- Kingssmill, G. F.—Assist, Apiculture Department, Central Experimental Farm, Ottawa.
- Kirk, H. R.—“Back to the Farm,” Gledhow, Saskatchewan.
- Knapp, J. S.—District Representative for Waterloo County.
- Laidlaw, C. M.—Experimentalist O. A. C. Physic's Department.
- Lattimer, E.—Late District Representative for Port Arthur; now Senior Lieutenant, Toronto Mounted Rifles, in training at Stanley Barracks, Toronto.
- Leppan, H. D.—Started to take post-graduate course in Missouri Agricultural College; now returned to Orange Free State, South Africa.
- Madden, G. O.—Horticulture Expert, Toronto.
- McLaurin, A. E.—Assistant, Animal Husbandry Department, Macdonald College, Quebec.
- McRostie, J. E.—Assistant District Representative for Leeds County.
- Millar, J.—Assistant District Representative at Alexandria, Glengarry County.
- Moore, J. A. C.—“Back to the Farm.”
- Mosely, L. A.—Private with 5th Hants Territorial Regiment, stationed at Allahabad, Central India.
- Neelands, C. F.—Managing Ontario Government Farm at Sudbury, under S. E. Todd, B.S.A.
- Nixon, W. G.—District Representative at Liscard, Temiskaming District.
- Nourse, C. B.—Private in Princess Pat's Light Infantry, now in France.
- Pope, J. S.—With firm of lithographers, Toronto.
- Ramsey, R. L.—Agriculturist, Department of Agriculture, Victoria, B. C.
- Spencer, G. J.—Demonstrator O. A. C., Entomology Department, Guelph.
- Stansfield, N.—Joined a cavalry Regiment of the Imperial Army.
- Stark, J. W.—Travelling in Ontario for Swift Company of Canada, Limited.
- Stewart, P.—District Representative at Dryden, Rainy River District.

- Strong, W. F.—Assistant District Representative for Waterloo County.
- Vining, R. L.—District Representative for Wentworth County.
- Woltz, G. R.—District Representative for Haldimand County.

Graduates of Macdonald Institute, 1914.

- Miss Jeanette Babb—Household Science Teacher at Alma (Ladies') College, St. Thomas, Ontario.
- Miss Eleanor M. Groff—Household Science Teacher, Winnipeg, Man.
- Miss Fern Hotton—Household Science Teacher, Vermilion, Alberta.
- Miss Florence E. Irwin—Household Science Teacher, Winnipeg, Manitoba.
- Miss E. Helen McMurtry—Household Science Teacher, Moose Jaw, Saskatchewan.
- Miss Isabella Weseloh—Dietitian at General Hospital, Sarnia, Ontario.
- Miss Estelle Cumming—Household Science Teacher and Assistant Matron at Institute for Deaf, Belleville, Ontario.
- Miss Annie M. Grassie—Household Science Teacher, Chatham, Ontario.
- Miss Myrtle A. Hayward—Household Science Teacher, Claresholm, Alberta.
- Miss Margaret McDougall—Household Science Teacher, Saskatoon, Saskatchewan.
- Miss Francis N. McNally—Household Science Teacher, Lethbridge, Alberta.
- Miss Alice B. Marcellus—Household Science Teacher and Women's Institute Organizer in B. C.
- Miss Millie Smith—Household Science Teacher and Women's Institute Organizer in B. C.
- Mrs. H. Hedley—Commercial Demonstrator, Hamilton, Ontario.
- Miss E. May Lees—Dietitian at Isolation Hospital, Toronto, Ontario.

Associates of Class '16.

- Carroll, D. E.—Assistant District Representative for Frontenac County.
- Donaldson, J. R.—On the staff of "Farm and Dairy;" Live Stock Reporter.
- Elliott, G. A.—Assistant District Representative at Collingwood, Simcoe County, Ontario.
- Foot, J. L.—Assistant District Representative at Simcoe, Ontario.
- Foreman, E. C.—Manager, Robertson Poultry Farm, Michigan.
- Hare, W. E.—Assistant District Representative at Newmarket, York County.
- Love, P. F.—Reporter on staff of The London Advertiser.
- Reeker, F. S.—Assistant District Representative for Grey County.
- Van Every, W. S.—Assistant District Representative for Elgin County.
- Waterman S.—Assistant District Representative for Renfrew County.
- Weston, E. W.—Assistant District Representative for Hastings County.
- Wheatley, C. C.—Manager, D'Arcy Scott's Farm.
- Yule, R. G.—Manager, St. Catharines Cold Storage Company.

W. E. J. Edwards, B.S.A.

W. E. J. Edwards, '10, acted for one year after graduation as Assistant District Representative for Essex County, then later was transferred to York County as Representative. In the fall of 1911, he returned to Essex County. While

doing Representative work here he helped to organize the Ontario Corn Growers' Association and acted as its Secretary. The development of corn shows and stock judging contests among the farmers of his county are some of Mr. Edwards' strong features.

He now leaves this work, which has been so well done, to accept the Associate Professorship of Animal Husbandry at the Michigan Agricultural College at Lansing. The Review wishes him every success in his new position.

S. H. Hopkins, B. S. A.

"Hop" is an Englishman, born at Berry, Lancashire. He received his early education at Ashville College, Harrogate, Yorkshire. After leaving college he put his training to the test by entering commercial life in Liverpool. However, he did not remain long in this sphere of activity. In 1902 he decided to try rural life on an English farm, where he stayed for four years. During this time he mastered many of the rudiments of farming, which greatly stimulated his desires for deeper scientific knowledge of agriculture.

He emigrated to America in 1906, giving another proof of the insatiable spirit of roaming which has made so many of his countrymen famous. During the following three years after his arrival on this continent, he occupied his well-trained faculties by investigating some problems of practical agriculture in the Western States and in Western Canada.

Mr. Hopkins entered the O. A. C. in 1909. The next two years he gave sufficient proof of his academical and practical training of the past by

heading his class, both in his first and second years.

During his associate course he served on the staff of the Review as Locals Editor. Later he was appointed Dean of Residence, a position he most ably and faithfully occupied for two years. Upon graduating last year, as live stock specialist, he returned to his adopted province, British Columbia, to fill the position of Assistant Live Stock Commissioner for that province.

W. H. J. Tisdale, B. S. A.

Mr. Tisdale graduated from this college in 1913 as an Animal Husbandry specialist. After leaving the O. A. C., he acted as District Representative for Peel County. He is now Assistant Professor of Animal Husbandry, Faculty of Agriculture, Saskatchewan University.

William O'Brien Donovan, '15, has returned to Grenada, B. W. I. Now Editor-in-Chief of "The Chronicle and Gazette," one of the leading newspapers of the colony.

J. L. Tennant, '13, originally '06, since leaving college has been farming. Has recently been appointed Provincial Horticulturist for Prince Edward Island.

F. J. Boyd, '05—"Ted" is still in the shoe business at Merrickville, Ontario. He has bought a farm near town, intending soon to return to agriculture, as he has some help growing up: a little Boy(d), born October 2nd, 1914. The Review extends hearty congratulations to Mr. and Mrs. Boyd.

"Larry's Gone.

On the 25th of November, C. M. Learmonth, '10, was married to Miss Alice Henderson, of Brandon, a lady whom none of his old associates knew anything about. During '09-'10, "Larry" was Agricultural Editor of the Review. When he left college he entered the real estate business in Moose Jaw, Saskatchewan.

Mr. and Mrs. C. M. Learmonth will be at home to their friends at 54 Grafton Avenue, Moose Jaw.

Class '10 and the Review wish them a long and useful married life.

"In Answer to the Call."

Stuart Kennedy, '10, late of Apple Hill, Glengarry County, is now a private in the First Canadian Contingent.

O. C. White, B.S.A., '10, late of Central Experimental Farm, Ottawa, now a member of Army Veterinary Corps, First Contingent.

James Lever, '14 ("Truthful James"), private with Princess Patricia's Light Infantry; now in France.

N. I. Wilson, '15 ("Bobby"), training at London, England, with the Artists' Rifle Corps.

R. Mollison, '14, attached to Intelligence Corps, Toronto, for Third Contingent.

Ernest E. Crohn, of Point Edward,

Ontario, has joined Third Contingent.

G. T. Knight, '17, R. G. Knowles, '17, and G. M. Goodall, '17, have commissions in the Imperial Army and are now on active service at the front.

J. C. Neale, '17, and M. A. Neilson, '17, both Sergeants in the Governor-General's Foot Guards, with First Contingent.

Leslie Lord, '16, and E. C. Hessel, '16, Thirtieth Regiment (Wellington Rifles), have been appointed Provisional Lieutenants, at London Mobilization Camp.

God Save the King!

Though the pitcher that goes to the sparkling rill

Too often gets broken at last,
There are scores of others its place to fill

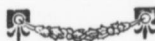
When its earth to the earth is cast;

Keep that pitcher at home, let it never roam,

But lie like a useless clod;
Yet sooner or later the hour will come

When its chips are thrown to the sod.

—From "Potters' Clay," by Adam Gordon Lindsay.



Macdonald

Why is the hill leading to Mac.
Hall like a little dog?

Because it is a slow pup—slope up.

◆ ◆ ◆

Student's Song.

(Robert Louis Stevenson)

They say that at the core of it
This life is all regret,
But we've scarce yet learned the core
of it,

We're only youngsters yet;
We only ask some more of it, some
more of it,

We only ask some more of it,
—The less we're like to get.

Though ill may be the close of it,

It's fair enough at morn,
And the manner to dispose of it,
Is just to pluck the rose of it,
When first the rose is worn,
Is just to pluck the rose of it, the
rose of it, the rose of it;
Is just to pluck the rose of it,
The de'il may take the thorn.

◆ ◆ ◆

"No man of experience will ever
say that he understands women.
They are infinitely diverse, remem-
ber, as compared with men, who are
for the most part alike."

◆ ◆ ◆

Abel loved Mabel,
And wanted to Cabel,
But the price
Of a cabel
Made him not Abel,
How cood he cabel
If he was not Abel?
But when he was Abel
And wanted to cabel
Why was he not Abel
To cabel
To Mabel?

A Modern Valentine.

You are to me a guiding star,
I'll buy for you a motor car,
A cot, with roses all a twine,
At Newport waits my valentine.

I'll deck you with a sealskin coat
To wear whene'er you go to vote;
A diamond pendant shall be thine,
If you will be my valentine.

◆ ◆ ◆

Mr. Charlesworth—(Fourth Year
English Class)—"Man can paint or
make, or think nothing but man—"
Stops at sound of discord, and then
adds: "Gentlemen, Mr. Harris ob-
jects to the veracity of that last
sentence."

◆ ◆ ◆

We were delighted to see Misses
Helen Oldham, Babe Hess, Leone
Hartley, Dorothy Leaming, Helen
Cliff, Dolly Bartle, Mildred Gooch,
and Mary Campbell as guests at the
Cosmo. dance January 22.

◆ ◆ ◆

First Shower at the Hall.

The brightest afternoon party ever
given in Macdonald Hall was on
Monday, January 25th, when Mrs.
Fuller received for Miss May
Harris, of Jamaica. The drawing-
rooms looked particularly attrac-
tive, the color scheme being pink
and white. Miss Harris, who received
with Mrs. Fuller, carried a beauti-
ful bouquet of pink roses, presented
by the hostess. After a little appropri-
ate music, Miss Harris was the sur-
prised recipient of a miscellaneous
shower which, fortunately, carried
out the color scheme.

The Winter Term Promenade came
unexpectedly on the first Friday of
the term. There was the usual crowd-

ing at the rendezvous and refreshment table. The programme was especially good and the committee take this opportunity to thank Misses McIlquham and Beven, Messrs Fancher and Parsons, for the entertainment which was greatly appreciated.



Heard in Passing.

"I hope I make myself clear," said the water as it passed through the filter.

"Experience such as this tends to harden one," said the egg as it was placed in hot water.

"I do this because of an inward prompting," said the seasick man, leaning over the rail.

"I'll stay and see this thing out," said the man at the dentists.

"I have an inkling," said the blotter.—St. Andrew's College Review.



Once again Macdonald had thrown wide her doors and welcomed Miss Ontario. But the newcomers realized the truth of the statement, that "All is not gold that glitters," when they viewed the startling vision of a huge placard artistically decorated with a very realistic portrait of a grinning skull and cross bones and containing thereon the command that the Freshies present themselves for the final rites in the students' sitting-room at 6:15 sharp. And the prescribed costume! Certainly a debutante would not have envied it. The girdle of slippers and storm rubbers was the least conspicuous unit.

Promptly at the appointed hour a strangely gowned and much excited group of girls gathered at the trying place. Presently from the depths of the now dark and gloomy hall, shrouded ghosts came slowly in,

and the roll was called. The Freshies submitted meekly to the process of being blindfolded by these uncanny visitors, and then walking by faith and not sight, and to the weird accompaniment of unearthly groans and moans, they were led along the hallway and into the gym. Here varied and numerous were the athletic feats performed by the sightless Freshies, calling forth loud applause from the critics that these unwilling actors had come to play before. Then the bandages were removed, and each girl beheld her comrade in misery, conduct herself in a manner that in normal environment would denote insanity. Several amusing vocal selections were rendered, with such titles as "We have come here to learn to cook and sew," etc. One striking performance was the tango by the girls who had never learned to dance. The programme proceeded for an hour. (An eternity, the Freshies thought it.) One thrilling number was a sentimental proposal of marriage delivered by Miss — to an unfeeling and strong-hearted chair. (Congratulations are in order.) Finally the curtain fell on the last act of the evening's drama, and the actresses were treated to a liberal supply of delicious ice cream.

The college spirit has since descended on the Freshies, and they feel that they are Mac. girls in more than name only.

Y. W. C. A.

Since the opening of the new year two regular meetings have been held with an average attendance of 65. The plans outlined last term have been most successfully carried out. The first meeting was entirely in charge of the Junior Housekeeper Class, and the subject "New Year's

Resolutions," was splendidly dealt with in papers by Miss McIlquham and Miss Reek. The second was conducted by the One Year Normals, when Miss Foote and Miss Kately gave brief but most interesting addresses on "The History of the Y. W. C. A."

The course of study in the weekly Bible Class will be for a time "Women of the Bible." The meetings will still be under the leadership of Professor Reynolds, but brief character sketches of the various women will be given by the members of the class, followed by general discussion.

We shall have with us, Sunday, Jan. 31st, Miss Margaret Wrong, Intercollegiate Secretary of the Y. W. C. A. of Toronto, who is attending the "Rural Conference" in progress this week.

Miss Conklin, student volunteer representative from New York, will be with us Sunday, Feb. 7th, and will address our society in the interests of that movement.

Miss Mabel C. Jamieson, Senior Student Secretary of the Y. W. C. A., spent a day at the "Rural Conference."



Athletic.

Since the opening of the winter term skating and snow-shoeing have been by far the most popular sports. The carnival and Freshmen's skating party were events which will not soon be forgotten by the many who participated in them. The moonlight of the past week, together with the splendid condition of the snow, has made possible several most enjoyable winter picnics—"functions," which to some at least were a decided novelty. There have been several

hockey practices, and the following girls will probably form the Macdonald team: Miss Panton, rover; Miss Grenside, coverpoint; Miss Williams, left wing; Miss Hopper, goal; Miss Toy, right wing; Miss Stewart, centre; Miss Cochran, point. We are looking forward to some exciting matches in the near future. Though outdoor sports take precedent, the basketball teams have been reorganized and interest, we hope, will be kept alive till such a time as skating is over, and girls look about for some outlet for excess energy.



Red Cross Society.

The Red Cross commenced the New Year with a clean sheet, having sent the balance of nine dollars to headquarters in Toronto. The holidays, however were not fruitless as many of the girls brought back wristlets and scarfs which were immediately forwarded to Toronto.

Thanks to the Cosmopolitan Club, we had the opportunity of arranging the supper at their dance, the profits amounting to about twenty-five dollars.

The supper was served in the dining-room, which was attractively and suitably decorated for the occasion, each little table having a white cover with the red cross emblem and a vase of red tulips. The same color scheme was carried out in the red and white ice cream and red and white cakes.

The success was largely due to the untiring efforts of the Red Cross representatives under the supervision of Miss Toy and Miss Rogers.

We wish to thank the Cosmopolitan Club for their kindness in giving us this opportunity to add to our

funds, and also for their valuable assistance in connection with the same.



The Cosmopolitan Dance.

A pushing, struggling crowd of excited "Macites" were thronging the bulletin board one day about the middle of January, and as the last belated victim came straggling over from cooking class, she was seized and put out of her misery by the wonderful news that a dance "had been arranged" by the Cosmo. Club, and was to take place in the hall on January the 22nd.

You may imagine what joy this brought to the hearts of one hundred disconsolate girls who had given up all hope of another dance this term.

On second thought, some of the girls were rather doubtful as to whether they were really "invited" or merely "informed" that there was to be a dance, but when the formal invitation came a few days later, all doubts were laid at rest and there was a general scurrying for new ribbons and laces and all the little accessories which make a girl so much more beautiful at a dance than she can hope to be at any other time.

Mysterious long boxes began to arrive from home and were triumphantly carried to their rooms by the lucky owners, who were glad to display the new party dresses to admiring groups of girls.

The eventful evening arrived at last, and at half-past seven the halls began to blossom forth with gay dresses and flowers. Shortly after eight o'clock the strains of the opening waltz poured forth from the instruments of Bodley's Orchestra, of Toronto, and the happy dancers stepped into the gymnasium. The custom-

ary conversation well suited this particular dance for "the music was sublime," "the floor was perfect," and as the men had quite forgotten the storms they had been obliged to face, or the trouble they had had chasing the suit which was to be delivered by 6 o'clock, the conversation passed to merrier subjects or stopped altogether while the dancers gave themselves up to the pleasures of the waltz.

The decorations were simple but most appropriate to the national spirit, the flags and colors of the allies hid the screened windows, pretty Chinese lanterns shaded the lights, while the orchestra was surrounded by palms and ferns.

It was a most attentive committee that helped fill the programmes for the girls or gave one the long-sought opportunity to meet one's latest "crush."

The number of old girls present received a royal welcome from the "Macites" as well as their friends across the campus.

Supper was served from 10 until 11:30 o'clock, in the dining-room. The proceeds of the supper went to the Red Cross Fund, of which Miss Toy has charge. Miss Toy, assisted by Miss Rogers and a host of willing Mac. girls, are to be congratulated and the splendid and successful way in which they managed the affair.

The after supper numbers, as usual, proved to be the most enjoyable of all, and even though the orchestra was exceedingly generous with its encores the last dance came only too soon. About 1:30 a.m. "God Save the King" was played and the "gym." deserted. However, the couples still lingered in the corridor and around the "well," bidding one another good-

night or saying "See you at the rink to-morrow," or "Won't someone play just one more dance?"

However, our hopes were in vain. We said good-night to our partners and wandered wearily up to our

rooms with that "after the ball" feeling, where, after kicking off our pumps and donning kimonas, we collected in various rooms to discuss over and over again our adventures of the evening.



ACCIDENT PREVENTION

That accident prevention is largely a matter of education has been clearly demonstrated by carefully compiled statistics of some United States railways, recently published. On one railway, during a period of fifty-three months of operation since the formation of safety committees among the employees, a reduction of 371 is shown in the number of persons killed and of 1,258 in the number injured.

At the same time, despite this favourable showing, in three years there were registered 17,731 accidents, of which 99 out of every 100 could have been prevented.

While no statistics of the accidents occurring throughout Canada, are available, it requires only a casual glance at the newspapers to show that the number is large. In view of this fact, it is very evident that there is great need of an extension of the "safety first" educational movement in Canada. The subject is one which should not be left entirely to private interests to develop;

it is in the general interest of Canada at large that the number of her disabled and injured citizens should be greatly reduced.

A fertile field for the propagation of the "safety first," or accident prevention movement is the public school. The need of care should be taught the child, as lasting impressions can be made upon the young mind. The pulpit also has an influence which should be directed towards education along accident prevention lines. This work may rightly come under the head of social service, in which some churches are taking an active interest.

Canada owes it to her people, municipalities owe it to their citizens, schools and other organizations owe it to their scholars and members that attention be faithfully directed to the matter of safety and accident prevention, both public and personal, and that they be made to realize that it is better to be careful than be a cripple.—D.

Locals



Take Heed.
 Healthy boy,
 Cigarettes,
 Little grave,
 Violets.



Marjory (sighing)—“I wonder how many men I’ll make unhappy when I marry?”

Grace—“Well, it all depends on how many men you intend to marry.”



Overheard at Freshman Skating Party.

Freshman—“Are you going home now?”

Macite—“Yes, it’s 10 o’clock.”

Freshman—“Well, good-night.”

Carncross—I see Winnie’s grown quite big.

Lil Arthur Springstead—Winnie who?

Carncross—Winnipeg.

Nobody home but the blacksmith, and he’s making a bolt for the door.

FLOWERS

We have the largest and best equipped plant in Canada for growing flowers under glass. We fill orders for cut flowers anywhere from Montreal to Winnipeg. Give us a trial for your next banquet.

Prompt Service

Moderate Prices

Miller & Sons
FLORISTS

Lauder Avenue

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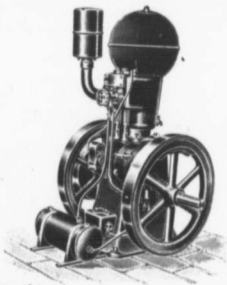
POWER ON THE FARM

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.

Jim Fuller says—If religion was good for the complexion men would seldom get their share of beauty.



Jack Griffin remarks that he used to sing in the choir at home, but they found out what was the matter with it.



In the Horticulture Class.

Can the gentlemen tell me the difference between annual and biennial plants?

H. Harley Slyn—Sir, annuals are plants that die once a year and biennials are those that die twice a year.



"Blondie" Wilson claims that hockey is not as rough as football. Which reminds one of the order given by a foreman at a steel plant when he told his men to lay off work and carry pig iron.

Things We Should Like to Know.

Why Patterson would like a private phone in his room.

Why Frank Donald always carries Hamilton street car tickets.

When Strong will publish his new bulletin entitled "Museum Pests."

What Charlie Nixon thinks of water in the home.



Woody Wilson—I hear John was pretty full last night.

Munny Munroe—John who?

Woody Wilson—Demijohn.

WHEN THE LAST CHILD LEAVES

For half your life you've labored with "the children" in your mind,
 Sometimes a little step ahead, sometimes a mile behind,
 And many a night you've pondered on the whenceness of the how,
 But you did it, yep, you did it! raised 'em one and all, and now—

Lordy, but it's lonely when the last child leaves;
 The year is at the autumn and the very weather grieves;
 The skies are gloomed and raining,
 The whipped trees are complaining,
 And there's sobbing in the chimney and a weeping at the eaves,
 For, oh! it's lonely, lonely, when the last child leaves.

There's a good deal of that feeling when the baby went to school,
 Or the big boy went to work (as independent as a mule!)
 Or the girl went off to college, with a happy, hurried kiss,
 But always there were comings-back; it never was like this!

So, it's lonely, lonely, when the
 The living-room has suffered lo
 And eke the cheerful dining-ro
 Becomes a sad, repining-room,
 For every room is lonely when t
 So, oh! it's lonely, lonely, wher

You cannot change the universe—y
 Your link is in the chain of life, and somehow that is good;
 But you were first to them so long in all their joys and cares,
 And now the last one's left you to remembrances—and prayers.

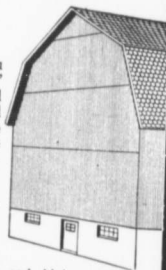
So, oh! it's lonely, lonely, when the last child's gone;
 Seems most like a waste of time just living on and on,
 With no one left to do for,
 To hustle for and stew for,
 And you know the dusk around you is the twilight, not the dawn.
 So, oh! it's lonely, lonely, when the last child's gone.

—Edmund Vance Cook.

"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 Lights and Ventilators.



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

CANADA'S DUTY—1915

Conservation and development of her

WATER-POWERS

MINERALS

FORESTS AND

FISHERIES

Large increase in farm production

Increase in live stock production

The cultivation of the garden plot

The purchase and use of goods "Made in Canada"

Provision for technical training of her sons and daughters

Further advances in providing sanitary homes and
clean cities for her people

Extension of the "Safety First" movement

Further reduction in fire losses

Business as usual

TWO FARMERS

The slipshod farmer goes by guess, and has all kinds of black distress. He doesn't keep his head on straight, but sticks to methods out of date. You say, "Why don't you take a brace, and cultivate your blamed old place, in modern style, with modern tools, according to the latest rules? Why not improve your flocks and herds? Then you'd have coin to pelt the birds."

He answers through his old straw lid: "I do the way my father did. I have no use for modern rules, for agriculture learned in schools. No farmers' journals do I need; I have no time to sit and read. I've too much trouble on my mind, to stand and talk here 'till 'Im blind; my cows are all producing whey, my hens have never learned to lay; my hogs are troubled with the thumps; my horses have the jumping mumps; our old stone churn is out of plumb, and so the butter will not come; the well is dry, the chimney smokes,

my hired men are lazy blokes, and I must kick around and roar, just as my father did of yore."

The modern farmer, up to date, has all things running smooth and straight. He knows the farmer must advance, and knowledge gain, at every chance. For farming is no blind man's game; the winner needs a lofty aim, must have a comprehensive view, and know what other farmers do. He ought to know what kind of stock will bring him roubles by the crock, know how to combat bugs and worms, and put a crimp in deadly germs; he ought to know what kind of grain will flourish best on hill or plain; he ought to know what kind of pills to give his horses for their ills, a thousand things he has to know, if he would sidestep grief, and so he reads farm papers every day, and knows the good one makes it pay; it pays a hundred times its cost—the time spent reading isn't lost.—*Walt Mason.*



Peerless Perfection
 Made in Canada. Quality worthy of the name and Nation. A fence of defence—never gives offence.

The Fence That's Locked Together

The attacks and onslaughts of animals can't faze it. It's strong, yet springy. Manufactured from Open Hearth steel galvanized wire. When made by this process, impurities are burned out of the metal, removing one of the chief causes of rapid corrosion or rusting. If you are considering the fence question, let us estimate on your job—and advise with you as to the best way to build—we will put you in touch with our nearest agent. Send for our latest catalog. Ask about our poultry fencing and ornamental gates. Agencies nearly everywhere. Agents wanted in open territory.

THE DANWELL-HOXIE WIRE FENCE CO., Ltd.
 Winnipeg, Man., Hamilton, Ont.



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Wide Margin of Strength



In purchasing a cream separator it is important to get one with a wide margin of strength. In that way you avoid possibilities of breakdowns and secure a machine that will give long service.

The 1915 Model

Standard

cream separator is now built with one frame and gearing for all capacities. This frame and gearing is strong and rugged enough to provide a wide margin of safety for the largest capacity. The main gear and intermediates have bearings $2\frac{1}{2}$ inches long. The gearing would be sufficiently heavy to drive a bowl of even 2,000 pounds capacity. Think what a tremendous margin of strength this means in our 350 to 1,000 pound machines.

The bowls of the Standard (any size from 350 to 1,000 pounds) are also sufficiently over capacity to skim 20 per cent. faster than their rating and still do the work as well as other separator bowls.

To get a separator of super strength and over capacity is good business. You know that. But do you know all the other superior features of the Standard cream separator? Write for our latest separator catalogue and get full particulars.

The Renfrew Machinery Co.

Limited

Head Office and Works

RENFREW, ONT.

AGENCIES ALMOST EVERYWHERE IN CANADA

To Miss Maysie M—k—The college water is not contaminated, so you will be absolutely safe in using it upon anyone going into the institute.

(Note—Third Year take lectures at the Institute on Mondays at 10:25 a.m and Fridays at 11:15 a.m.)



G. E. P. (on bended knee)—“My dear, there has been something trembling on my lips for the past few weeks.”

Miss F. A.—“So I have noticed, but why don't you shave it off?”



Conundrum.

“Why is the Dean of Residence like a catalytic agent?”

Answer—“Because he has no value but hastens the reaction.”

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.

LYNNDALF FARMS,

Simcoe, Ont.

P. E. Angle, Supt.

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

MADE BY

The Scotland Woolen Mills Co. Limited

SALES AGENTS:

KING EDWARD CLOTHING CO.

OPPOSITE CITY HALL

SEEDS



We herewith give our present prices on a List of Seeds selected from our 1915 Catalogue. These were selected because we thought they would be the most interesting to O. A. C. men. These seeds show purity, quality and adaptability to our country. We shall be pleased to send samples for your inspection.

LYMAN'S GRIMM ALFALFA—This strain is hardy. The trial plots at O. A. C. have proven this beyond the slightest doubt. Price: \$1.10 per lb. post paid; 5 lbs. at \$1.00 per lb. post paid; or if 10 lbs. or more are ordered at 80c per lb., express or freight collect.

ONTARIO GROWN ALFALFA—No. 1 Government Standard \$17.00 per bush.

Red Clover, Extra No. 1 Government Standard, per bush.....\$14.00

Timothy, "Diamond" No. 1 Government Standard, per bush..... 5.75

Diamond Timothy grades Extra No. 1 for purity.

"Sun" Red Clover—No. 1 Government Standard, per bush.....\$12.50

"Ocean" Alsike—No. 1 Government Standard, per bush..... 14.00

Allow 30c for cotton bags for Clovers and Timothy.

WALKER SON'S SEED CORN—This is the best seed corn Ontario has to offer. Carefully grown and cured in the most approved method. Shipped on the cob in bushel crates (70 lbs. net), \$3.00 per bushel. Varieties: Wisconsin No. 7, Golden Glow, White Cap Yellow Dent and Longfellow.

O. A. C. No. 21 Barley, registered, per bushel (bags free).....\$1.50

O. A. C. No. 72 Oats, registered, per bushel (bags free).....\$2.00

Banner Oats, registered, per bushel (bags free).....\$1.25

Siberian Oats, registered, per bushel (bags free).....\$1.20

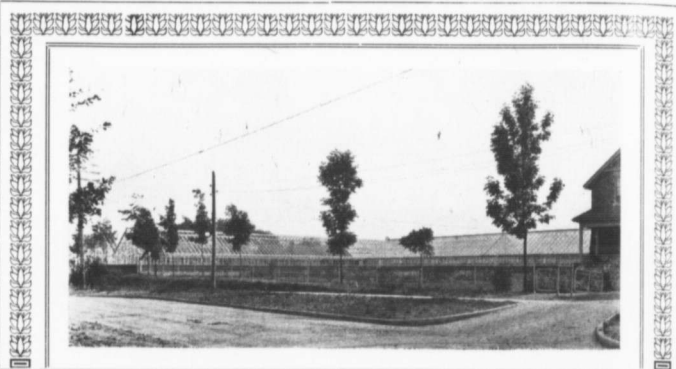
We pay railway freight to points throughout Ontario and Quebec on all orders of \$25.00 or more.

GEO. KEITH & SONS

SEED MERCHANTS SINCE 1866

124 KING STREET EAST, TORONTO

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



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.



3 ft. 2 in. x 6 ft. 0 in., for 4 rows
8 in. glass - Price \$1.20

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.



3 ft. 0 in. x 6 ft. 0 in., for 3 rows
10 in. glass - Price \$1.15

BATTS LTD.

374 PACIFIC AVENUE
WEST TORONTO



Write the date on the negative.

Make the pictures that you take doubly valuable by recording, briefly, on the margin of the film negative, the all important: **who—when—where.**

You can do it instantly, permanently, at the time you make the exposure with an

Autographic Kodak

THE PRICES.

No. 3A Autographic Kodak, pictures $3\frac{1}{4} \times 5\frac{1}{2}$	\$22.50
No. 3 Ditto, pictures $3\frac{1}{4} \times 4\frac{1}{4}$	20.00
No. 1A Ditto, pictures $2\frac{1}{2} \times 4\frac{1}{4}$	17.50
No. 1A Autographic Kodak, Jr., pictures $2\frac{1}{2} \times 4\frac{1}{4}$	11.00
No. 1 Ditto, pictures $2\frac{1}{4} \times 3\frac{1}{4}$	9.00

CANADIAN KODAK CO., Limited, TORONTO.

Catalogue free at your
dealer's, or by mail.



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

PHYSICAL CHEMICAL & BIOLOGICAL APPARATUS

Send particulars of your requirements and we will gladly furnish quotations

The Geo. M. Hendry
Company, Limited

Educational Equipment,

215-219 Victoria St., Toronto,
Ontario.

OUR HOCKEY STICKS

Are made of sun-dried and carefully-selected lumber. Try our Inter-faculty Specials

OUR BOOTS

Are designed and selected to meet the needs of every skater, from the lady or gentleman who skates for pleasure to the star player on a championship team making a dash for the winning goal.



We Carry a Full Line of all the Best Brands of Skates



Snow Shoes made of best seasoned material for ladies, gentlemen and children. Mocassins, all sizes.

SWEATERS, HOCKEY PANTS, PROTECTORS, ETC.

WRITE FOR CATALOGUE

J. BROTHERTON

578-580 Yonge St.

TORONTO

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

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.

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

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.

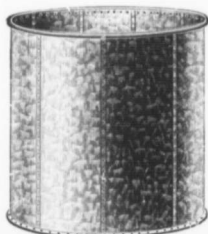
Equally good service returning.

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 tomorrow 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.

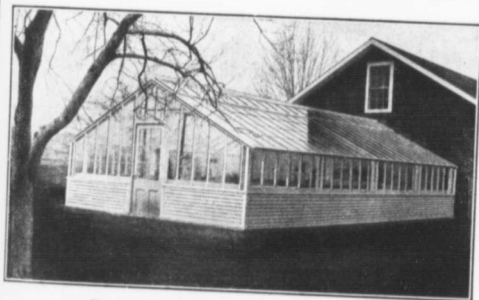
AGENTS WANTED to sell the
New King Raspberry and other
specialties.

STONE & WELLINGTON

Nurserymen

TORONTO

Greenhouses "Made in Canada"



Type of greenhouse erected on farm.

The farmer has
not heretofore con-
sidered the green-
house as an adjunct
to successful farm-
ing.

But to-day the
possibilities of rais-
ing many fruits and
vegetables under
glass are attracting
attention. 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 veget-
ables.

The increasing use of farm greenhouses has led us to design a special house for
this use. It is designed for the highest efficiency and to be operated and kept up at
very low expense.

We will be glad to send you further information about farm greenhouses. Write
for it.

GLASS GARDEN BUILDERS, LIMITED

Makers of Greenhouses, Heating and Ventilating Apparatus, etc.

201 CHURCH ST. (Dept. A), TORONTO

P. O. BOX 1042, MONTREAL

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



A 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

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

Stable Your Cattle the Superior Way



If you are thinking of building a new barn or re-modelling 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.

MILK PROTECTION

SO THOROUGH ARE THE CLEANING PROPERTIES OF

Wyandotte
Dairyman's
Cleaner and Cleanser

that it cleans far beyond what the eye can see, removing thousands, yes millions of bacteria, the destroyers of the food value of milk and milk products.

Indian in Circle



On Every Package

This protection to the milk means cleaner milk, higher quality milk, and better milk products, and consequently better prices throughout.

For the convenience of dairymen, milk dealers, butter and cheese makers, Wyandotte Dairyman's Cleaner and Cleanser is sold by practically all Dairy Supply Houses. If your dealer cannot supply you write your regular supply man.

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

Made in the U. S. A.

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

Business-getting Printed Matter

IS 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

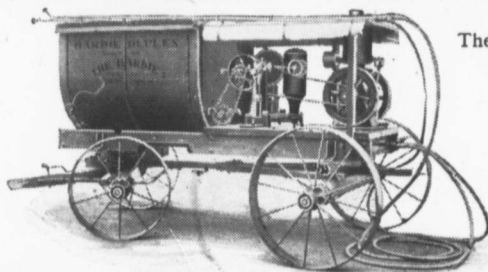
**The Advertiser Job
Printing Company, Limited.**

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

Power Spray Outfits



Proper Spraying yields Big Returns.

Unsprayed fruit is liable to be a drug on the market.

A Good Spray Outfit will soon pay for itself
and Adds to your Profits.

The Massey-Harris Sprayer

has Double Cylinder Vertical Pump with Bronze Plungers—Tank is made of selected Cypress—the Agitator is operated from top of the Tank—Front Wheels turn under the Frame—Cab protects the Engine—no Sprocket Chains or other “trappy” parts—Engine is Hopper cooled—runs in any weather and on the steepest side-hill.



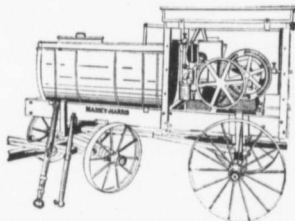
Massey-Harris Co., Limited

Head Offices—Toronto, Canada.

— Branches at —

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

— Agencies Everywhere —



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.

**WILLING
WITNESSES**

DAY by day we are receiving enthusiastic testimonial letters from policyholders whose Endowment contracts are now maturing.

These are our willing witnesses who come voluntarily into court and testify to the good faith of The Mutual of Canada.

No wonder! For they are receiving from \$110.00 to \$190.00 for every \$100.00 invested in premiums, to say nothing of the protection they have enjoyed.

The amount of the return, of course, varies with the term of the Endowment. Don't speculate! Take an Endowment policy and share in the prosperity of

**THE MUTUAL LIFE
ASSURANCE COMPANY
OF CANADA
WATERLOO, ONTARIO**

100

HOCKEY SUPPLIES

We can supply you with every Hockey requisite from Skates to Toques in many qualities. Let us know your requirements in

**SKATES, BOOTS, STICKS,
PADS, SWEATERS, TOQUES**

or any of the other lines of Hockey supplies. Our new catalogue No. 71 describes all these lines, and we will be pleased to mail it to you. Write for it to-day. Special prices for club orders.

HAROLD A. WILSON CO., Ltd.



**"I See Bill Erected
Another Natco"**

—Same old story. Bigger profits, more stock, an additional silo. And why is the second silo always a Natco, too? The reasons why are best appreciated by owners of other silos *not built for good*, whose walls are not air, moisture and frost-proof, resulting in much spoiled ensilage. The Natco stands year in and year out just as the day it was erected, yielding sweet, succulent silage in all parts, through all conditions of weather. Better benefit by the experience of others and erect the silo that's windproof, decayproof, fire-proof and verminproof—the

NATCO EVERLASTING SILO
"The Silo That Lasts For Generations"

It's built of hollow vitrified clay tile which will endure forever, and whose glazed surfaces absorb no moisture and totally exclude air and frost. It's reinforced by bands of steel laid in the mortar, and can resist all wind and silage pressures; thus a taller silo with a smaller diameter can be erected for there is no danger of a blowdown. Plan for your new silo now. Send today for a list of Natco owners in your province and ask for Catalog 7

National Fire Proofing Company of Canada, Ltd.
Toronto, Ont.

Made
in
Canada

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,

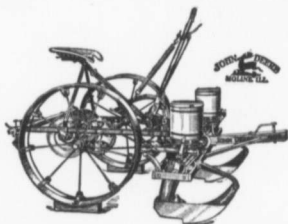
Guelph Branch.

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 Simple Transaction

The opening and conducting of a Savings Account at this Bank is easily done. Those who are not familiar with banking are welcome at our offices and they will find us glad to show how simple is the procedure in doing business with

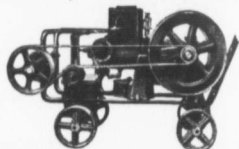
The Bank of Nova Scotia

For 83 years we have acted as a depository for the people's savings.

Paid-up Capital	- -	\$6,500,000
Surplus	- - -	\$11,900,000
Resources over	- -	\$90,900,000

GUELPH BRANCH:
T. G. McMASTER, Manager.

"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.

Gilson Manufacturing Co. Ltd.

52 YORK STREET - - GUELPH, ONT.

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

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



Price Need Not Stand in the Way

Don't let the question of price prevent you from owning a SPRAMOTOR and getting better crops. We make a SPRAMOTOR as low as \$6 and from that all the way up to \$350. Our \$6 outfit is as good value in proportion as the \$350 machine. There's a

Spramotor
It isn't a SPRAMOTOR unless we made it

for every need
—the small farmer and the

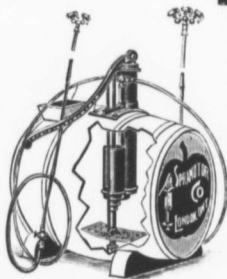
thousand-acre man. The knapsack outfit at the left is all high-grade and sprays at high pressure. We guarantee it to spray paint, whitewash and chemicals. The SPRAMOTOR is all brass, with dashing agitator around screen, automatic plunger, brass ball valves and patent hand valves. The price is \$12 with 6-gallon galvanized tank, or \$15 with 5-gallon brass tank.

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

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Reserve Fund - \$524,044.00

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Debentures issued for One
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We develop and print, also carry a full line
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FALL AND WINTER SUITS
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Free Range



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Shade and Spring Water.

Eggs \$1.50 per 15; \$6.00 per 100; \$50.00 per 1,000; Duck Eggs \$1.00 per 11; \$7.00 per 100. Day-old Chicks 15 and 20 cents each. Turkey eggs, 30 cents each. Ducklings, 25 cents each. Write

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PEERLESS EXTRA LONG
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Our gates are built for strength and endurance. Braced like a steel bridge. It is the gate that serves you best. Easily hung, quickly adjusted, convenient and in every way serviceable. The Peerless is braced like a steel bridge, just as the engineer strengthens the points of strain in a big, mighty bridge, so we have designed braces, stronger than was necessary, to make our gates stiff and rigid. They can't sag—they can't twist—they are great improvements over gates made the old way.

Peerless Gates

are made of first-class material. Frame-work of 1 1/2 inch steel tubing electrically welded together. Peerless pipe braced gates are all filled with heavy No. 9 Open Hearth galvanized steel wire—built for strength and durability—weather proof and stock proof.

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STONE'S FERTILIZERS

will help you to get the most out of your land. They will pay you a large dividend on their cost.

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Brands for every crop. Write for particulars.

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Concrete Tile from 4 in. to 24 in. all
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Pipe all made from crushed stone and
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FOR THE UP-TO-DATE FARMER.

The Steel Tube Post outlasts the wooden post five to one. Dampness won't rot it, insects can't weaken it, and it takes one-third the labor to erect.

Standard Posts and Standard Woven Wire Fencing make a combination that ensures the Farmer using them the best job possible in fence erection.

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CANADA'S OPPORTUNITY—Every foot of fertile soil in Canada must be sown and cultivated 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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I enclose \$2.00 and will remit the balance, \$4.00, when incubator is shipped.

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