

THE AAC REVIEW



NOVEMBER
1904

Tubular Separators Reveal Hidden Treasure

When the Spaniards discovered Peru they found undreamed of treasure. It belonged to the Aztecs—but the Spaniards seized it. Hidden treasure is daily slipping unnoticed through the fingers of many hard-working farmers—but they don't realize it. This treasure is the cream lost through poor skimming methods and the valuable skimmed milk ruined through improper handling. The use of a Dairy Tubular Separator discovers this treasure—prevents its loss—is a great gain to the farmer.



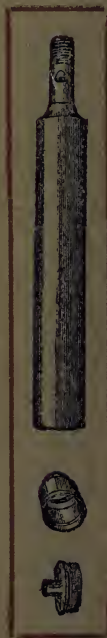
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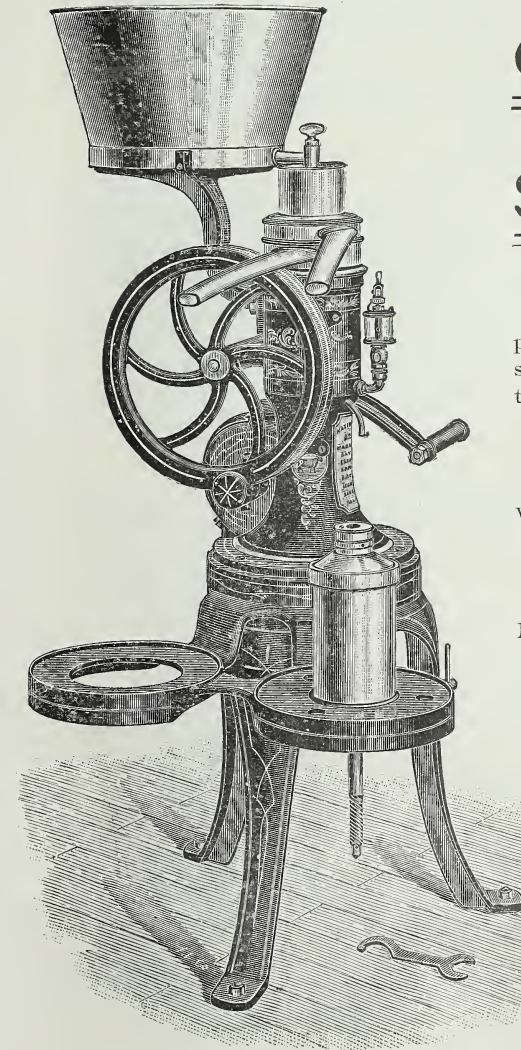
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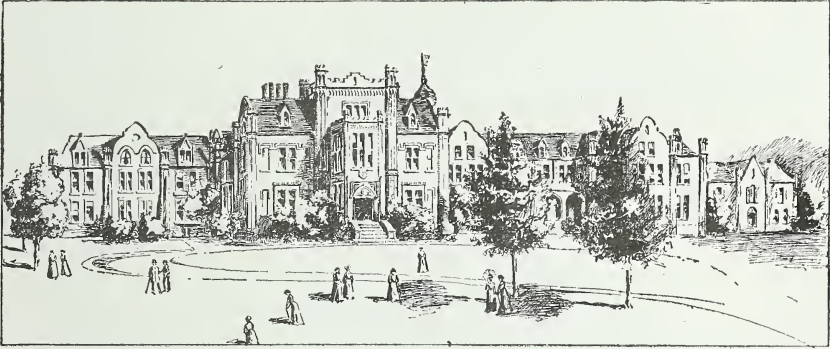
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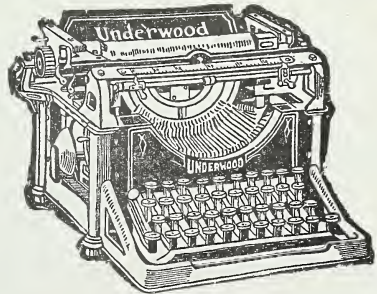
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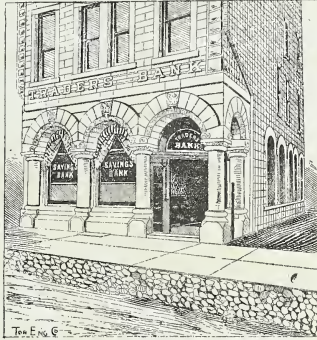
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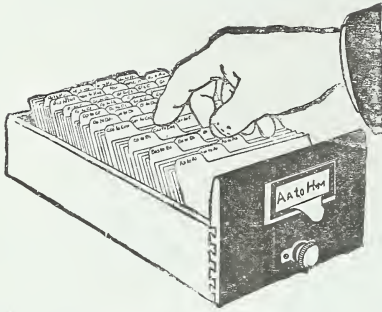
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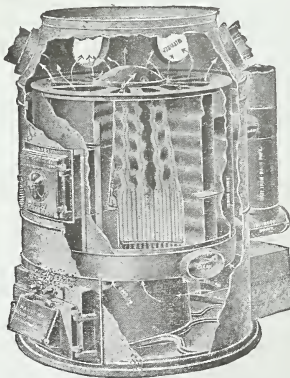
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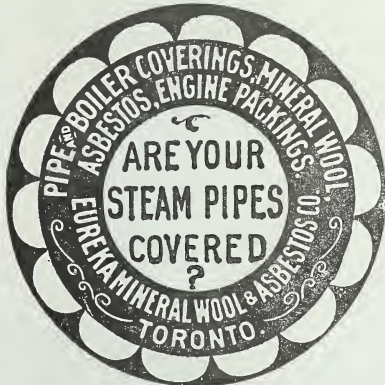
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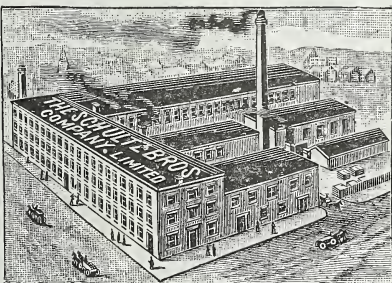
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Vol. XVII.

ONTARIO AGRICULTURAL COLLEGE,
NOVEMBER, 1904.

No. 2

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MR. BEYNONG NAG-TANY

is a graduate of Waseda University, of Tokio, Japan, who has recognized Canada's supremacy in the agricultural world, and is taking a course at the O. A. C. With the knowledge thus gained he hopes to introduce a new element into the agriculture of his native country. The progressive national spirit is shown by his ready mastery of the English language. He has prepared this article after a two years' sojourn in Canada,

TAKEN all together, there were four distinct conflicts of interest between Japan and Russia, which brought about the present war. These are :

1. The struggle for the possession of Port Arthur and Dalny.
2. Russian occupation of Manchuria.
3. The struggle for the political supremacy over Corea.
4. The struggle for the command of the Far Eastern seas.

THE STRUGGLE FOR THE POSSESSION OF PORT ARTHUR.

One will easily notice, upon looking at the map of the Far East, the importance of the positions in which Port Arthur and Dalny are located. Taking Port Arthur as the centre, draw a circle of 360 miles' radius, you will find the remarkable fact that all the prominent cities and sea ports in the Far Eastern continent—that is, Peking, Seoul, Chemulpo, Yinkow, Liao-Yang, Mukden, Yongampo, Wiju, Shan-hai-kuan, Takwo, Tientsin, Chefoo, Wei-Hai-Wei, Kiao-Chao,—are within the circle.

“The nation that occupies Port Arthur and Dalny, and has a navy commanding the Yellow Sea, will master the Far Eastern continent,” is the prophecy spoken by the late Japanese General Kawakami, the genius of the Chino-Japanese war, and the planner of the Japanese army now fighting in Manchuria. It was also well said that “the master of Port Arthur is the master of the Far East.” True to the words, Port Arthur is absolutely essential to the power commanding the Far East. Neither China nor Corea can escape serving in a subordinate condition, the power which occupies Port Arthur in the future, whether this be Russia or Japan. The occupation of these two points practically means the possession of the whole peninsula, and subsequently the southern part of Manchuria, which contains two-thirds of the entire population in Manchuria.

Of many reasons that are counted for the importance of Port Arthur, the strategic is of greatest consequence. From a strategic point of view, the excellent nature and situation of this port as a naval base is considered to be beyond comparison. A strong navy concentrated at this port would easily command the Yellow Sea, and would be always a terrible menace upon the Courts of Peking and Seoul. And, besides, it will greatly facilitate the occupants in landing troops against either China or Corea. As a fort, it is undoubtedly one of the strongest in the world, for the reason that the natural condition of the hilly land surrounding the city and the harbor afford an excellent defence. The strength of the defence, as we have so far witnessed in the present war, is proving to be beyond our measure.

The possession of it by Russia means

the possession of the Yellow Sea and all the sea ports around the coast. And more important is its future outcome, which would be the complete transmission of the whole political and subsequent matters covering China and Corea into the hands of Russian autocracy.

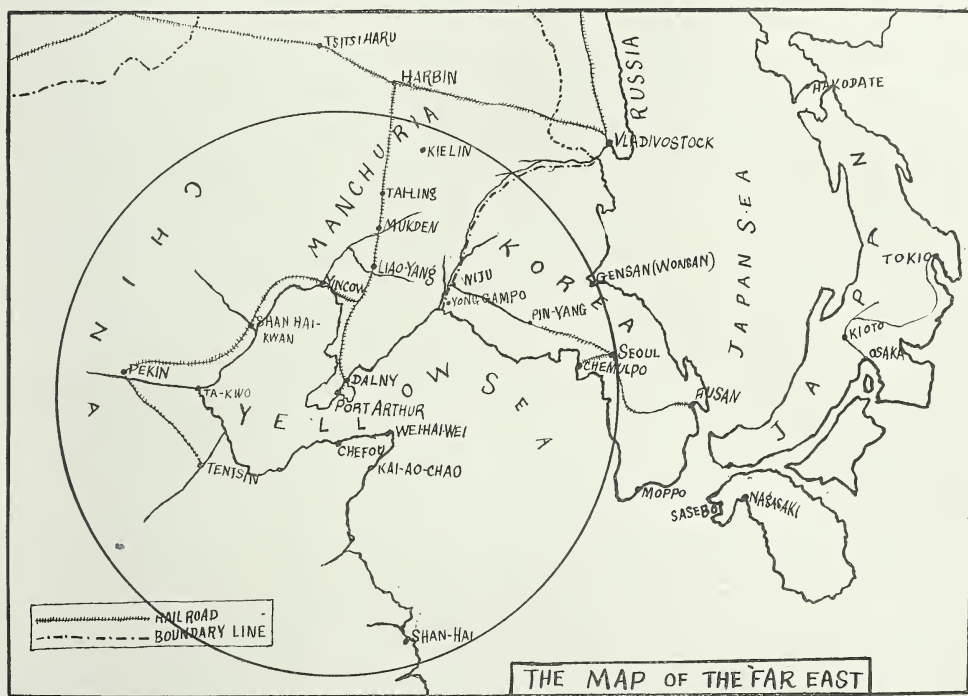
On the other hand, what it will mean if Japan succeeds in gaining possession of that port is a matter which requires a clear investigation. Japan will doubtless pursue the same policy of strengthening the position to its full extent, and will exercise her influence over China and Corea in restoring the peace of the Far East, and encouraging the adoption of the ways of European civilization. Her progressive policy, however, will never run beyond its limit, and certainly will prove to be a great advantage to the civilized world.

The strategic value of Port Arthur cannot be discounted by the fate of the Russian fleet. The complete defeat of the Russians on the sea was largely due to the weakness of the fleet. If Russia had succeeded in bringing the Baltic fleet before the war, and had established herself firmly in command of the Yellow Sea, the investment of Port Arthur by the Japanese would have been impossible, and thus an entirely different story of the war would have been related. A great possibility is, that this war might have been averted.

Since the time of Peter the Great, Russia earnestly desired to get a port free of ice, and constantly endeavored to attain this purpose. It was for this purpose that she fought the Turkish and Crimean wars. In every case she failed to accomplish anything in Central Asia. The feverish mind of the Russians, however, would

The Strategic Value of Port Arthur.

The Possession of Port Arthur and Dalny by Russia.



not be overcome, by any means, and never ceased to long for the same object.

It was about twenty years ago, that she turned her attention towards Eastern Asia, with the great hope of gaining a free port and expanding her territory. Before the Chino-Japanese war of 1894-5 she had never contemplated invading Chinese territory, nor Korean territory, only because she was unable to ascertain the real strength of China. The Chino-Japanese war, however, completely revealed the weakness of the Chinese Empire, and furnished valuable information as to the real condition of the Empire. There was no greater success in the history of the world's diplomacy than the success enjoyed by Russia in wresting Port Arthur and Dalny from the Japanese at China's expense. Soon after the treaty of Shimonoseki, in 1895, Russia invited France and Germany to take part in the protest against Japan, and

first succeeded in restoring the Liao-Tung peninsula to China, which was conceded to Japan under the treaty. The possession of the peninsula by China did not last long, and only two years after, in 1897, Russia succeeded in securing the 99-year lease of Port Arthur and Dalny from China. As these ports are situated in the neck of Liao-Tung peninsula, the lease of these positions means the lease of the whole peninsula, and, practically, Russia was administering with such an idea.

To the surprise of Japan, no power in the world would protest against Russia. By this time China began to realize the mean spirit of Russian diplomacy. Without any backing power, however, she could not deny any proposals from Russia.

Delighted by this extraordinary success, Russia rushed everything forward with her mighty energy. Within a few

years Port Arthur was fortified and Dalny was built, and the grand scheme of connecting Vladivostock and St. Petersburg, over five thousand miles of wilderness of Siberia, was completed in about the same time.

In building the great Trans-Siberian railroad she found it necessary to lay rails across Manchuria, through the city of Harbin, to make a short cut to Vladivostock.

Count Cassiny was then the Russian Minister at Pekin, and it was he who overwhelmed the Chinese Government with his high-handed diplomacy, and easily secured the concession from China to build a railroad through the northern part of Manchuria, and also to construct the Eastern Chinese railroad, which connects Port Arthur and Harbin.

Ever striving, the Russians rushed their work in constructing the railroad through the heart of Manchuria, and soon succeeded in bringing Port Arthur within the distance of only two weeks' travel from St. Petersburg.

What followed the completion of the railroad was, indeed, marvellous. Port Arthur was made her naval base; docks, yards, and arsenals were built, men-of-war were brought in from European Russia, and a large garrison was stationed. Dalny was made her commercial port in the Far East, with the idea of making it the centre of her eastern trade. The City of Dalny was organized, factories were founded, piers of iron were erected, thousands of merchants poured into the city, and steamships, sailing vessels and junks were crowded in the harbor of Port Dalny.*

The amount of money which was spent by the Russian Government in this great

enterprise must have been enormous. By a trustworthy authority it was stated that the whole expenses covering the construction of Port Arthur, Port Dalny, and the Eastern Chinese railroad, aggregated 700,000,000 roubles, (\$350,000,000). Hundreds of millions of the roubles spent upon the new enterprises by the government of St. Petersburg were those which were freely furnished by French capitalists.

With the mighty power of the Russia of that day, backed up by the endless gold, there was nothing too difficult to be done.

A sympathetic reader will easily understand what must have been the effect upon the Japanese minds, who were patiently watching the Russian accomplishment. Japan did not regret very much when the peninsula was dropped from her prize list in 1895, but she was deeply grieved, and the greatest indignation prevailed throughout Japan when Russia secured the lease of Port Arthur and Dalny.

It is an undeniable fact that all the Japanese, by this time, fully determined to fight against the Russians. The war was started on the 8th of last February, but the determination of the Japanese had already taken place in 1897. Ever since, the Japanese were putting up their preparations for the coming great struggle, in accordance with the enterprise of the Russians, who were constantly increasing their military and naval power, and strengthening all the positions held.

This struggle for the possession of Port Arthur and Dalny was largely responsible for causing the present war; nevertheless we must not refer to it as the direct cause, for the reason that during the negotiations of five months, nothing was mentioned regarding those places.

* Port Dalny is the name given by the Russians to the harbor previously called Ta-Lie-Wan in Chinese.

THE OCCUPATION OF MANCHURIA
BY THE RUSSIANS.

As the possession of Port Arthur and Dalny made Russia the administrator of the whole Liao-Tung peninsula, the possession of the Eastern Chinese railroad practically made her master of all Manchuria. From the beginning of the work on the Manchurian section of the Trans-Siberian railroad and the Eastern Chinese railroad, Russian engineers and Cossacks, in large numbers, began to pour into Manchuria. In the treaty of 1897, by which Russia obtained the lease of Port Arthur and Dalny, she made a solemn pledge not to interfere with Chinese sovereignty over all Manchurian territories, nevertheless, it was the idea of the government of Russia to colonize the Manchurian territories with their soldiers and Cossacks.

In the end of 1898 there were more than 25,000 Russian soldiers and Cossacks living on the government job, or taking up farms for themselves. During the construction of the railroads she built several manufacturing cities, like Harbin, Tsitsihar, and Tie-Ling, to concentrate all the markets in Manchuria, and, besides, a great many more minor towns and villages were newly found all along the railroad lines. In order to facilitate the public and private enterprises in Manchuria, the Russo-Chinese Bank was established, with the co-investment of Chinese and Russian capitalists, and was placed under the control of the government.

At the same time as the completion of the railroads, fortifications were erected in every important position, showing how vain were the pledges she had taken against her occupation of Manchuria.

The Boxer trouble, in 1900, gave Rus-

sia another opportunity to reinforce her Manchurian army, under the pretence of adding railroad guards. Most of the new army, however was destined to strengthen her grip of the territories.

Ever since Russia entered Manchuria, general native revolts had been taking place, which gave her a pretext for bringing forces to restore order within the territories.

The most barbarous outrages and wholesale slaughter were practiced by the Russians, and thousands of innocent natives were driven into the Amur River and shot and drowned. This terrible massacre was the price paid by the terrified Manchurians for their hostile conduct towards their aggressors, and within a week Russia was the master of the whole territory.

On August 4th, 1900, General Grodckiff, Governor-General of the Amur Province, celebrated his triumph on the annexation of Manchuria to the Russian Empire.

In November, 1900, Admiral Alexieff invited the Chinese authorities to take part in the government of Manchuria under Russian protection; in the meantime, however, further reinforcements were being poured into Manchuria, and the entire power of administration was soon in the hands of the Russian authorities.

Russian military administration and her exclusive policy had an injurious effect upon the trade of Japan, as well as England and the United States, especially when Yinkow, which is the most important treaty port of Manchuria, was seized and placed under the Russian administration.

France and Germany remained silent, being disinterested in or agreed upon the subject. So the settlement of the Manchurian question naturally rested

with the three powers, namely, Japan, England and the United States.

In order to restore the legitimate sovereignty of China, and to assure the commercial security of each nation, the representatives of the three countries at Peking co-operated with the Chinese Government to attain the purpose by peaceful means. It was at this time that the cries of "protection of the integrity of China," and "open door" prevailed throughout the civilized world, and were much discussed by the press, and these doubtless aimed against the annexant and exclusive policy of Russia.

Backed up by the powers of "open door" policy, the government of China compelled the Russians to sign a treaty on April the 8th, 1902. In this memorable treaty Russia promised to withdraw all her troops from Manchuria, on three fixed dates, leaving only a necessary number to guard the railway. The first withdrawal was to take place on October 8th, 1902, the second on April 8th, 1903, and the final evacuation on October 18th, 1903. This important treaty, however, had no influence whatever upon the Russian authorities, and was completely despised by them. Instead of withdrawing, the troops were increased, and in order to deceive the observers they were all dressed with civilian's clothes.

The unmistakable intention of Russia to enforce the annexation of Manchuria with military strength against any obstacles in its way, plainly revealed itself as her ultimate design.

Knowing the serious danger of Russia's determined control of Manchuria, the Japanese and American representatives made vigorous demands upon the realization of the policy of "open door," and final success was born in the form of a treaty, in November, 1903, in which

China, despite Russia's strong opposition conceded to open three new ports, namely, Antung, Mukden and Taku, on the coast of Manchuria, for the world's trade.

The significant movement made by Japan and the United States, however, had no favorable effects upon the real situation, and only resulted in causing Russia to redouble her obstinate attempt to complete the scheme even by taking up arms against those powers that might intervene. This threatening attitude has caused considerable uneasiness in Japan, lest her national existence be endangered.

Japan had never entertained such an idea as to occupy Manchuria by any means, until the outbreak of the present war. Her intention was and still is, I believe, to restore it to China, provided that an absolute guarantee is forthcoming from China not to allow any special concession to the third powers.

So far as Japan's national existence is concerned, the integrity of China is of vital importance. Especially in Manchuria is she deeply interested in the political condition, for the reason that the independence of Corea, which is the key to the self-defence of Japan, depends largely upon the peaceful condition of Manchuria. Japan's commercial interest is also to be considered as second in importance. A large amount of trade between Japan and Manchuria was annually recorded, which would certainly undergo a severe reduction by the practice of the Russian exclusive policy. Japan was quite willing to see peaceful progress in Manchuria or Corea, by means of peaceful enterprises, but she cannot withstand, without her vital existence being endangered, seeing the establishment of Russia's military

**The Japanese
Design
in Manchuria.**

strength therein and subsequent annexation of the entire territories.

Japan comprehended that the territorial integrity of China, as well as Korea, was quite essential to the permanent peace of the Far East, for the reason that when Russia succeeds in completing her grip on Manchuria it will inevitably lead to the partition of China and Korea.

When Germany first occupied Kiao-Chao and compelled China to comply with her demand, in 1897, Russia soon seconded it by occupying Port Arthur and Dalny. Following those countries, England also claimed to be entitled to occupy Wei-Hai-Wei for the sake of the balance of power. France and Italy were trying to get their shares and were only checked by the withdrawal of the United States.

These events in the past few years were too significant an indication as to the future fate of the old Empire, and the hermit kingdom, a fate which caused great consternation in Japan while Russia was pushing forward with her arbitrary intrigues.

Hereupon Japan fully realized that the whole responsibility for the protection of these countries was resting upon her shoulders, and that she was called by Heaven to fulfill the position of guardian, for there was no other nation in the world yet willing to risk a war against Russia in order to bestow permanent peace in the Far East. It considerably strengthened her determination to fight, if necessary. It was, however, feared in Japan, that France might help Russia in the case of Russia's defeat, and consequently a thick mist was covering the exact result of war. The treaty of alliance with Japan and Great Britain,

which was signed in 1902, had evenly altered the balance of power in the Far East, and Japan clearly saw her way to great victories.

Suppose that she was too weak, or neglected to check the Russian achievement, what would be the probable outcome of the political condition in the Far East? The Russian grip of Manchuria, including three provinces, namely, Shing-king, Kie-Ling and Armure, will become unconquerable; Germany is more likely to cut Shantung peninsula; England will control Cheking and Kiangsu provinces; Japan will move upon Foo-Kien to control Formosa Channel; France will certainly occupy Kuangsi and Kuang-Tung provinces; and the United States will enter Korea, with Japan and Russia, to divide each other's sphere.

Japan will probably be the next to be considered by the powers, and if she does not undergo another partition, she will, perhaps, be held as neutral under the co-protection of the world's power. Of course it will be realized only when there is no Japanese living on the island. But so long as there exists any souls of the Japanese blood, no nation will be permitted to interfere with her soil.

During the negotiations, however, Japan simply demanded Russia, as regards Manchuria, to formally recognize the sovereignty of China over the territories, and was offering to respect Russia's special interests covering the railroads and other peaceful enterprises, provided with the evacuation of unnecessary forces.

She thus offered most conciliatory terms for the sake of peace, but was recklessly rejected by Russia, which caused directly the declaration of war.

THE FARM LABOR PROBLEM.



IN recent years the scarcity of suitable farm help, both in Canada and in the United States, has been very keenly felt, and has demanded the attention, not only of practical agriculturists, but also of thoughtful men in other vocations. The situation is critical, and as yet the only remedy that has been applied is immigration. Before prescribing further remedies, it would seem well to make some investigation of the causes which lead to present conditions.

It may be well to remind ourselves, first, however, that the position of the farmer who depends upon hired help is unlike that of any other sort of employer. If the manufacturer of implements loses his workmen, he can lock his doors and let out the fire. If the merchant cannot get clerks, he, also, can "shut up shop." The farmer only is bound to keep going. His cows will not store up their milk, nor will his pigs' appetites accommodate themselves to the accessible supply of labor. Hay must be made while the sun shines; grain crops must be harvested when ripe; corn and roots must be gathered in before the frost comes; and so forth. Thus it is that the distribution of labor on the farm is absolutely dependent upon climatic and other conditions over which the farmer has little control, and consequently his need of help at suitable times is the more imperative.

The causes which have contributed to bring about the present farm labor conditions are numerous. One thing, at least, can be said without fear of contradiction: the rural youth have migrated cityward, and have left the country

homes depleted of some of their best blood. There is no extraordinary dearth of young folk in the country; but as they grow up they abandon the farm and engage in other occupations. Some of the boys enter the so-called learned professions; others become workmen in factories or shops; still others go into the service of the railway corporations. The girls become school teachers, stenographers, factory hands, and the like. Nor is it to be wholly deplored that there is this movement to the cities, for the cities (and therefore the country, too) are enriched by the presence in them of vigorous, industrious, sober young men and women, who in time supplant the somewhat effete and artificial type. Nevertheless, one does regard with some misgiving the case of the farmer whose children have all left him, and who is finally compelled to sell out. One fears that the existence of many such cases bodes ill to the country at large. Of course it must be remembered that the Great West has claimed many of our enterprising young people, and that they are there making homes for themselves, as did their fathers here. It is well for our nation that there is an outlet of this kind, where strong, independent, resourceful men and women are developed. We may congratulate ourselves that there is still some demand for strenuous endeavor and stern economy, else were it worse for us.

And yet, with the legitimate demand of the Great West, and of our eastern cities, for the rural youth, there is something else which largely determines the course of events. If you ask a young man why he is leaving the farm for some

other occupation, he will probably say—"I shall get better wages." If you ask a city laborer why he does not work on a farm, he will probably say, "I get better wages where I am." If you ask a farmer why he does not give better wages he will probably say, "The business won't stand it." There is truth in all these assertions, however confident we may be that there is something besides hard cash to be reckoned with, to wit, the sanitary and moral environment of any occupation; and it therefore becomes us to determine what is the degree of truth. Is it true that an hour's labor of given quality applied on the farms of this country is less remunerative as far as hard cash is concerned, than the same quantity of work of similar quality applied elsewhere? This is a vital question, for if the farmer is working thus handicapped, not only is his own labor less productive than it should be, but he cannot attract suitable help from other occupations; he cannot compete in the labor market on an even footing with employers in other lines of work.

For a quarter of a century now Canada's fiscal policy has been protectionist in character, and with this protection has been combined in recent years an elaborate system of subsidizing and bonusing. The avowed object of this policy has been to encourage and protect home industry. That was its justification when it was inaugurated; it is still the plea upon which its maintenance is urged. It is not my purpose to here examine the doctrine of Protection; I wish merely to call the reader's attention to one aspect of its working out in Canada. While the system of protection has never ostensibly aimed at being partial to certain industries, the fact is that by its working the Canadian farmer has been left unpro-

tected, while the worker in other occupations has actually benefited by the protection designed for him. The reason for this is apparent. The Canadian farmer must market the most of his produce abroad. The prices of his cheese and butter, his bacon and beef, his wheat and wool, are determined by market conditions mainly beyond the Canadian boundary. Protective tariffs on such products do not protect the producer. On the other hand, the Canadian manufacturer of farm implements, tools, stoves, clothing, etc., finds his main market—practically his only market—at home, and, being protected from foreign competition, is enabled to charge almost what he pleases. If he does sell his surplus abroad he can recoup himself for any losses thus sustained, as did the German manufacturers of sugar, by charging exorbitant prices at home. Thus it is that the farmer, though nominally protected by tariffs, is not really protected, and is, in addition, subjected to a tax for the benefit of other classes in the community; for, be it remembered, most of the farmers' raw material consists of manufactured products whose prices are enhanced by the tariff, while the raw material in other industries is largely on the free list.

Hence it is that there is an actual discrimination against the Canadian farmer by the tariff that is not ostensibly designed to oppress him, whatever its real design may be.

There is, moreover, in addition to protection through tariffs, the system of bounties and bonuses. On steel rods produced in Canada there is a bounty of \$11.40 per ton. The dry dock at Collingwood is bonused to the extent of 3 per cent. annually on the whole investment. Nearly all metal industries are bounty-fed. Beet sugar is bonused, and

so with other products too numerous to mention. We must consider also that the subsidizing of railway corporations, mining and lumbering enterprises, etc., puts them at an advantage in their competition for labor.

It seems, therefore, that the farmer is at the mercy of a double-edged sword. The prices he has to pay for much of what he buys are increased by tariffs, while the prices at which he sells most of his products cannot be materially affected thereby. In addition to this, he cannot get laborers to work for him when bounty-fed, subsidized and tariff-protected industries can easily pay higher wages than he can afford. Thus, he is cut both ways, and it is not to be wondered at, that, notwithstanding all the good that is being done by agricultural education, the lot of the farmer is, and is bound to be, under present fiscal conditions, a rather sorry one.

This, I believe, is one reason why the farm labor is so scarce, and why wages are so high. Indeed, I am informed that a certain metal industry in Hamilton gets a bounty large enough to pay its whole wage bill; and this is not the exception. How can the farmer compete with such a corporation? Why should he not stand on an equal footing with other employers of labor? Is his industry not sufficiently important, sufficiently worthy? Let readers of the REVIEW answer these questions.

If a personal reference may be pardoned, let us say that a Scottish immigrant whom I hired last fall left me after a few weeks' stay to work for what he considered were better wages in a manufactory of agricultural implements in the city of Brantford. Not only was I left without sufficient help, but I had to pay part of his wages in the factory, through the enhanced prices I paid for the imple-

ments. And, moreover, the local market created by such manufactories meant practically nothing to me. Immigration then, does not appear to be a very satisfactory remedy, however desirable it may be as a makeshift.

What I should like to impress upon the reader is that Canada's fiscal policy, and all the organized bodies and movements to maintain or aggravate that policy, are largely responsible for the farm labor problem.

Of course, as has been said, there are other causes. There is general unrest. It is fashionable to live in a feverish way, and this can be done better in the cities than in the country. The hours of work on the farm are not so regular as those in a large factory; and companions are fewer. The farm has been held somewhat in disrepute, and farm life has had too much drudgery about it. But with all these, and other causes to be weighed, there remains the very important cause mentioned above; and it seems to me it is working against tremendous odds to try to inspire the farmers of this country when their labor is so poorly remunerated, and when they are bowed down by heavy burdens unjustly placed upon their shoulders. The peasantry of Russia are crushed to the earth by cruel taxation in order to sustain in luxury a selfish and parasitic governing class, and to equip and maintain a huge armament. As a result they grovel like beasts, and are amongst the most unproductive of all peoples. Of what use to them are the discoveries of modern science? Who among them can avail himself so?

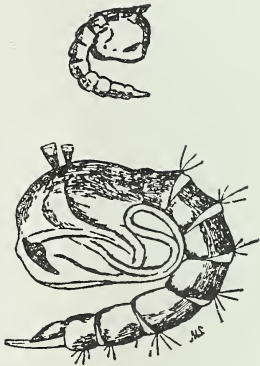
Science is good; education is good; but without economic justice and political equality and morality their good will be a dream. Let the farmer be inspired by the grand possibilities of his noble profession, but at the same time let him be given a chance to realize those possibilities. Let thinkers bestir their wits and see whether or no the farm labor problem, like most others, does not find its source in selfishness and injustice existent somewhere!

W. C. GOOD, B.A.

MOSQUITOES.



WHEN I began the study of mosquitoes, I imagined that all mosquitoes were alike, but I soon found that there were many different kinds, with different habits and powers to do harm. I also found that every quiet pool of water was not a breeding-place for mosquitoes, as most people suppose. I was able to prove to my own satisfaction that a female mosquito may "bite" more than once, and that it does not necessarily die after a meal of blood.

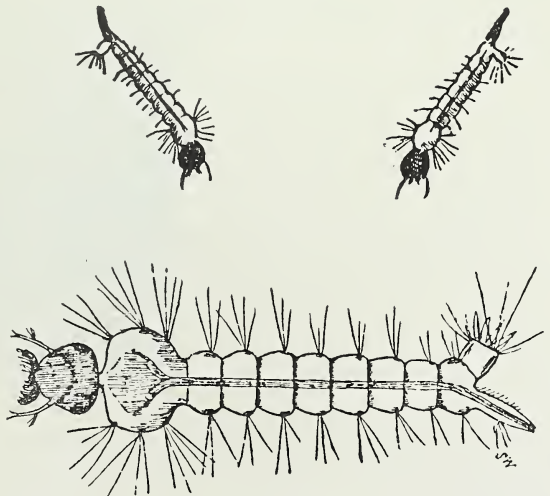


A "Wiggler."

For convenience of observation, water containing "wrigglers" was brought from a marsh and put into large battery jars, over which cheese-cloth covers were put to prevent the escape of the adults. The life history of the common mosquito was by this means easily determined.

The long, slender eggs are laid side by side in a canoe-shaped mass on the surface of the water. These hatch in a day or two, and larvæ escape from the lower ends into the water. The larvæ are well known, and are commonly called "wrigglers," a name suggested by their wriggling motion as they swim through the water. The larva has a large head and thorax, but a slender abdomen. The second last abdominal segment bears a breathing-tube, and when the larva is at rest it hangs, head downwards, in the water, with the opening of this tube at the surface. At the end of this tube is a rosette of plate-like lobes, which, floating on the surface of the water, keeps the larva in position when at rest.

The larva grows rapidly, and after a few molts it changes into a club-shaped pupa, the head and thorax being greatly enlarged. With this transformation a remarkable change takes place in the respiratory system: there are now two breathing tubes, and these are borne by the thorax. At the tail-end of the body there is a pair of leaf-like appendages, which function in swimming, for the pupæ of mosquitoes differ from those of other insects in being active. The pupal state lasts only a few days, then the skin splits down the back, and the adult winged mosquito

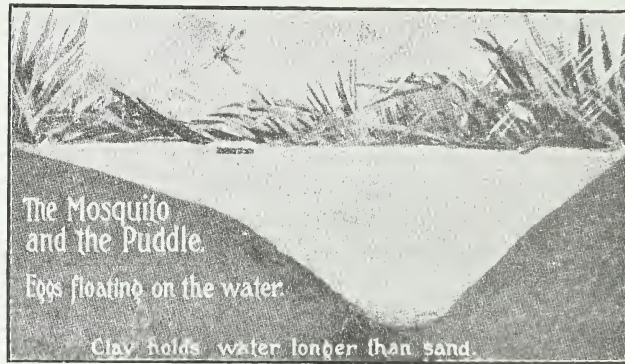


The Pupæ.

carefully works itself out and cautiously balances itself on the cast skin, using it as a raft until the wings become hard enough to use in flying. Should the water upon which it is floating be roughened by wind or other force, so that a failure is made of the attempt to balance itself, preparatory to making his

flight for life, and any water gets upon his wings, it perishes; but apparently they are a fortunate family, and though they may die, many times their number live.

Having observed that the wrigglers come to the surface to get air, I was led to try the effect of pouring a little coal oil on the surface of the water. In a little while all the wrigglers were



dead. They had found it impossible to get their breathing-tubes through the surface film of oil and obtain a supply of air.

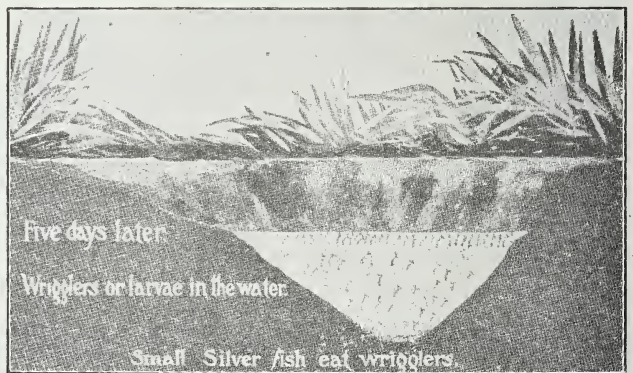
A stagnant pond, covered with duck-weed, was visited to ascertain the effect of such a thick covering on mosquito life. There were but few wrigglers, and I concluded that in this case, too, they could not get to the surface. Further observation proved that open water is essential to mosquito life, and that water containing a few minnows will be tolerably free from mosquitoes.

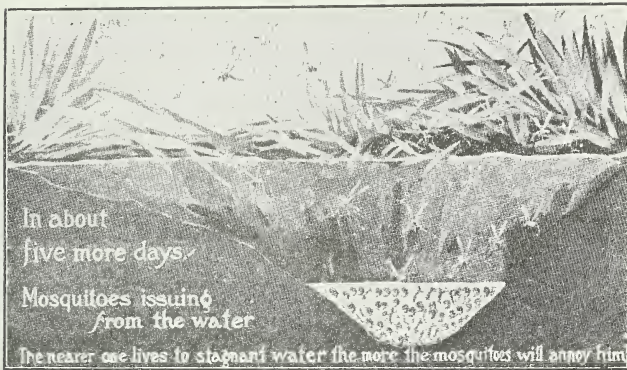
Of the thirty or more species of mosquitoes, two are quite common—the *house* or *rain-barrel* mosquito, (*Culex pipiens*), and the *Woodland* mosquito, (*Culex Canadensis*). The former is well known; its body is dark brown, but its legs are not banded with white, as in the latter. The latter is seldom found away from the woods, and is, perhaps, the earliest to greet us in the spring.

Another mosquito was also found, the malarial mosquito, (*Anopheles*). It is most readily recognized by its spotted wings. Its feelers are as long as its body, and its legs are longer than those of *Culex*. The eggs are seldom found in masses, and do not float on end, like those of *Culex*, but lengthwise.

The wrigglers have also a different habit in the water as they lie flat at the surface.

This mosquito is interesting, as it has been shown that malaria is due to its





bite. It, first of all, becomes infected by sucking from a human body blood containing malarial organisms. Changes occur in the body of the mosquito, and in about eight days the organisms reach the poison gland. After this time, if it bites a human being, the malarial germ is introduced into the circulation, and malarial fever follows.

The malarial mosquito may breed in any sort of receptacle or puddle holding water, but the most prolific breeding places are open swamps and ponds nearly choked with vegetation, especially where the margins are shallow and over-grown with grasses. *Anopheles* can breed where *Culex* cannot, on account of its habit of lying flat at the surface, where but a thin film of water is necessary.

The abundance of the malarial mosquito in Ontario is attested by the numerous cases of malaria, while that of the common and the woodland mosquitoes is proved conclusively by the many tortures that are inflicted on poor suffering humanity. That the malaria and the tortures can be done away with is now certain, and the public should be told the good news. Drainage of the swamps and ponds, the introduction of fish into water areas that cannot be drained, the deepening of ponds to lessen the marshy areas about the margins, the oiling of small stagnant pools, and the screening of water barrels, cess-pools, etc., will practically remove mosquitoes from the district.

R. E. MORTIMER, '05.



CANADIAN LITERATURE.

J. B. REYNOLDS, B.A.



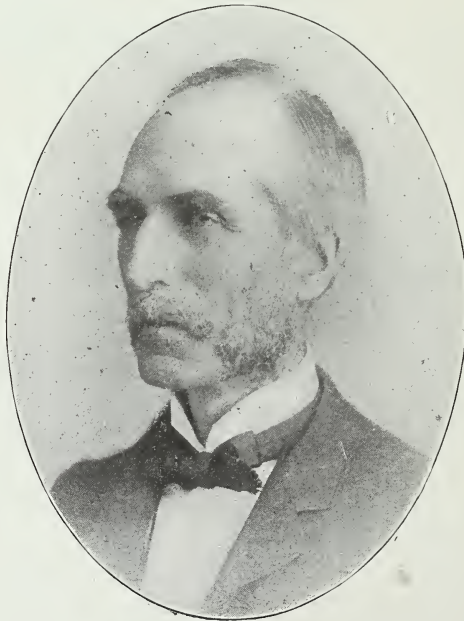
THE question may properly be raised, whether or not there is such a thing as a Canadian Literature. Such a literature, if it exists, should body forth a Canadian national spirit; if history, it should deal with the social and political development of Canada; if fiction, it should represent, in dramatic and epic form, the life of the Canadian people; if poetry, it should express their noble aims and aspirations; and all should be infused with local coloring of Canadian climate, scenery, and natural phenomena. Are all these materials at hand, and if so, have there arisen men and women of sufficient culture and perception to embody these materials in true literary form?

Until recently, it might fairly have been doubted that there existed a distinct and unified Canadian national spirit. The newness of our institutions, our heterogeneous population, the vast extent of our territory, the great geographical barriers that separate the provinces, all have tended to develop a group of colonies with distinct aims, rather than a single nation with a single ideal. Even now, it is only on the broadest and most general grounds that we can lay claim to unity of purpose. Whatever unity we have consists in these particulars: a pride in, and a determina-

tion to develop, as best we can, our vast national resources; which consideration is material and commercial, rather than sentimental; and a strong filial adhesion to Imperial connection.

Our history, political and social, has been not inglorious, and has advanced steadily, and on the whole sanely, from the most primitive elements, through well-ordered stages, to a sound and wholesome social organization, and to a political union among the members that is practicable, and virtually independent.

In the life of the people, abundant materials have existed, and do exist, for story and song. It has been characterized by infinite variety, from the vegetative quietness and picturesque beauty of the eastern provinces to the hurry and rush and turmoil



Professor Goldwin Smith.

of the new lands to the west. And surrounding it all there is a strenuous climate and a ruggedness, a sublimity, and a beauty of nature nowhere surpassed. Unquestionably there is material in abundance for a Canadian literature.

Turning now from a consideration of the materials themselves to the use that has been made of them, we find that the opportunities have not been neglected. True, though there have arisen in our midst many men and women with culture and consecration, yet few of them have

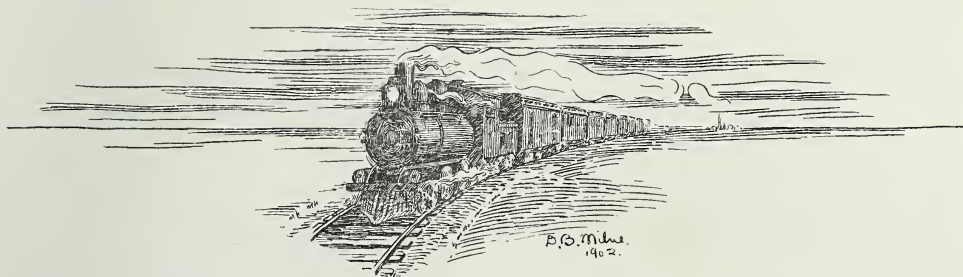
found sufficient leisure to devote their lives to literature. This want of leisure, while it has made what literature we have more spontaneous, has limited its volume, within



Sir Gilbert Parker.

which, however, our literature exhibits a great variety and considerable originality in subject and method. Parkman's histories are classic, and Gilbert Parker has written novels that are distinctly Canadian, though now he has transferred his habitat to the mother-land. Professor Goldwin Smith, a Canadian, not by birth but by choice, has brought to the consideration of our political and social questions a wide and profound learning, an independent spirit, and a literary grace and charm that place him in the front rank of modern writers. In the region of poetry, many names might be mentioned, but it does not come within

the scope of this article to compose a list. The Victoria University Library has published (1899) a Bibliography of Canadian Poetry edited by Professor C. C. James. The best-known names mentioned in this publication are those of Jean Blewett, William Wilfred Campbell, Bliss Carman, William Henry Drummond, Pauline Johnson, Archibald Lampman, Theodore Harding Rand, and Charles G. D. Roberts. These all, except Mr. Drummond, are Canadian-born. A study of the work done by each of these writers reveals the facts that by far the greater part is in lyric form; that there is about it all a melody and a sweetness, and withal a wide variety of verse-forms, which go to show that these writers have acquired a creditable mastery of what Wordsworth termed "the mechanical accomplishments of verse"; and, finally, that no great creative work has been accomplished. All these conditions are in the line of natural literary development; and the conclusion of the whole matter is, that we have every reason to feel gratified at what our writers have done, and to be full of hope respecting the future of Canadian Literature.



SOME MORE PORTRAITS.



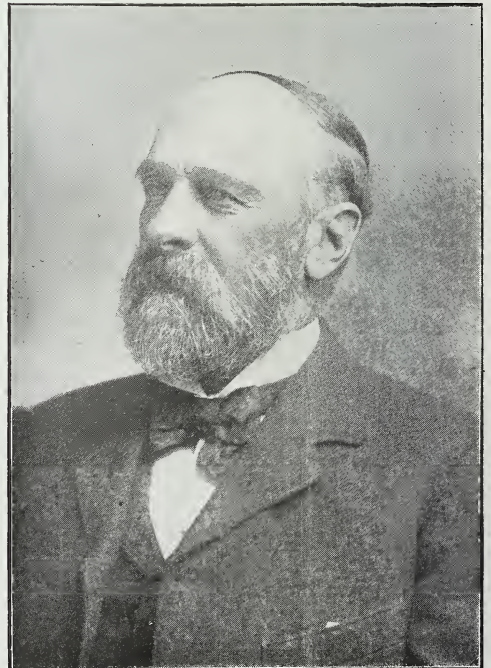
H. B. COWAN.

Though a resident of Howick, Quebec, Mr. Robt. Ness is well known in live stock circles throughout Canada and the United States. He has made a specialty of breeding and importing Clydesdale horses, and is such a well-known authority on this breed that his services as judge at leading fairs are much sought after. He has also attained prominence as a breeder of Ayrshire cattle.

Mr. Ness is another of those Canadians whose work is bringing honor to his country.

Too much cannot be said of Mr. H. B. Cowan and his great work in the interests of general agriculture in Ontario. He first sprang into prominence while on the staff of the Ottawa Valley Journal. Then he took an active part in Agricultural Journalism across the line. When Mr. Creelman was appointed President of the O.A.C. Mr. Cowan was selected as Superintendent of Fairs and Exhibitions.

That the appointment was warranted is best shown by the changes already made or proposed of direct benefit to the farmers. He is also Managing Editor of the Canadian Horticulturist, and has much improved that magazine in every department during the last few months.



ROBERT NESS.

Agriculture.

AUTUMN ON THE FARM.

TO anyone who has lived in the country and watched the seasons come and go amid the everchanging scenes of the flying year, autumn possesses not the least attraction of all. Winter has its charm of brightness and exhilaration. It has also its cold and its gloom. Spring has its singing birds, springing grass, and bursting flowers, and it has also its strenuous, intense, and exacting labor, for its work must be done in contract time to secure profitable crops. Summer has its golden harvest, and it has also its broiling heat. Autumn has its days of gloom and its exacting need of labor; but it has, too, its landscape of green and gold, its invigorating air, and the fulfillment of the promise of spring and summer. Among the seasons, therefore, we are disposed to give autumn a high place.

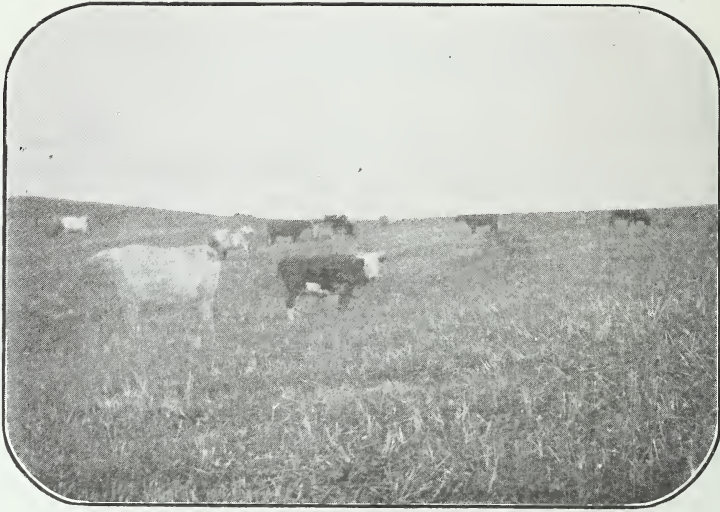
One has only to mention it to recall the variegated forests; corn-fields, with their tent-like "stooks" giving way in these later days to dark areas, bare from filling silos; rank, green root-fields, and black plow land. It recalls vividly the crisp, frosty mornings when, hastening to the fields before sunrise, one breathed the invigorating ozone and felt it good to be alive. The blood coursed more swiftly in the veins, hopes and ambitions were higher, and deeper, wiser plans were made for next year. At night, reviewing the darkened area of the day's work, the plowman takes his weary team to the stables, where hay and oats in abundance await the voracious appetites of

the faithful animals. The comfort of his horses assured, he goes to his own evening meal in the genial family circle, with its bright light and blazing fire. And thus the happy season of ingathering and preparation passes all too swiftly.

Not alone do we recall the pleasant labor and domestic happiness, but we also remember the final garnering of the year's fruits. The feeling of wealth and resource which it brings, fills out and perfects the joy of harvest. As the corn fills the barn or silo; and the roots, potatoes and apples the cellars, there is a feeling of confidence in our ability to withstand the siege of old Winter's gaunt forces. It is the culmination of a year's efforts, the final reward of a spring and summer's labor.

With the sentiment surrounding this enchanted season, which is endeared to us by association, there is, too, the all-important practical, which we shall consider more fully. Without it there could be no sentiment and little rural beauty, and the glory of the farm would be departed. Let us, therefore, look back some distance to the earlier part of the year, and observe the preparation for a profitable autumn, and a pleasant one because profitable.

It would be superfluous to emphasize the thorough cultivation and careful attention of all fall-harvested crops. It may not be out of place, however, to discuss briefly the extent of this class of crops. The value of corn and roots is discussed and emphasized by farm jour-



The Autumn Twilight.

nals and farmers' institutes until it seems that every farmer should be thoroughly alive to their importance, especially in a stock-raising province like Ontario. In practice, very many farmers fail to recognize it, so the repetition of a well known truth will not be misplaced. In short, both of these crops, neither of which can replace the other, provide the bulky, succulent portion of a good live stock ration, and are unrivalled in cheapness. In addition, the method of cultivation used to grow them successfully is most beneficial to the soil, improving its physical texture and preparing it for a catch of the invaluable clover. Their importance can hardly be proclaimed too long or too often, but we shall forego an extended discussion, considering it enough to have mentioned these familiar facts.

Considering, as we must, these fall crops from a stock-farmer's stand-point, there is another which promises well—rape, a fall pasture plant. This crop, valuable for all classes of live stock except horses and milking cows, is familiar in name but not familiar enough in prac-

tice. It is known to produce a large amount of succulent food at a time when all other forage is scarce, and, while it is justly claimed to be more valuable to the beef-cattle than to the dairy farmer, it has an undoubted value to the latter as a pasture-crop for young stock, hogs, and sheep. It has, of course, wider usefulness for the beef cattle farmer, being especially valuable for steers, as it produces rapid growth, and a sappy condition which responds well to stall-feeding. There is no doubt that rape should have a place on every farm where cattle, sheep, or hogs are kept, and that the sowing of a rape plot in July or August is a wise preparation for autumn.

Another fall pasture crop should here be mentioned. The indispensable clover is almost essential to profitable and successful fall dairy business, and is, of course, invaluable on any farm at any time. Carefully managed clover meadows provide good pasture later in the fall than any other similar forage crop, and rank, vigorous new seeding provides excellent pasture which can be handled to the advantage, both of the stock and

of the clover plants. Grazing a poor stand of seeding would, of course, be a bad policy, and even with a good stand, care must be taken not to pasture too heavily or tramp when wet.

After considering fall pastures, the fall management of stock claims attention. With a good, well-housed crop and plenty of fall-pasture, intelligent, common-sense executive assures success. Cattle, sheep, and hogs may be placed on rape, the first two classes with full stomachs so that they will not gorge themselves to a harmful extent. With the rape, the sheep and steers only require access to some grass to keep in thrifty, growing condition. For the hogs, the rape is merely a supplement to the regular food, though one which often turns loss into profit, and makes small gains larger. It is also very valuable for the breeding stock. The disagreeable flavor which it gives to milk, makes it valueless for the dairy herd. For the milking cows, clover or some late grass is essential as forage, to be supplemented with silage, roots and grain.

Not only must the ration be well-balanced and generous, but the cattle themselves must also have particular care and attention at this time. Exposure to a cold rain, or to a frosty night is sure to result disastrously, not only to the present but also to the future milk production of the herd. Regarding this, Mr. Gurler, a noted Illinois dairyman recently published a striking experience. He found that, owing to the exposure of his cows for a few cold nights in autumn while his stables were under repair, the herd decreased its production fifty per cent. for the remainder of the milking period, as compared with the succeeding year under the same conditions except for the exposure. This experience may

appear slightly extreme, but it serves to illustrate the importance of looking well to the comfort of the dairy herd in autumn. Good care and generous feeding of all classes of stock at this time are the best preparation for successful wintering.

But autumn is not merely a season of harvesting and of preparation for winter. It is also a period of preparation for another year, a strategic point in the time at the farmer's disposal. If he makes full use of his opportunity, he prepares the soil for next year's crop and saves his time in the busy spring. What is still more important, he enlists the winter's frost to aid him in improving the tilth, and in setting free plant food for the following crop. Besides improving soil texture, early fall cultivation aids materially in destroying weeds and weed seeds; in getting the farm clean and in keeping it so. From the time the crops are harvested until the ground freezes, an adequate force should be employed in plowing, harrowing, cultivating and ridging up. There is pleasure in turning and stirring the soil, and there is also profit.

Autumn is essentially a time for doing the odds and ends of work. Beside that which must be done, there are always minor duties, such as removing useless fences and improving necessary ones, removing stones and stone-piles, and clearing broken land, which, if performed, add greatly to convenience and profit. The last and greatest of these is drain-digging. This must necessarily be classed as after-harvest work, which may, under favorable conditions, extend far into the fall. It is unnecessary to dilate upon the importance and value of drainage, merely noting as we pass, the time for doing it. The land being bare

of crops and the soil not too wet, the year's plan should assure the performance of this work where it is necessary, and would be profitable.

But in reviewing the thousand duties which autumn brings, there is not one entirely disagreeable. The feeling of wealth and resource compensates for any unpleasantness of ingathering. The steady work in the fresh, bracing air with the smell of the soil in our nostrils,

is excelled by no other work under the sun. Taken as the type of farm life and work, we point proudly to it as the backbone of trade, and the mainstay of commerce; the training school of great men, and the strength of the nation. And, if we can do no more than to instil into men a deep love for Mother Earth and a desire to get back to the soil, we shall consider that a worthy object has been attained.



Experimental.

NOTES FROM THE EXPERIMENTAL FEEDING DEPARTMENT.

THE work at present being carried on in this department is confined to pigs. However, a bunch of steers, running on rape and grass, will soon be housed to become subjects of experiment. In the meanwhile, a visit to the piggery is well worth one's time, for the hogs that have been fed during the summer are nearing market condition, and one can see for himself the effect of the various kinds of feeding.

Those who followed the notes from this department last year will remember that an experiment was reported giving the results of feeding tankage and blood meal, compared with skim milk, as supplements to an ordinary grain ration, for fattening bacon hogs. In accordance with the policy of the department, this work is being repeated this year, and, although it is not completed, we think we can forecast a little from the appearance of the various groups of hogs. Last year the results indicated that blood meal and tankage were even superior to skim milk as supplementary foods. This year all the groups look very thrifty, but those getting the skim milk ration appear to be somewhat better than those receiving the bye products. The best groups of all, however, would seem to be those which have received a small amount of skim milk, and in addition, a small amount of tankage or blood meal, indicating the value of these bye

products under those conditions in which the feeder has some skim milk but not sufficient for all his hogs.

In all, there are ten groups of hogs in this experiment, all of which are getting the same general meal ration of ground barley, oats, and middlings. In addition to this, two groups are getting blood meal, two groups tankage, two groups skim milk, one group skim milk and blood meal, one group skim milk and tankage, and two groups the meal ration alone. These latter groups are evidently not as thrifty as their more fortunate neighbors, but still they have done fairly well, and it will be interesting to see how near they will come to the others in economy of gains. We will look for a full report of this at the time of the Experimental Union and Winter Fair.

There are two other lots of hogs, consisting of twelve each, which have been on pasture during the summer months, but which are now housed and are being pushed rapidly forward towards market condition. In the early part of the year they were pastured on clover and later on rape. One lot was fed all the meal they would consume. The other lot received two-thirds as much meal as these, and, hence, had to depend more on the pasture for their livelihood. At present both lots during the finishing stage are getting all the meal they

will eat. The experiment was planned to demonstrate the relative value of light vs. heavy feeding under these conditions. Up to the time of their going inside, the heavy feed group required 421 pounds of mixed grains for 100 pounds gain. In comparison, the light feed group required but 353 pounds for the same gain. Whether this same difference, in favor of the light feed group, will continue to the end is a matter which will be ascertained and reported when the hogs are finished in the early part of December.

From the very first, all the hogs that were fed inside, have been given some green feed daily, for all the experiments that have been conducted in reference to the production of firm bacon have shown the beneficial effect of even a very little succulent food. First clover, then green oats, rape, soy beans, ensilage corn, and, at present, sugar beets, have been the ones used. This was the first year that soy beans were used for this purpose, and they proved themselves a very good addition to the ordinary crops. To ascertain their value, a short experiment was planned which was carried on during the six weeks from Aug. 18th to the end

of September, when the beans were in good succulent condition for feeding.

Two groups of hogs, consisting of six each, were fed the same amount of meal and skim milk. In addition one group received all the rape they would eat and the others a corresponding amount of soy beans. Under this system the hogs, which at the beginning of the experiment weighed about 70 pounds each, ate from 4 to 5 pounds of rape and from 3 to 4 pounds of soy beans each, daily. However, the lesser amount of soy beans produced slightly better gains than the larger amount of rape. On the other hand, the rape was a heavier yielder, producing on the plot used for this experiment about 22 tons of green fodder as compared with 15 tons of soy beans. According to this single experiment, it would appear that, all things considered, the crops are about equally valuable for this purpose.

In one of our later numbers we will give the results of all these experiments. These notes, however, indicate the good work that is being done in the altogether too limited space allowed for the Experimental Feeding Department.

Experimental Poultry Houses.

Various styles of Poultry Houses have been discussed at length in the poultry press during the past two or three years.

In years gone by, it was considered absolutely necessary to have a warm house in order to get eggs in winter. After many years of experience with this kind of house, poultrymen have found that they were not all that could be desired. There was a tendency for the air in the house to become foul, or

what is known by some as "stuffy". The walls in many cases were damp, due to the moisture condensing. Some poultrymen have been of the opinion that these houses lessen the general vitality of fowls, and are in a measure the cause of many poor hatches.

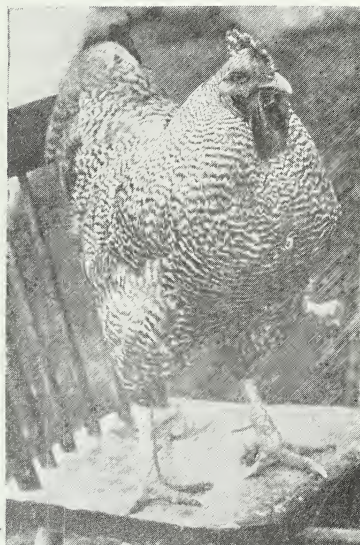
In the past three or four years, the fresh-air houses have been strongly advocated. Some writers have gone so far as to say that all a fowl needs is protec-

tion from the wind, and to be kept out of direct draughts, and that the temperature has no influence at all upon egg production. There are also a few who claim that fowls eat no more in a cold house than they do in a warm one. This, of course, appears to be absurd. It is claimed by the advocates of the fresh-air houses that the fowls are healthier, more eggs are laid during the winter, and better hatches of stronger chicks are secured during the spring.

With the object of solving some of these problems, there have been constructed at this Department four poultry houses. One of these is what might be termed the "warm house", and is built of matched lumber, lined with paper. There is a dead air space between the inside wall and the outside wall. The building is made tight. The plan adopted to do away with the moisture in the inside of the building is the use of straw as a ceiling. This straw is, of course, placed on boards, which are some six inches apart. It is expected that the straw will absorb the moisture and keep the house dry.

Another house is what is known as the "Maine State" house. This house is practically open to the weather on the front or south side. There are canvas curtains which can be dropped as a protection against wind and snow on stormy days. On other days these canvas curtains are to be kept rolled up, and the fowls allowed to exercise in the fresh air. The ends of the house are single ply matched lumber; the back wall of the house is matched lumber lined with paper and is sealed again on the inside. This is done in order to make a warm roosting coop, which is protected at night in front by canvas curtains.

The third house is known as the



A Good Type.

"Closed Pen" style. This house is built much the same as the second house mentioned, but in place of the front side being entirely open to the weather, it has adjustable windows; these windows can be opened or closed according to the weather conditions. This house is considered by many poultrymen to be one of the best styles that has been introduced.

The fourth house is one of the extremely airy ones, being made of boards that are dressed on one side and the cracks battened; about half of the front is open to the weather but may be closed in on stormy days by large doors. There is no special protection in the roost; the chickens roosting in this house at exactly the same temperature as they worked during the day. This house, of course, is much cheaper than the other styles.

We hope to experiment with these houses long enough to be able to give definite information as to which is the most favorable for the production of eggs in winter, also in which house the fowls

consume the least feed. We hope also to have sufficient data to state whether the fresh-air houses are more conducive to good health and the production of eggs

which hatch large numbers of strong chickens, or whether the warm house is equally as good.

W. R. GRAHAM, B. S. A.



Experimental Union Meeting.

Arrangements are almost completed for the annual meeting of the Experimental Union to be held at the College on the fifth and sixth of December.

It is expected that, for information along important lines of improved methods of agriculture and home economics, the coming meeting will be equal or possibly superior to those of former years. A large number of short pointed talks are to be given by ex-students and other leading agriculturists throughout the province, on the subject of "How to Farm with as Little Help as Possible." Owing to the great scarcity of help throughout Ontario during recent years, farmers have been studying new methods and devices by which horse power, wind power, etc., could be utilized on the farm to the greatest advantage possible. A comparison of views on this subject should be very interesting and profitable to those engaged in farming in Ontario at the present time.

The forestry question is to be taken up by Dr. J. F. Clarke, who until recently, has been connected with the bureau of forestry of the United States Government, but who is now employed as Forester for Ontario. The subject of seed corn selection will be treated by Mr. Joseph E. Wing of Ohio, and discussed by corn growers present at the meeting.

The co-operative work in field agriculture and small fruit growing has been very extensive during the past year, and a large number of valuable reports are now being received. As upwards of four

thousand farmers have been actively engaged in this work in 1904, the results should prove of great educational value.

The public meeting to be held in the Convocational Hall, at the College, on Monday evening, December fifth, should be of special interest to both Ladies and Gentlemen, from the country and from the city. Mrs. Bertha D. Laws, from Minnesota, is to be speak on "The Girl and the Home," and Mr. Joseph E. Wing of Ohio, on "Waggon Tracks in the Desert." President Creelman is to give an address and it is hoped that Dr. James Mills and Dr. J. W. Robertson will also be present and speak at the meeting.

There will be separate sessions for the Ladies on Monday afternoon, on Tuesday forenoon and afternoon and on Wednesday forenoon, at which Mrs. Laws and others will speak.

On Wednesday, December seventh, the formal openings of the Macdonald Institute and of the Consolidated Rural School, are to take place. The principal speakers are to be Sir William Macdonald of Montreal, and Drs. J. W. Robertson and James Mills of Ottawa.

Excursion rates covering the time of the Experimental Union Meeting and the Provincial Winter Show have been arranged, and are explained fully in the programme of union meeting, copies of which can be obtained from the secretary.

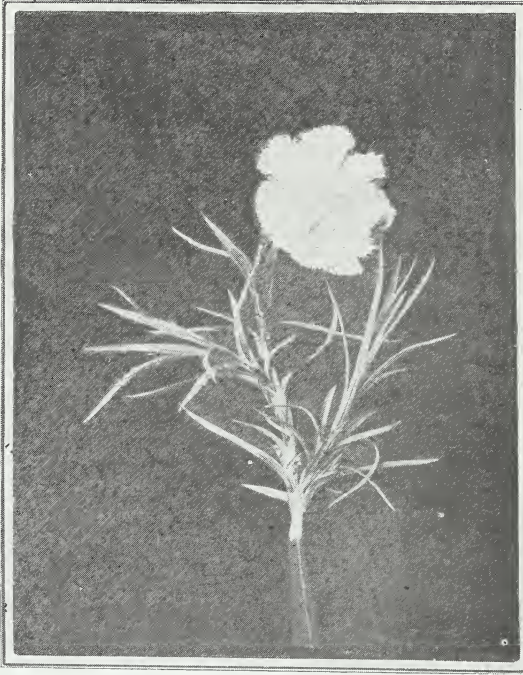
C. A. ZAVITZ,
Secretary.

Horticulture.

GREENHOUSE CARNATIONS.

THE Carnation, or *Dianthus Caryophyllus*—the latter being its botanical name—is undoubtedly one of the most popular flowers with the flower-loving public of the present day. Although it can justly claim to rank amongst the oldest of our garden flowers, such as Roses, Stocks and Iris, being mentioned in ancient horticultural records dating some years prior to the commencement of the Christian Era, it is only during the last half century that the Carnation has come into such prominence as a florists' flower. Prior to that time it was known almost altogether as a garden flower, and of a type that bloomed only in the summer season. The remontant or perpetual flowering type of Carnation now grown so successfully by our florists during the winter, and in fact nearly the whole year through, was not known to floriculturists until fifty or sixty years ago. In fact, it is only during the last twenty-five or thirty years that the Carnation has been grown extensively by winter forcing. During that period the improvement in the type, habit, as well as the method of culture of these sweet-scented favorites, has been most marked. As a natural sequence to these improvements the Carnation has come rapidly to the front, and to-day it equals in popularity the queenly rose or the deliciously perfumed violet. Thousands of dollars are invested at the present time in the production of Carnations in Canada and the United States, acres of glass being devoted exclusively to their culture. Mention might be made here of the Dale Estate Co., of Brampton, also J. Dunlop, of Toronto, as well as the newly established Georgetown Floral Company, all of whom go very extensively into Carnation growing, as well as local growers in different parts of Canada. It is seldom that there is a glut in the market of fine flowers, notwithstanding the immense quantities grown, a fact that goes to prove not only the popularity of the Carnation, but that our people are rapidly evincing a desire and love for the most beautiful and best to be found in the floral world,

Carnation growing, like rose and violet growing, has become a special feature of floriculture, as many florists not only have special growers of these flowers, but also have special growers of individual varieties. Indeed, in the culture of Roses as well as Carnations, there are many practical florists, who are very successful in growing one particular variety, and who at the same time have very indifferent success, or perhaps fail altogether with other varieties. Different local conditions such as the nature of different soils, temperature, etc., influence these matters very much, quite as much oftentimes as different methods of culture and care. The main principles necessary to ensure success in growing the many different varieties of florists' carnations are however very similar, varying only so as to suit the peculiar requirements of each variety.



No. 1. The Florist's Aim.

Propagating Carnations:

—Florists without exception propagate the Carnation from cuttings or pipings only, to supply cut flowers or plants. Raising Carnations from seed is only practised when new varieties are desired, or when growing plants of the Marguerite or summer-flowering Carnations that are used for planting out in the garden to flower during the summer.

The best time of year for taking Carnation cuttings is in January or February if good plants are wanted to bloom in summer or winter. The accompanying cut of a stem on which is a Carnation flower, will give a good idea as to the kind of growth from which to select cuttings or pipings for striking. The shoots showing at the sides and

near the base of the flower stem are the most desirable shoots for making cuttings.

Cut No. 2 shows an undeveloped shoot or growth that would eventually produce a flower. This kind of growth is not so desirable for propagating purposes as the side shoots that develop on the flowering stem later on as shown in Cut No. 1. These side shoots should not be cut off as when taking a fuchsia or geranium cutting, but should be carefully pulled or stripped off in a downward direction. By pulling off the shoot as described, the hard growth at the base of the cutting or piping is secured. A knife is only necessary in the operation to cut off the very small ends of fibre-like growth there may be at the base of the cutting, and to shorten the tips of the growth as shown in Cut No. 3. The cutting should be about four or five inches in length when prepared for striking. Good, sharp, fine sand is the best material in which to root carnation cuttings. About two inches of sand, whether it is placed on a greenhouse bench, or in a well drained shallow box or pot will be sufficient. Water the sand moderately before inserting the cuttings. Make a hole or draw a narrow trench sufficiently deep to insert the cuttings about an inch deep in the sand, so as not to damage the base of the cutting. Water the cuttings once when set in the sand, and withhold water until the sand shows signs of dryness, and water them only on fine sunny days if possible. A temperature of 50 to 55 degrees Fahrenheit suits carnation cuttings very well; a greater heat than this produces rot. Keep the sand moist but not soddened with water. In five or six weeks the cuttings should be ready to pot off. Pot them into 2½ inch pots in a compost of four parts of good, loamy potting soil mixed with one part of fine, sharp sand. The young plants should be placed in a sunny position near the



No. 2. A Good Cutting Whether planted on ordinary benches, or in solid, well drained beds in the greenhouse, a depth of six or eight inches of good, rich soil is necessary. Rotten sod and well rotted stable manure in the proportion of two-thirds of soil to one-third of manure, makes a good compost for carnations. Set the plants about ten or twelve inches apart on the bench or in the beds. Water the plants moderately well after planting. Withhold water from them after the first watering, until the soil appears to be getting dry. Water on fine, sunny days if possible. Good drainage at the roots, and intelligent, careful watering, are two of the essential points to success in carnation growing.



No. 3. A Poor Cutting

Disease and Insect Pests—Rust and stem rot are the worst diseases that attack Carnations. For Rust the ordinary Bordeaux mixture is a good preventative as well as cure. This can be applied best when the plants are out in the garden. Bad drainage, injudicious watering, and a too high or a widely variable temperature are the conditions that induce this disease in Carnations. Stem rot is caused usually by the same reasons, or by improperly prepared soil. Avoid the conditions mentioned as much as possible.

Prevention is far better than cure at all times in this respect in floriculture. Deep planting is often responsible for stem rot. Avoid burying the branching stems of the plants in soil at any period of their growth.

The insect most troublesome to the Carnation is the red spider or mite. Syringing the plants with cold water every day when the weather is bright, is the best

glass if possible. Young Carnation plants grown as described will usually stay in these small pots until they are planted out in the open ground early in May. Where large quantities of carnations are grown, the young plants are usually either planted out in soil on a bench, or put into well drained flats or shallow boxes. The plants can be set about three inches apart when grown in this way.

Planting Out—Early in May or as soon as the weather is at all favorable, the young plants should be put out in the open ground. A good, rich, well drained piece of loamy land suits Carnations. A low, wet piece of land where water stands in wet weather will not agree with them. Set the plants about fifteen inches apart in the rows, and allow two feet clear between the rows. If grown for fall and winter flowering all the flowering growth must be picked off before the buds form, until early in July. Cultivate often, and keep down the weeds among the plants.

About the end of August the plants can be lifted carefully, and potted, or planted on benches in the greenhouse.

preventative for red spider. The red aphid sometimes attacks Carnations. Fumigating with tobacco is the best remedy for this pest.

Temperature—A night temperature of 55 to 60 degrees Fahrenheit suits Carnations. About 70 to 75 degrees is a good temperature in the day time. Give the plants plenty of ventilation on fine, warm days, always avoiding as much as possible a close, humid, over-heated atmosphere. Improper drainage, over-watering at the roots, and an over-heated humid atmosphere are the greatest enemies to successful carnation growing.

A few of the most popular varieties of florists' Carnations will be found in the following list :

White—Queen Louise, Flora Hill.

Pink—Mrs. T. W. Lawson, Daybreak, Wm. Scott.

Scarlet—Adonis, G. H. Crane.

Dark Crimson—Governor Roosevelt.

White-shaded Pink—Prosperity.

Yellow—Golden Beauty.

Carnations do not make really good window plants, but young plants secured early in May and planted out in the garden in summer and treated as described, will make good plants by autumn, when they can be potted up for the window.

The red spider before mentioned is the greatest trouble to contend with in growing carnations in the window. Sprinkling the foliage nearly every day, or even dipping the foliage in a pail of water once or twice a week will prevent the appearance of red spider. A dry, arid atmosphere induces the attacks of these pests.

W. HUNT.



The O. A. C. Review

Editorial Staff.

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

Business Managers.

H. H. LEDREW, '05	J. B. FAIRBAIRN, '07
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Subscription Rates.

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Advertising Rates on application.

Editorial.

This subject has been introduced in Canada before, but has never been very seriously considered, possibly because as a class college journals are slow to accept an innovation. However, our Southern neighbors have entered the scheme with zest, and have even gone so far as to hold a convention of college editors at the St. Louis Fair. Here the subject was discussed in all its phases by the ablest men, and it was unanimously decided that such an association should be formed.

We have in Canada about twenty college papers, of a quality which is far above the average. It is safe to say that many of their editors and business managers will one day be the nucleus of Canadian journalism. The experience gained now will be useful to all in later years of business struggle; experience is merely the profitable accumulation of

ideas, and is less expensive when gained from others, especially when those others are engaged in the same vocation. If the ideas developed by one college paper are of any value, surely the best garnered from the fertile brains of the many will be infinitely more so. If our college magazines are of any service, and who would deny it, their sphere could not but be enlarged, and their influence strengthened by just such an infusion of new blood as would be gained at the annual meeting of the Canadian College Journalists' Association.

Canada is noted for her educational institutions; let her educational institutions be famed for their student publications, and the logical conclusion is that the Dominion will be known far and wide by the high standard of her journalists.

For these reasons should the jolly knights of the pen and the hustling kings of the coin assemble in solemn con-

clave once a year, and united take another step on the golden stairs of Canadian College Journalism.



A stranger reading of Canada in magazines and novels of foreign origin is invariably impressed with the idea that it has been little influenced by the hand of man. And is it a subject for wonder? When every article bearing on the nation or national life is replete with references to and eulogies on our unbroken forests, virgin prairie and rocky treasures? When an author looking about for a scene for a sensational novel transforms our peaceful farms into trackless wastes, our industrious and prosperous farmers into gnarled backwoodsmen, and adds insult to injury by introducing a superabundance of noble red men and carnivorous monsters, interspersed with quaint and courtly fragments of misplaced French seignories!

This is largely due to the false conception of Canada which usually exists in the minds of those authors who, having never visited the country, have gleaned their information from others equally misinformed. They regard it as one of the outlying districts of the world, whose sole redeeming feature is its abundance of local color.

We Canadians are to blame for this misunderstanding. Too often, anxious to enlarge upon our wonderful resources, we neglect our civic and rural life, and lay all stress upon the frontier type. This is advisable to a certain extent, in that it portrays our wealth of opportunity, and draws to our fertile basin the inhabitants of congested countries who see here an occasion for expansion; a class who are useful to us in primarily locating our treasures. But, it also deters the im-

migrants of a higher order, and if we are to hope to attract to our shores those who have already had experience as captains of industry we must so influence the nature of current literature as to show that we are far beyond the embryonic stage.



An exchange deplors that "owing to the prevalent but mistaken idea that a

A Few college journal cannot be
Reasons Why. issued at the beginning of the session, few appear until November." Are the unpaid editors and business managers of college journals supposed to accomplish in their leisure (?) hours what the numerous and well rewarded staff of a large monthly regard as impossible? Even if there was no break in the circuit, and it was not necessary to lose time picking up the old threads anew, it would be impossible to issue the paper the first week and still do justice to all concerned. A good magazine requires careful preparation and supervision, carefulness requires time, hence the "delay."

There are reasons known to the craft why the first issue should be good and above the standard in every particular, therefore it is well not to rush over it with the one idea of getting done first. This savors too much of the spirit which actuates the woman who gets her washing done at three o'clock in the morning, and too often the result is the same, retiring for the rest of the day.

Not until articles come ready illustrated and unsought, ads. are given away to advertise the business, and electrocuting is slow compared with printing, not until this millenium will the prevalence of this "idea" give way to its falsity.

Our Old Boys.



The Home of G. A. Brodie, B. S. A., 1890,
Bethesda, Ont.

In connection with the great Fair at St. Louis, there was held from Oct. 5th to 15th, a School of Breeding, Feeding, and Judging Live Stock, and Breeding Field Crops. As usual in such gatherings, graduates of the O. A. C. were recognized, and on this occasion took a prominent part. Among those on the program we might mention: J. J. Ferguson, Swift Packing Co., Chicago, Ill.; J. A. Craig, Director Agric. Experimental Station, Texas, U. S. A.; W. J. Rutherford, Assistant Professor, Animal Husbandry, Ames, Iowa; R. S. Shaw, Professor, Animal Husbandry, Lansing, Mich.

There was another organization which held sessions from Oct. 17th to 20th, known as the American Association of Farm Institute Workers. We notice on the program among those connected with the O. A. C.—President Creelman, Prof. C. C. James, Prof. C. A. Zavitz,

Mr. G. A. Putman and Miss Blanche Maddock.

Another of the O. A. C. boys who is making rapid progress is A. P. Ketchen, '03. On securing his degree he accepted the position of Assistant Live Stock Commissioner under F. W. Hodson, Ottawa. Since then he has received several tempting offers from South Africa, and other quarters, and has recently accepted the position of Editor of the "Nor'-West Farmer", Winnipeg, Man. We shall expect to see the "Farmer" take a leading position among the agricultural journals of Canada, and think we are quite safe in congratulating Mr. Ketchen in anticipation of what we know he will accomplish.

W. N. Hutt, '98, is also keeping pace with the times. After graduating, he worked for some time in Toronto as assistant to President Creelman in con-

nection with Farmer's Institutes. From Toronto he went to Utah as Professor of Horticulture, and has recently accepted a similar position at the Maryland Experimental Station. He is located only eight miles from Washington, so from an educational standpoint, is very favorably situated. Mr. Hutt is a brother of Professor Hutt of this College.



A recent valuable addition to the staff of the O. A. C. is Dr. Clark, who has given a series of interesting lectures on Forestry. Many of the recent graduates will remember Dr. Clark as the modest and popular Judson F. Clark of the class of '96, and as Resident Master for the two years following. In 1898 Mr. Clark went to Cornell University for further study, in '99 was appointed Assistant Botanist, and in 1900 was advanced to Fellow in Botany at that institution. Graduating in '01 with a Ph.D. from Cornell, he was offered the position of Prof. of Forestry by the N. Y. State College, with a leave of absence for one year to study in Europe. On his return in 1902 he assumed control of the Forestry Department at Ithaca, N. Y. and remained there until he was transferred to the staff of the Bureau of Forestry, Washington. A few months ago Dr. Clark was appointed Provincial Forester in connection with the Crown Lands Department, Toronto. We look upon Dr. Clark as one of the O. A. C.'s best graduates, and heartily welcome him back to Canada.



Professor Lochhead recently received a very interesting letter from W. R. Dewar of last year's graduating class. After securing his B. S. A. Mr. Dewar accepted the position of Entomologist with the Government of the Orange



Dr. JUDSON F. CLARK,
Provincial Forester for Ontario.

River Colony, South Africa, with headquarters at Bloemfontein. He reports that many farms have been ruined by the late war, and that agriculture in general is in the pioneer stage. He states that exertion of any kind is unpopular in South Africa, and if a man has any ambition when he arrives there, it soon evaporates. We judge from his letter that there is a vast amount of work to be done, and poor facilities for its accomplishment. "Billy" was a persistent worker while at college, so we have no fear but that we shall, from time to time, have good reports from his work in the "Foreign Field." Success to the ex-editor of the REVIEW.



The O. A. C. is certainly well represented on the staff of the Experimental Station at Bosamin, Montana. On the list is Alfred Atkinson '03, whom many will remember as "cheerful Alf."

Since leaving here he has done good work at Ames, Iowa, and is now Agronomist at above mentioned Station. Other O. A. C. men on their staff are F. B. Linfield, who is now Director of Agriculture, and Wm. J. Elliott '98, has charge of the Dairy Department at the same Station.

H. R. Ross, contrary to the advice of Horace Greely, went eastward, and the and the people of the East have no regrets that he did so. His first venture in that part of the world, was to accept the editorship of the "Maritime Farmer", Sussex, N. B., which position he held for several years. This paper under his guidance, made rapid advances, and every year increased the popularity of the Editor among the leading agriculturists of the Maritime Provinces, and it was with universal regret that they learned of his withdrawal from agricultural journalism. However, "Hank's" weakness for breakfast bacon, and his natural speculative tendencies induced him to accept the Presidency of a Pork Packing Company, located in Sussex, N. B. This Company has been in operation about two years and is meeting with marked success, and bids fair to be a large commendable enterprise. One of Ross' many excellent qualities is strikingly manifested by the fact that he has paid in advance, his subscription to the O. A. C. REVIEW.

Another one of the Boys who is making a name for himself in the East is W. D. Albright, of the class of '05. After completing the two year's course, he accepted a position on the farm of F. W. Hodson, Live Stock Commissioner,

Soon after however he was offered, and accepted the position vacated by Mr. Ross, as Editor of the "Maritime Farmer" Sussex, N. B. It required but a short time for Mr. Albright to get in touch with Eastern men, and Eastern methods, and he is now issuing, twice each month, a very practical and valuable journal, equal in many respects to the best agricultural papers in Canada. We wish him every success.

Among the most successful farmers of Ontario is G. A. Brodie of the class of 1890. He also made an enviable reputation as a student, winning the gold medal in '89, for general proficiency in the different branches of study. He is now living at Bethesda, Ontario, and we are pleased to present a photo of his home.

Douglas Weatherston '84 is now a large coffee and vanilla grower in Mizantler, Vera Cruz, Mexico. He comes North occasionally on business and is doing well. He still retains kindly recollections of the O. A. C. We regret to report that his brother Charles, who studied here at the same time, is now dead.

F. L. Fuller, who took the Dairy Course in '93, and who is now Supt. of the Government Experimental Farm at Truro, N. S., paid a visit to the College recently on his return from St. Louis. He was accompanied by Mrs. Fuller.

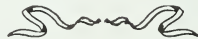
Ed. Ireland, who was one of the Dairy Students of Class '96, is now in Sydney, N. S. W. He is engaged in the Dairy Export business and is doing well,

F. W. Broderick, '03, has been added to the staff of the Govt. Seed Division at Ottawa. Mr. Broderick has been working in the Maritime Provinces for the past three months, endeavoring to create an interest among the farmers of that section, in the purity and quality of the seeds they are sowing on their farms. A much needed work,— success to your efforts “Brod,” and may the harvest be great.

After completing their two years' course, Ferguson and McIntyre of the class of '05, went West. In a letter, enclosing his subscription for the REVIEW, “Fergie” tells us that he is living near

Strassburg, Assa., and is getting along all right. He has over 100 acres ready for cropping next year, has a shack and stable erected, and all he needs now is some one to share his joys and profits. What a chance for some nice girl! “Mac” has taken up a homestead near, and is doing well, but seems lonely. We shall scan the marriage columns carefully in the future.

James Benning, '94, is now living at Williamstown, Ontario. He has one of the best herds of Ayrshire cattle in Eastern Ontario, and operates an up-to-date farm in every respect.



The Editors' Lament.

'Twas in a village church we met,
As she was then I see her yet;
Oh, how I longed to call her pet,
My sweet prairie flower.

'Twas only once we met and talked,
I longed to tell her, as we walked,
Of how I loved her, but I balked,
And so I lost my flower.

Again, I saw her in the choir,
My thoughts soared higher than the spire,
She filled my heart with quenchless fire,
My sweet prairie flower.

I hope she don't think I'm a sham,
I wish she knew me as I am;
I can't forget the wee red tam,
And my prairie flower.

Sometimes I feel an aching zest,
To pack my grip and go out west,
And do my best, my very best
To win my prairie flower.

I know I love her, love her well,
How much I love her I can't tell;
But I'd jump a five-barred gate and yell
If I could win my Lily.

—Kerry O'Byrne.

Book Reviews.

HOW many are there who can identify all the common trees and shrubs to which we owe the necessities of life and beauties of nature? Very few, and they are only those who have made a specialty of the study. Yet we should all have sufficient pride in our country to be on speaking terms with the other inhabitants. Although everyone has not time to observe the individual characteristics it is quite possible to benefit by the painstaking effort of others.

“The Trees and The Shrubs of North-Eastern America” is the name of a volume by Charles S. Newhall. Being a popular edition it is written in popular yet concise language, and unlike the majority of unscientific works, is scientifically correct.

The method of identification adopted is according to the leaves. The trees and the shrubs are dealt with separately, and for each is a separate key. The species are arranged according to genera and families, and the keys are exceedingly simple, requiring no knowledge of scientific terms. In addition, for each individual, there is a full page description of the complete plant, and each separate distinctive feature, accompanied by a life size and life like engraving of the leaf.

This is true both of the shrubs and trees, but the former also are identified by means of flower and fruit, three separate and distinct keys.

This book will appeal to all who are interested in out-door life. It is an admirable companion for a walk, a ready

reference for an office and indispensable in a library. To those who are busy, its best qualification is that the process of identification requires only a moment.

This volume may be obtained from G. P. Putnam's Sons, New York.



“Protection and Prices of The Farmers' Home Market” is a small collection of interesting articles on Canada's mercantile and trade development. Although written from a partisan point of view, the statistics contained are doubtless correct, and presented as they are they represent the views of a great many of our citizens. To these we recommend it as a verification of their ideas and to those of opposite convictions we endorse it that they may see both sides of the question. To students it is especially valuable; on account of the numerous “bones of contention” it covers it supplies subjects and interesting information for many debates. For copies, address the publishers of “Industrial Canada”, Toronto.



Interesting to everyone and doubly instructive, is “My Memory of Gladstone,” written by that eminent Canadian, Goldwin Smith. Characteristically prepared, it is the history of the last half century of political life in Great Britain, pleasantly woven with the biography of a great man. Free from wearying details it is an intimate pen portrait of Gladstone as his intimate friend saw him. This is a book to be read by every student of Eng-

land and its language. Wm. Tyrell, of Toronto, will forward it upon receipt of the price, seventy-five cents.



Carried away by the overwhelming importance of our Macdonald Girls the Butterick Publishing Company has sent us an advance copy of the December Delineator. Although we are not in a position to pass judgment on printed crepe olga, plaited bolero, nine-gored skirts or mist-gray eolienne, while vacant and in the abstract we are so egotistic as to rate ourselves as connoisseurs, when they are inhabited by their charming devotees. As well as being the moulder of fashion The Delineator is the moulder of home thought. The Christmas number is particularly rich in artistic features, the most noticeable being an eight-page exquisitely colored insert, illustrating love songs from the Wagner operas. After a careful perusal of this magazine no gentleman can be excused for not being able to discuss technicalities of dress with any lady.



Queen's Journal maintains its usual high standard in spite of the onslaught of time and constant changes of staff. It is always sober, thoughtful and dignified; never flies into hysterics, italics or a profusion of dashes, but permanent as the pyramids, sound as our Canadian currency it keeps the even tenor of its way. This year the town has failed to do it justice in the field where it particularly deserves support, namely, advertising, but "Queen's" is too strong a fighting force to be ignored from an advertising standpoint, and doubtless more generous assistance will be forthcoming.



The College Paper, The Rocky Mountain Collegian, and The Student's Herald

are three of our exchanges that have become cognizant of the existence of the growing time. They are pushing ahead and each in its own particular sphere, doing yeoman service for the cause of agricultural education.



Vox Wesleyana, the organ of Wesley College, Winnipeg, is blessed with an abundance of the western gospel of "hustle." This year's paper is a marked improvement over the past, and doubtless great things are in store for Wesley and "Vox". Did Wesley get a telephone? We hope we may be pardoned for this abrupt question, but really the fight for the phone, was a struggle worthy of comment, a battle that we hope turned fortune's feet the other way.



Our college reporter was new to the work and anxious to consult some authority on the subject, he referred to the local columns of some of our southern exchanges. The following gems of thought are the results of his perverted ideals:

It is half past eight.

Thanksgiving was last week.

John Teavens gathers the leaves off the reservoir every morning except Sunday.

Professor Harrison has recently been making some experiments with germs.

Allan Mulloy spent Tuesday in bed. He had a cold sore.

We are sometimes troubled with the lights going out during study hour. The engineer states that this is on account of a fuse burning out.

Prof. Dean reports that the brindle cow gave milk testing 4.8 for the week.

The Sophomores have surveyed the campus.

College Life.

Y. M. C. A.

OUR College possesses an excellent moral standing. In very few colleges will be found such a large percentage of men taking an active part in the Christian life of the College, men too who are prominent on the result lists, in the literary society and on the athletic field. This is due in a great measure, to the Y. M. C. A., affording as it does, opportunities for the development of a sound Christian character, opportunities that none of us can afford to miss.

The progress of the Y. M. C. A. has in the past been very gratifying and we have every expectation of doing better work in the future. The Sunday morning classes held on each flat for the purpose of Bible Study, are proving especially helpful.

The work taken up this year is somewhat different to that which we have followed in the past. Instead of the International Sunday School lessons, we are studying the life of St. Paul, many of the boys studying a portion of the text each day, thus being encouraged to a systematic study of the Bible. Do not refuse the invitation to these classes. Come and take part.

The missionary department has also instituted a change, which we believe is decidedly for the better. Once a month this department is taking charge of the Thursday evening class in Massey Hall, and is presenting to us the work in Japan in all its phases. At the first missionary meeting our fellow-student from Japan,

Mr. Nag-Tany, told us, in a very interesting manner something of the conditions in his own country. These talks will be followed by the study of a popular work on Japan, so that by the end of the term we hope to be thoroughly acquainted with this progressive little country.

Sunday afternoon is given up to chapel service. This service instituted by President Creelman, is held in Massey Convocation Hall and is attended by the staff and all the students of both the Macdonald Institute and the College. The meetings are addressed by outside speakers and ministers supplied by the Guelph Ministerial Association. The first speaker was Rev. Mr. Henry of Hamilton.

Special music by our own students and other local talent is adding greatly to the value of these meetings, which are purely undenominational, their object being to encourage the higher things of life, and to aid the students in the development of broad Christian characters. That these meetings are accomplishing something of their object there can be no doubt.



The Literary Society.

The Literary Society has been holding well attended meetings, and is proving its worth as one of the most important student organizations at the college.

There seems to be a more lively interest, especially in the Senior Societies. The men are realizing their need of practice in public speaking, and that success for all depends in a great measure

upon the co-operation and interest of each of the students. That the society has been handicapped in the past by lack of funds was recognized, and last term it was decided to raise the subscription fee to one dollar. This will allow of a much wider scope of usefulness on oratorical entertainment and prizes worthy of the speakers, and will allow the members and officers to work to the best advantage.

At the Union meetings held once a month, not only our sister societies of the Macdonald Institute, but any of our friends, who desire to attend, are cordially welcome.

The officers for the term are :

Union Society.

Honorary President—Prof. C. A. Zavitz.

President—W. J. Lennox.

Secretary—R. M. Winslow.

Treasurer—C. B. Twigg.

Alpha Society.

President—A. J. Hand.

Vice-President—J. R. Dickson.

Secretary—W. S. Jacobs.

Delpha Society.

President—E. D. Eddy.

Vice-President—J. F. Monroe.

Secretary—R. S. Hamer.

Maple Leaf Society.

President—G. M. Frier.

Vice-President—G. N. Davidson.

Secretary—F. C. Nunnick.

The first of these Union Literary meetings was held in Massey Hall on Oct. 15th. After the business the following program was rendered :

Address—Professor Cumming.

Solo—Miss J. Rowsome.

Debate—Resolved that the Railways of Canada be owned and operated by the Government. Affirmative—Messrs. Eddy

and Kennedy. Negative—Messrs. Wade and Esmond.

Violin Solo—Mr. D. Weir.

Quartette—Messrs. Bell, Munro, Mills and Cutting.

The debate was on a live topic and was treated in a lively manner. So much so that the judges had difficulty in giving a decision. Messrs. Eddy and Kennedy succeeded in sustaining their resolution. Professor Day acted as critic, and really criticized, as well as commended the speakers, a course which we wish all our critics would follow, if we are to improve by those opportunities.

The Second Union Meeting was held on Nov. 5th in the Gymnasium. The Literary Society of the Macdonald Institute had charge, and the affair proved a very enjoyable one. The chair was occupied by Miss Ferguson, who in a very able and happy manner introduced the program.

The Program.

Chorus—"Soft Winds Around Us."

Address—Ex-Students, Prof. Zavitz.

Paper—Mrs. Dunbrack.

Reading—Miss Petrie.

President Creelman was then called upon and announced the Scholarship Winners of last year, and presented Mr. J. Bracken with the Governor-General's silver medal for General Proficiency in first and second year work.

The rest of the evening was spent in a very sociable manner. Introductions and promenades were now in order. Conversation topic cards were distributed, and it was not long before the room presented a pleasant spectacle. Some, of course, discoursed on bashfulness, the value of chaperons, Hallow'een escapades, and the other subjects as suggested, but doubtless the ingenuity of many found other topics with which to fill the moments.

This is the first opportunity the Macdonald Institute and the College have had of coming together in this manner and we wish to congratulate the ladies upon the idea and its success. We look forward with interest to many such union meetings with our sister society.



"At Homes."

Arrangements had been made early in the term by the Professors' wives to give to the students of the College a reception in the Gymnasium. Circumstances interfered with the plan, and it was decided to entertain each year in turn at the home of one of the Professors. The First Year spent the evening of October 27th, with Mrs. Reynolds and Mrs. Hutt, and Mrs. Day entertained the Second Year two weeks later. Of course the other ladies, with their "worsen" halves, were present. Games were indulged in, music enlivened the moments, and a very enjoyable time was spent. We certainly think this is a wise move on the part of the ladies, and one which we know is much appreciated by the boys.



Wet.

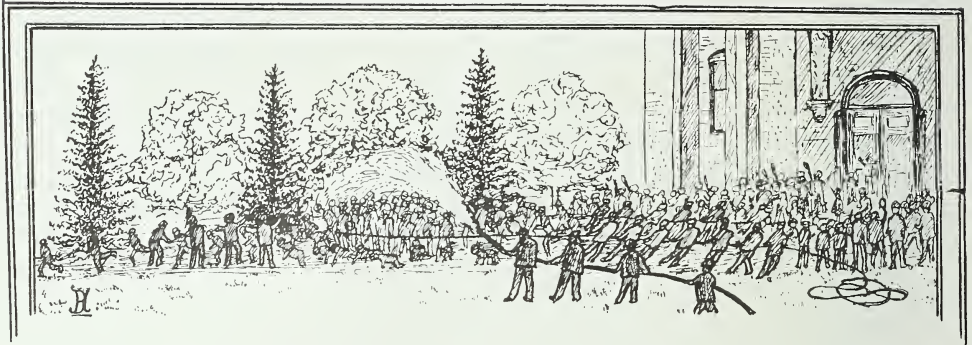
Of course the Freshmen *must* be initiated. Of course they must receive their baptism into the wiles of college life. Now, the Sophomores whose peculiar joy and privilege it is to administer this rite of baptism, believe in doing things on the the wholesale plan, and so, after due consideration and the expenditure of much thought on the part of their wise men, they carried out the following performances:

Three weeks after the opening of school, on the evening of Oct. 8th, the Freshmen were assembled in Massey Hall, deeply interested in things literary.

The Sophs., on the other hand, were busy with preparations for coming events. A rope was strung across the homeward path from a tree near the Hall door and so held that the bewildered Freshmen could be caught in a bunch; other ropes were stretched across the walks to retard the progress of those who had escaped the first barrier. In the meantime our doughty athletic secretary was marshaling his division along the fire hose, with two sturdy men at the nozzle, and all things were now ready. As our literary friends emerged from their meeting, the lights mysteriously disappeared, someone raised a cry, the water was turned on, and the fun began. For a while water, noise, heads, water, din, towels, arms, water, hats, legs, mud and water were one unintelligible conglomeration. Now it is a law in physics that water in the liquid form is wet, which fact the Sophs with the aid of 5000 gallons of this juicy liquid coming from a tower 80 feet high through a four inch hose, endeavored to impress upon the consciousness of the Freshmen. The endeavour was but *coldly* received. After the first few moments of bewilderment, the new men raised their own war cry and started in to teach their tormentors a little of the same lesson and indeed it was hard to tell which were the wetter. But their



numbers being depleted by the absence of those who did not understand the situation, and of those whose ardor had perhaps been somewhat dampened, the Freshmen retired, only to return in reinforced numbers and in systematic order. Then began a hand to hand struggle, individual against individual, crowd against crowd, tussling,



struggling, wrestling, with the din of battle rising high, and sometimes the lonely call "Second Year" from some poor chap separated from his fellows. All was carried on however in the very best of spirits, (water), and without the slightest loss of temper on the part of any. Juniors and Seniors formed the audience, throwing what light they could on the scene and lending moral support, now to one side, now to the other. At last, neither side being completely victors and the hour of midnight approaching, a halt was called, what caps and coats could be found, were gathered and all retired, well pleased with the diversion.

But the end was not yet. Those of the first year, who had missed the experience, were not forgotten by their fellows, who evidently thought that all should share the acquired knowledge. But orders were issued by the powers that be that no more water was to be wasted. And so a notice was posted requesting all first night's absentees to present themselves in the Gymnasium for the second act. At the appointed hour, the Freshmen heroes of the fray, ranged themselves in order, each with a towel, shingle, lath or stave, and one by one the delinquents were

asked to crawl each on his hands and knees and take his little share. To see a man when about half way down the line, tire of the blows and sit down, and then suddenly not sit down, was fun enjoyed by all.



The Consolidated School.

Another institution has opened its doors on College Heights. On Monday, November 1st, the Consolidated School started classes with about 150 pupils in attendance. Children from a distance were brought in the six covered vans provided for the purpose, and on the second day the capacity of some of these vans was overtaxed. The school building has just been completed, and is modern and up-to-date in every way. Of course, the classes in domestic science and manual training are not in running order. But when the equipments are complete the Consolidated School will certainly not be an unimportant branch of the Educational institution we now have on College Heights. The official opening of the school will take place at the same time as that of the Macdonald Institute, on Dec. 7th.

Macdonald Institute.

Hallowe'en at Macdonald Hall.

THE Hallowe'en of 1904 will long be remembered by the students of Macdonald Hall. A grand fancy dress ball was on the tapis, and as every one knows, there can be no jollier way of celebrating this night of frolic.

Though, apparently, little effort had been made in preparation, many of the costumes were remarkably clever and original, while a number of them were wonderfully pretty.

Promptly at eight o'clock a gay procession of merry-makers filed into the gymnasium, where they were duly announced by a very imposing butler of southern complexion and stentorian voice.

Oh! for the pen of a Dickens that I might fitly describe each character which went to make up this truly brilliant, multi-coloured throng. Gay cavaliers there were, haughty dames, simpering school girls, stunning Highlanders, singularly precocious children, demure Japanese maidens, football heroes, policemen, gayly bedecked gypsies, Dutch gretchens, old ladies, well known nursery characters, the inimitable Gold Dust Twins, Turkish and Eastern Queens and the ever popular sailor and soldier lads, besieged as ever by a bevy of fair maids.

The First Lady of the Residence, in a smart black and white creation, hair poudre and a cocked chapeau, received each guest most graciously and immediately the fun began.

Many of the dear old-fashioned games were indulged in, and in twinkling, everyone became a child again. Musical chairs, pale faces, Snap Dragon, the Witch's Caldron, all delighted us in their turn. But each followed so quickly upon the other's heels that no one grew weary. The fun never waned! And 'twas only when, to our utter amazement and amusement several cockadoodledoes appeared on the scene that we realized how the hours had sped on their way like eagles and that dawn was not far distant.

So amid much merriment and laughter the good nights were said, but not before we had all joined hands and hearts in that grand homelike old song that is dear to each one of us—Auld Lang Syne.

Many expressions of gratitude were tendered our considerate Superintendent and it is but justice to say that the success of this exceedingly jolly evening was due to her untiring efforts in our behalf and her wonderful woman's tact and energy.

Apropos of the festivities at Macdonald Hall on Hallowe'en! Probably the warmest reception tendered anyone was that received by one of our friends from Over the Way. Little did the unthinking warrior realize what was in store for him, else surely he would never have faced the music alone and unprotected. Think of the bravery—the boundless courage required—to garb one's manly

form in ladylike attire and enter the sacred precincts of a Ladies' School in the face of all authority! We are lost in wonder, admiration and awe. But such heroism received its just reward and in the words of a well known ballad, "He'll never go there any more."



Our Fair Ex-Students.

Miss A. Enid Robertson, '04, who headed the Macdonald girls in the final examinations last June, holds the responsible position of Domestic Science teacher in this city. We hear the trustee board feel they have a treasure in Miss Robertson, and we heartily endorse the praise which she so justly deserves.



Hamilton has been fortunate in securing for one of its Domestic Science teachers, Miss Isabel Strong, whose presence graced Macdonald Institute last year. We unite in wishing Miss Strong every success.



Miss Margaret Black, who came all the way from N. B. to attend Macdonald Institute last year, has returned to her home. We regret to hear that Miss Black's father is in a very critical condition of health, and extend to her our sincerest sympathy.



Miss Ella F. Miles, one of our '04 graduates, is practising Domestic Science under the parental roof for the present. Doubtless Ella's unusual brilliancy will be properly appreciated, should she ever wish to enter the teaching profession.



The committee appointed for the purpose of organizing a Literary Society of the Manual Training and Nature Students, met on October 22nd, with Mr. Jarvis in the chair. The following officers were appointed: Prof. Lochhead, Hon. President; Mr. Evans, Hon. Vice-President; Mr. Blacklock, President; Mr. Ackland, Vice-President; Miss Morse, Secretary, and Miss Taylor, Treasurer. This society will be called the Muldrew Nature Study Club in memory of the late lamented Dr. Muldrew. This will be a permanent organization, thus perpetuating the work so dear to the beloved Dean. Meetings will be held weekly and the works of John Burroughs will be studied. A portrait of Dr. Muldrew will be placed in the class-room at an early date.



On Tuesday evening the Muldrew Literary Club held its first formal meeting. Short addresses were given by the President and Mr. Evans and a ten-minute talk on the Mythology of the Stars by Prof. Lochead. The musical part consisted of Choruses by the Glee Club, a quartette by Misses Workman and Doak, Messrs. Runions and McLean and an excellent violin solo by Miss Holland. Questions of both serious and comic natures were given promiscuously to the members, and the discussions which followed created no small amount of merriment.



Every mode of life has its compensations and even the Junior Normals in their struggles up the steep path which leads to perfection in Cookery have their moments of glad respite, when the pudding or stew or whatever they have made is done. Then with beaming faces

they receive their little shares, and, setting their clattering chairs back against the wall, sit down and partake contentedly of the prodigy of their hands, that is, provided it is eatable.



A vigorous campaign is being waged within the very precincts of the Macdonald Institute. The casual observer might be aware of no disturbance, but, should he spy a Junior Normal scurry-

week the following officers were elected :

Honorary President—Mrs. Fuller.

Honorary Vice-President — Miss Robarts.

President—Edna M. Ferguson.

1st Vice-President—Francis Prichard.

2nd Vice-President—Lorna Culham.

Recording Secretary—Lottie L. Ross.

Corresponding Secretary—Elizabeth MacVannel.

Committee—Helen Wanzer, Maud



In Nature's Garden.

ing through a corridor armed with broom and dust-pan, or with still more mysterious weapons in the form of strangely shaped brushes, he would know that the invader Dirt, who, by the way, seems to have secured a pretty strong footing, was being driven from the strongholds of Cleanliness, by the intrepid attacks of the Junior Normals.



Literary Society.

On Oct. 5th the students of Macdonald Institute met in the Assembly Hall to discuss the advisability of organizing a Literary Society. A unanimous vote decided the question and immediately steps were taken towards organization. Nominations were in order and the next

MacFarlane, Mabel Le Page, Kate Pattullo.

The Society, which has been named the Macdonald Literary Society, has enrolled ninety-five members, including five life members. An active interest is being taken as each girl realizes her responsibility as a foundation builder.

The meetings, which are held every alternate Tuesday are well attended, and the whole society is alive with the spirit of progress.

The members realize their opportunities and devote their time and ability conscientiously to their duty, as a result the evenings are whiled away pleasantly and profitably with discussions of and examples of music, literature and science.

If a suggestion may be offered by one

of the humble members of the society, would it not be as well to let the duties of critic rest with the person elected to that not too enviable position, and let what she sees fit to overlook—for probably the best of reasons—be overlooked by all?



The Gymnasium at Macdonald Hall was opened on Monday night and almost a hundred girls showed their joy at its completion by being present.

Captain Clarke was in charge and one could easily see that he is a soldier "born and bred." His gestures throughout were grace itself and his good humour was inspiring.

Many of the gymnastic exercises were new to a large number of the girls, but their eagerness to obey promptly and implicitly was always evident, in fact sometimes their zeal in this respect created much merriment.

A few, of course, succumbed to weariness and even two of the leaders fell by the wayside. But all the world could see they died bravely. The spirit was willing but the flesh was weak.

It is certain that the Gymnasium will prove of immense benefit to the health of the girls of Macdonald Hall, besides being to them a very great source of amusement and pleasure.



On Saturday, Oct. 22nd, Professor Harcourt, Miss Kennedy, and the girls of the Senior Chemistry Class visited Berlin.

They arrived about eleven o'clock and proceeded to the Shirt, Collar and Cuff factory, thence to enjoy the beauties of Berlin's famous Park. After dining at the Walper House, they visited The Merchant's Rubber Co. and the Beet Sugar Factory.

They were shown through the different factories by the obliging foremen, who clearly explained the various processes necessary to make the crude material into the finished product.

Upon arrival at Macdonald Hall, a warm supper awaited them. Three lusty cheers for Miss Kennedy and Prof. Harcourt proved a fit closing for a very profitable and enjoyable day.



"To him who, in the love of Nature,
holds
Communion with her visible forms, she
speaks

A various language; for his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty, and she glides
Into his darker musings with a mild
And healing sympathy, that steals away
Their sharpness, ere he is aware."

Bryant.

Death of Dr. Muldrew.



Falls a silence in the class-room, creeps a shadow through the halls,
Fades the lustre of the sunlight from Macdonald's stately walls ;
And we know that love is measured by the life a man has led,
When they tell us in the silence that Macdonald's Dean is dead.

Dead : his great work just beginning : was it yesterday he stood
In this lecture-room and taught us of the wisdom of the wood,
Of the star-flower and the daisy, of the wild ferns in the brake ?
Have the ferns not now a deathless interest to us for his sake ?

He had ever loved the woodlands, loved the open, and the sky,
Read the secrets of the sunset, seen the yellow avens die,
Guessed the mercy of the dying, loved the avens ere it died,
Groping out the laws eternal in a system endless wide.

Science deals in facts and figures, science loves an ordered mind,
Shall we quarrel then with science so it sees a God behind ?
But to him all earth was God-like, and he saw it, low and high,
Night and morning in the meadow, morn and evening in the sky.

Will the bluebird's dainty warble from the roadside grow and trill,
With the grey song-sparrow's answer from the thickets on the hill ;
Think you that the wild phlox blossom in the woods will lift its head,
To the sunlight of to-morrow, if it knows that he is dead ?

Think you that the river woodlands as of old will happy be,
That the lazy winds will wander careless o'er the meadow lea,
And through Nature's mighty music there will steal no muffled sound,
Like the breaking of a heart-sob, when they lay him in the ground ?

It were meeter that the raindrops blot the sunlight from the sky,
And the hushed winds grieve and whisper where the autumn blossoms lie ;
And we feel that dark and wonderous are the ways of God with men,
When we know that not forever will the master come again.

There are others, wife and children, who shall dare to read aright
Half the bitter, hidden anguish in that lonely home tonight ;
Silently we join their sorrow, guessing what their pain must mean,
Who have lost a husband, father, knowing not Macdonald's Dean.

D. J. DOYLE.

Macdonald Institute, Oct. 7, 1904.

Athletics.

PROBABLY the most interesting day of the college year to the average student is our Annual Field Day. This year Fortune seemed to be especially propitious in favoring us with beautiful weather ; despite several attempts of the O. A. C. A. A. to have our field sports earlier, circumstances over which they had no control intervened and delayed the great event until Nature had shed all her tears and put on her sunniest smile. The sun verily smiled on every event, and how could he help it, for were not the long rows of seats stretching from end to end of the campus filled with fair Macdonaldites, whose smiles could not fail to win a response from any son?

Tuesday, Oct. 18th, 1904, is a day that will be long remembered in the annals of college sport, as the day on which no less than three college records were broken. The record for the half-mile run was lowered to 2.14 by W. A. Kerr ; the record for kicking the football was raised to 182 feet by Jack Bracken ; and the record for the Hose Reel practice was lowered to 1 minute, 34 seconds, by a team from the senior year. The present athletic executive is to be congratulated on the fact that on their Field Day three new records were established for future athletes to strive against.

One of the most interesting events was the Hose Reel contest, in which a team from each year competed. The teams from the first and third years ran on Monday evening. The first year team made excellent time but owing to a little misunderstanding of the rules, were dis-

qualified. A team from the third year then ran and made the run in 1 minute, 43 seconds. This was a remarkable record considering that the record last year was 1 minute, 58 seconds. On Tuesday morning the second year team lowered the record to 1 minute, 40 seconds, and during the afternoon the fourth year team made the remarkable record of 1 minute, 34 seconds.

One of the most closely contested events of the day was the tug-of-war between the third and fourth years, they having won the preliminaries against the second and first years respectively. Each team went on the field determined to win, but the Third year team having the advantage in weight and superior training won two straight pulls.

The officials for the sports were as follows :

Judges—Prof. R. Harcourt, Prof. G. E. Day, Prof. W. P. Gamble, Prof. M. Cumming, ex-Professor M. W. Doherty, J. Buchanan, B. S. A., H. S. Peart, B. S. A. and Mr. W. Squirrel, jr.

Referee—Prof. F. C. Harrison.

Time-keepers—Prof. J. B. Reynolds, Mr. S. Springer, and Mr. F. H. Reed.

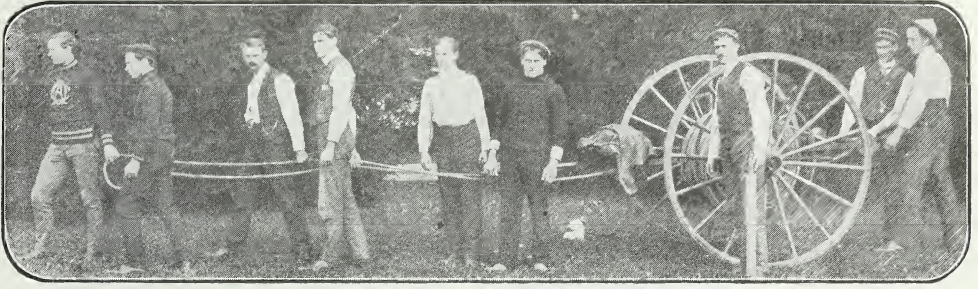
Starter—Dr. J. H. Reed.

Clerks—E. G. de Coriolis, B. S. A., and W. H. Day, B. A.

The list of events and the winners were as follows :

Standing broad jump, (college record, 9 feet, 7 inches)—Granel, 9 ft. 4 inches ; Broderick and Fairburn.

Half mile run, (record, 2 minutes, 14 ½ seconds)—Kerr, 2 minutes, 14 seconds ; Munro and Wood.



Fourth Year Hose Reel Team—Record, 1.34.

Pole vault, (record, 8 feet, 11 inches)
—Weaver, 8 feet, 1 in.; Kerr and
Bracken.

One mile walk, (record, 7 minutes, 49
seconds)—Hudson, 9 minutes, 56
seconds; Bracken and T. Wigg.

Putting 21-lb. shot, (record, 29 feet, 7
inches)—Granel, 27 feet, 8 inches;
Bracken and Broderick.

Running hop, step and jump, (record,
41 feet, 8½ inches)—Kerr, 38 feet, 5½
inches; Knight and Fairburn.

Kicking the football, (record, 166 feet)
Bracken, 182 feet, 6 inches; Mortimer
and McMillan.

Putting 16-lb. shot, (under 140 lbs.,
record, 31 feet, 4 inches)—Rudolf, 36
feet; Klinck and Duncan.

Running broad jump, (record, 19 feet,
4½ inches)—Fairburn, 17 feet, 7 inches;
Broderick and Kerr.

Running high jump, (record, 5 feet,
5½ inches)—Rudolf, 5 feet, 1 inch;
Kerr and Granel.

One hundred yard dash, (record, 10½
seconds)—Fairburn, 11 seconds; Bro-
derick; Wheeler and Baker, tie.

Three-legged race,—Duncan and
Thompson, Baker and Montgomery,
and Williams brothers.

Quarter mile run, (record, 59 seconds)
Munro, 59 seconds; Kerr and Lennox.

Jockey race—Knight and Ballantyne,

Thompson and Duncan, and Baker and
Montgomery.

Hurdle race, (150 yards, record, 18
seconds)—Rudolf, 20 seconds; Craig
and Kerr.

Sack race—Craig, Nag-Tany, and
Montgomery.

Two hundred and twenty yard dash,
(record, 24½ seconds)—Broderick, 25
seconds; Wheeler and Rudolf.

Obstacle race—Craig, Knight and
Klinck.

One mile run, (record, 4 minutes, 46
seconds)—Munro, 5 minutes, 22 seconds;
Kerr and Wood.

Putting 16-lb. shot, (record, 34 feet,
8 inches)—Granel, 34 feet; Bracken and
Panelo.

Team race—record 4.03, 3rd year team,
Munro, Duncan, Thompstone, Baker.

Throwing 16-lb. hammer—Granel,
49 feet, 4 inches; Panelo and Bracken.

Hose reel contest, (record, 1 minute,
48 seconds)—Fourth year, 1 minute, 34
seconds; second year, 1 minute, 40
seconds; third year, 1 minute, 43
seconds.

Tug-of-war—Won by third year.

At the conclusion of the sports, the
presentation of prizes took place in the
Gymnasium. President McKillican had
charge of the proceedings, Mrs. Day
awarded the badges, and Professor Har-

court and Secretary Miller assisted in the distribution of the prizes.

Mr. W. A. Kerr, of the First Year, certainly won the honors of the day. The college championship usually goes to a member of the senior year, but this year the freshman class had the honor of seeing one of their number win the coveted medal. Besides the championship medal, four other medals were given by the Athletic Association for the following groups of events:

Running broad jump, standing broad jump, hop-step and jump, pole vault—won by W. A. Kerr.

100 yds. dash, 220 yds. run, hurdle race—won by A. D. Broderick.

Quarter mile run, half mile run, one mile run—won by W. Munro.

Putting 20 lb. shot, putting 16 lb. shot throwing 16 lb. hammer—won by Granel.

In the evening the annual banquet was held, and over two hundred students sat down to the festive board. After ample justice had been done to the sumptuous spread, the following program was rendered, Mr. W. C. McKillican, president of the O.A.C.A.A., occupying the chair:



W. A. Kerr,
Champion, Outdoor Sports.
Winner Dryden—Doherty Cup.

Toast The King, W. C. McKillican
The O.A.C.A.A.

Prof. J. B. Reynolds, J. Bracken
Song—Mr. M. C. Cutting.

The Staff.

R. W. Wade, Prof. R. Harcourt
Violin solo—Mr. D. Weir.

The ex-Students.

H. A. Culham M. W. Doherty
Song—Mr. E. G. deCoriolis

The Ladies.

R. J. Deachman J. Smith
Song—Miss Springer.

The Press.

Prof. G. E. Day. H. K. Cockin
Mrs. Harrison, accompanist.

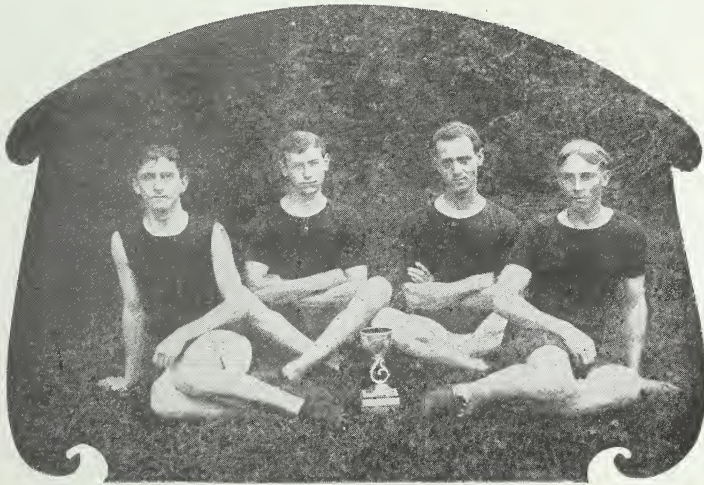
God Save the King.

Next to field day, the interest of the students centres around the series of inter year games of football and hockey. These games generally work up the enthusiasm of the students to the highest pitch, encouraging even the most backward students to participate in our college games. The first of this series was played on Oct. 4th between teams representing the second and fourth years. It cannot be said that the game was a splendid exhibition of scientific football as several of the players were on the field for the first time. However both teams worked hard and put up a good game.

The fourth year won the toss and played the first half with the wind, having this advantage they depended entirely on their long kicking and scored 20 points before the sophomores began to realize the fact that they had to do some work. By half time the wind had calmed down and the sophomores, though losing this advantage, went in to win.

Time after time they charged down the field against their heavier opponents, and played so effectively that despite their superior knowledge of the game, the seniors scored only 1 point, the score during the last half being 1-1. On the sophomore team, Montgomery especially distinguished himself, while Warner did the scoring for the seniors.

familiar with the game and hence were unable to contend with any degree of success against their more experienced opponents. Notwithstanding the fact that they felt themselves outclassed, they pluckily went into the game and played in a sportsmanlike manner, winning the applaudits of the spectators, not so much by the brilliance of their play



Third Year Track Team—Record, 4.03.

The teams were:—

Second Year.

- Harkness, *Back.*
- Broderick,
- Baker, *Halves.*
- Montgomery,
- Fairbairn, *Quarter.*
- Clark, *Snaps.*
- Ballantyne, *Guards.*
- McVicar,
- Culham, *Wings.*
- Miller,
- Jacobs,
- Kennedy.

Fourth Year.

- Williams,
- McKillican,
- McFayden,
- Mayberry,
- Hand,
- Esmond,
- Eddy,
- Mortimer,
- Wade,
- Whyte,
- Lennox,
- Warner.

as by their manly bearing and the sportsmanlike way in which they accepted defeat, so that with the consent of all concerned we will leave the result, 31-1, shrouded in the mists of a very charitable silence.

The third and fourth years having won in the football matches against the first and second years respectively, played off for the football championship on Tuesday, October 25th. The game was keenly contested and at times very exciting, and the result 13-6 in favor of the third year was a surprise to all. It was a case of vim, enthusiasm, and generalship against more experienced players. The fourth year team played a lax, half-hearted game, while their opponents by

On October 11th, a team representing the freshmen tried conclusions with a team from the third year. As is always the case the first year men were not

concentrating their men and calling every energy into play, succeeded in winning the coveted trophy

The players were :—

Third Year.		Fourth Year.
MacMillan,	<i>Back.</i>	Williams,
Bracken,	<i>Halves.</i>	Mayberry,
Scott,		McFayden,
Thompsonstone,		McKillican,
Duncan,	<i>Quarter.</i>	Hand,
Monroe.	<i>Centre.</i>	Mortimer,
McCredie,	<i>Guards.</i>	Stewart,
Smith,		Esmond,
McVannel,	<i>Wings.</i>	Warner,
Klinck,		Brereton,
Breckon,		Lennox,
Craig.		Whyte.

In the West Central section of the Junior O. R. F. U., the O. A. C., who had begun the season so promisingly by beating the Junior Tigers of Hamilton, lost to Dundas and Brantford, and also in the second game with the Tiger cubs of Hamilton. All the games except the one with Hamilton were very evenly contested ; and it seemed to be hard luck that prevented O. A. C. from winning. However the agriculturists retrieved their reputation by playing a tie game with Dundas, the champion of this section, at the O. A. C. on November 4th. This last game was probably the best game of the series. Both teams strained every nerve and muscle to win, and both put up a good, clean game of football.

On October 28th, an exhibition game

of football was played on the campus here between the bankers of Guelph and the second year. The teams were well matched, the college having a little the advantage in weight. The game was played in twenty minute halves and was one of the cleanest and prettiest games ever witnessed on our campus. It was however rather one-sided as the score, 18-0 in favor of the college, would indicate, yet at times the city chaps made it exceedingly interesting for the agricultural devotees. For the bankers Lawson and McLaughlin did splendid work, while the success of the second year team was largely due to the brilliant play of Bracken and Montgomery.

The five mile cross country run—a last, lingering remembrance of summer sports, was run on Saturday, November 5th. The course started in front of the college main building and extended around the college farm, ending up at the starting point. W. A. Kerr of the first year, who won the college championship on Field Day, won the race in 35 minutes. Ballantine of the second year, came in second, Barber, of the fourth year, came in third and Colwell, of the third year, fourth. Another contestant, Duncan, of the third year, owing to heart trouble, dropped out without finishing the race. Mr. Kerr certainly deserves great credit for the splendid work he has done this season ; he shows the qualities of a strong runner and doubtless in a few years, will give a good account of himself in very fast company.

Locals.

As a proof of the widespread influence, lofty work and advertising value of THE REVIEW, we submit the following letter, a type of the many thousands received decadelly at our office. Here the Macdonald girls may see what is the acme of perfection and what are the wonderful possibilities and advantages of a thorough "Doughmestick" teaching:

To Editor of The Review.

Deer Sur.—Would it be possible to obtain a good plane cook, at the Skool of Doughmestick Sience.

Do the McDonald gals git instruck-shins in receivin callers, and do the O. A. C. stoudents hev to act as modalls for the aforesade instruck-shins.

I intend sendin our Mary Ann tur a coorse in doughmestick sience. Pleese send me the rools and regulations, if you can spare them for a few days. Would Mary Ann's beau be let call on her if he sade he was her coosin. Does the McDonald girls have ter eat their own cookin, if so do many ov them die, and do their folks git their remains?

If they spoil grub do they have to pay for the damage; hev they a place ter hide spoilt stuff?

Would the trainin Mary Ann wuld get at the skool, kure her from shyin at mise?

Where do the McDonald gals go when they gradvoate, do they marry? If so do their men live long?

Pleese rite at wonct.

Yours expectfully,

MRS. SOLOMON RAWHIDE,
Bugville, Ont.

Bulletins recently issued by the staff.

French as *She* is Spoken, by Mac-Millan.

The Cry of the Idyl Wyld, by Fairbairn.

In Dire Straits or Where Can I Get a Girl—A tragedy by Deachman and LeDrew.

The "Roger Brand" and why I like it, by Esmond.

Ross Will Win, by Eddy.

The Coat of Many Colors, by Hand.

Nothin' Doin', by Hart and Klinck.

The Stalking of Tall Dear, by Logan.

The Widow's Might, by Kennedy.

Far From the Madding Girls, by Mortimer and Jones.

It is obvious that Torønto education is far in advance of ours. One of the visiting teachers asked if we did not have machines for stuffing cattle similar to those for stuffing chickens. A machine is not necessary to stuff teachers.

Dan Patch had a close shave the other day. Lost by a quarter and finished in a lather.

While our Y. M. C. A. representative was at the Lakeside conference he chanced to wander into a store to make a little purchase. While serving him the clerk asked from where he hailed.

"From Canada", proudly replied Jack.

"Oh yes" answered the counter-jumper, "My father used to drive a stage through there."

At a church social—

Freshmen,—(to young lady), “Are you going home now?”

“Yes”.

“Well, good-night”.

Deep wisdom—swelled head,
Brain fever—he’s dead.

The Senior.

Maiden left him—hopes fled,
Heart broken—he’s dead.

The Junior.

Went skating—’tis said,
Ice hit him on the head—he’s dead.

The Sophomore.

Milk famine—not fed,
Starvation—he’s dead.

The Freshman.

The Macdonald editor—“Are you the president of the Y. W. C. A., Mr. Ledrew?” Another fact which conclusively proves that it is folly to judge by appearances.

Hand was conspicuous with his “Flower, Fruit and Honey Show” the day of the convention. He had a rose-bud and a peach and a little honey.

A miss is as good as a mile—
There’s something funny in this.
If a miss is as good as a mile,
Then a mile is as good as a miss.
A mile as good as a miss!
The absurdity raises smiles,
For I’d rather walk out a single miss
Than a couple of hundred miles.

A natural semi-sonnet by Ernest Thompstone.

Hart, when expounding in Botany explained that Arrowroot belonged to the same family as Ararat.

Our worthy resident master is setting a high standard in manliness. He has no respect for “a man who runs away when he’s caught”.

Two travellers, reported to have come from the O. A. C., carrying a smile three inches deep, and an ordinary basket of grapes, arrived at their hotel apartments in anticipation of a good feed and a refreshing sleep. One glance at the room, however, was sufficient to dismiss all thoughts, as a more important problem of how to get in presented itself. The smile vanished as if by magic, but the basket of grapes was not so easily disposed of. The room was so small that they could not take both themselves and the basket in, so to economize space, they ate the grapes and left the basket outside. Upon investigation, they found the room to be 6 x 3 feet, containing a large bed of about the same dimensions. Were it not for the fact that these gentlemen were from the east, they might have been daunted by the prospect. The political boss of Nova Scotia, to get off his shoes, found it necessary to climb on the bed to make space on the floor. The Newfoundlander, after careful search found the mirror, and by getting down on his knees, (not an unfamiliar attitude) he could comb his hair and perform his devotions at the same time. The bed was lined with burned fire-proof brick, and this added to the comfort. To make things safe, they blockaded the door with their boots and these proved to be of sufficient strength to prevent the

entrance of would-be intruders. To change their minds they had to put their heads out of the window. They now say that they are going back the next time.

—
That car did'nt go quite as fast as greased lightning on Hallowe'en night, did it? But the grease was there, just the same.

—
It is a well-known fact that goats thrive well in high altitudes. Why one was found even as high as Upper Panton on Hallowe'en night.

—
Mr. McKenzie—"Who is your favourite author, Miss J—?"

"I love Scott's works very much".

"Which do you consider his best?"

"I think Scott's 'Emulsion' is about as good as any".

—
The Modern Maid.

Her sleeves are 1830,

And her skirt is '61.

Her tresses in the manner

Of Louis Quinze are done.

Her hat is quite colonial,

Her brooch is pure antique.

Her belt is 1850,

But when you hear her speak,

What year the maid belongs to

You do not wonder more.

Her dress is many periods,

But her slang is 1904.

—
Overheard at the grocers:

"What shall I do with these peanut shells?"

"Throw them on the floor."

"That's not Domestic Science."

"Throw'em behind the counter then."

"That's not Domestic Science either."

"I guess not! Domestic Science would take them home and grind them

up and serve them in a bread omelet for breakfast."

—
It is seldom that the students have had an opportunity of seeing a stronger play than Richard III, which appeared in the Opera House on Thanksgiving night. It is only when a student is surrounded by the same atmosphere, and feels himself transported to the same epoch that he can realize the power, life and genius which thrill Shakespeare's plays, then only does he obtain an insight into human life, both past and present.

—
People who ought to know, sigh for the quiet, rippling humor of the Irish, the loud, hearty mirth of the English, the cautious, concealed joke of the Scot, the dimpling, childish smile of the Bretagne, or the scathing smartness of the Yankee, and bemoan the sober, practical Canadian nature that admits of no laugh. But give us the charming frankness, the unsuspecting, guileless naivete, which prompted the writing of this letter, a genuine copy of a note sent by one lady to another who contemplated a *day's* shopping:

Mrs.—

Would you please fetch me a waist from Toronto. I would like it lined for this time a year I don't care what kind you fetch me as long as it's not a red. You pretty near know what I can ware, pale blue is my favorite. Give somewhere about \$1.50 for a waist. It's no use in me getting an expensive waist, with the baby and for Esley's suit if you get a bargain on a suit to fit him you can fetch one and if not never mind for he got 1½ yds. of blue serge 54 in. wide give to him. So when I get the pattern from you. I guess I have to make it my-

self. Fetch me a fancy collar. Please and a half yd of all over lace cream and a 65c black Sateen waist, and a pair Stockings for the baby with the red dotin No. 5 and a pair of red stockings No. 6. Would you please see if you can match this piece of blue silk. I got it in Toronto and I have'nt enough. I give 23c. a yd. for it.

If this stuff is going to any trouble to you Mrs. _____ don't bother with it.

Yours truly,
Mrs. _____.

If not please fetch Esley one of the latest styles of caps and a fancy pair of slippers No. 8 and a pair of black stockings for him. So Good-Bye.

Distracted Chemist—What kind of ether is HOH.?

"Girls, have you heard about the fines for the Literary Society? Two cents for absence, and one cent if you're late?"

"Humph! I suppose that means three cents, if you are both late and absent."

Found!!!

Just where it was lost, one "sigh-anide" bottle.

Owner please apply to finder with proofs, and relieve all "suspense."

Are these white blackberries red when they're green?—Hamer, in Horticulture Class.

RING OUT THE FALSE; RING IN THE TRUE.

The False.

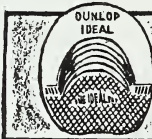
The heights that great men reached
and kept,
Were not attained by sudden flight,
But they, while their companions
slept,
Were toiling upward in the night.

The True.

The heights that great men reached
and held,
Were not attained by sudden flight,
But they, while their companions
plugged,
Were sleeping soundly through the
night.



MADE BY
THE DUNLOP
TIRE CO'Y
LIMITED.
TORONTO



E. A. G., Ont.—A mare three years old is lame in the off fore foot and leg. A veterinary surgeon said the lameness is in the coffin-joint, and blistered for it, but she is no better. When standing she points the lame foot about twelve inches in front of the other foot. After standing in the stable over one day she appears stiffened up in both fore legs.

Ans.—Your colt has navicular disease, for which there is no cure. She was probably bred from a stallion or mare suffering from the disease. All you can do to relieve it is to put on a good blister and turn out to grass in a week's time.

Dunlop "Ideal" and "Bar" Horseshoe Pads

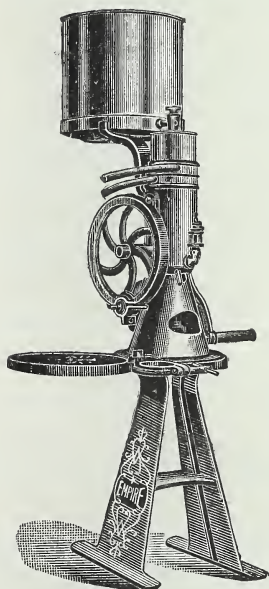
Put new legs on your horse. Cure or help to cure most hoof troubles. The only thing for navicular disease.

Put on by the Blacksmith who shoes your horse.

This is a reprint of clipping from a recent issue of the Montreal "Family Herald and Weekly Star." The veterinary who answered the inquiry could not here advise the use of "IDEAL" Pads without giving Dunlop a free advertisement. The pads would give this mare a longer working life.



WAKE UP!



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

Why?

BECAUSE THE
“EMPIRE,”

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

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

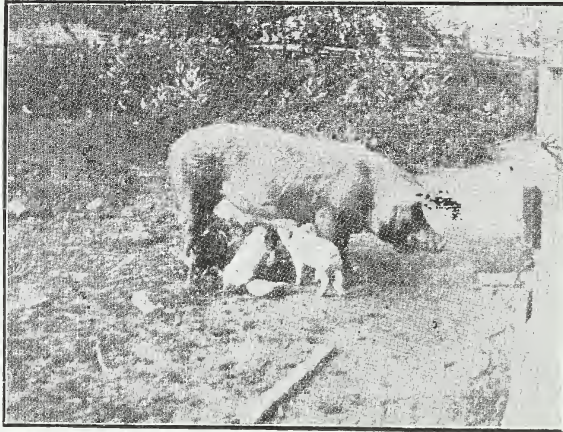
We have an interesting booklet called “Dairyman’s Dollars,” giving the story of Peter Sleepy and his awakening. Send for it.



Empire Cream Separator Co.,

28-30 Wellington Street, West,

TORONTO - ONTARIO



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

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

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

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

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

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

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

1st—Name this paper.

2nd—How much stock have you?

Capital Paid in
\$2,000,000

International Stock Food Co.
Toronto, Canada.

Largest Stock Food
Company in the World

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Has done for others, it will do for you. It is fed to the *best*, by the *best*. Weights like the following prove that it enables animals to digest their food properly. Thousands of tests were made this Season. We quote a few results on calves, giving weights and ages.

770	lbs	at	6	month	and	20	days,	Calf	owned	by	W. R. Stewart	of	Lucasville,	Ont.
802	"	"	8	"	"	10	"	"	"	"	J. Currie,	of	Eramosa,	Ont.
730	"	"	6	"	"	23	"	"	"	"	J. Herriott & Sons,	Souris,	Man.	
600	"	"	6	"	"	"	"	"	"	"	N. Thompson,	of	Orangeville,	Ont.

Equally good results are reported of tests made on Horses, Cows, Fattening Cattle and Hogs. Over forty Veterinarians and hundreds of our best-known stock men recommend its use. A trial always convinces that Carnefac is a strong and effective tonic and regulator. Bear in mind that it is made in Canada by a purely Canadian Firm. If not sold by your dealer, write direct to

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A 9 to 1 Cement.

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

Farmers.

For your New House, Barn Floor and Silo.

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You Need A Cement

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



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



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The Clothes made here are in keeping with the College.



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

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MAKER OF MEN'S CLOTHES

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



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Stoves, Tinware and House Furnishings, Etc. Etc.
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The Authorized College Pin



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Sterling Gilt, Price 50c.

Special Feeds



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

Noted Tea Store

and China Palace

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D. H. Booth

Successor to

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In elegant Leather, Burnt Wood and Cut Glass Ware.

Brush, Toilet and Manicure Sets.

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

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

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Latest Designs direct from Paris.

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Handkerchief Cases	Collar and Cuff Boxes		Glove Cases

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

Wampole's Fermolid Cream.

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

Wampole's Yunora Perfumes.

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

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Your Patronage Solicited.

John D. McKee, Phm. B.

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

BOYS REMEMBER

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

Oysters as you like them,

15c., 2 for 25c.



Ice Cream Every Day in the Year.

The Kandy Kitchen

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IN THE CITY



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

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Suits Cleaned, Dyed and Pressed
Pressing Done on Shortest Notice
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FOR YOUR SKIRT AND TROUSER HANGERS

GO TO

JAMES STEELE'S
Woolwich Street,

Opposite Wellington Hotel.

Yours truly,

JAS. STEELE.

SAM LEE HING.



Me Want your Washee!
Do it Quickee!



Call on

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WYNDHAM STREET.

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Supply all you need in Mounting Sheets, Seed
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For
Convenience of
Students



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WEDNESDAY and FRIDAY morn-
ings from 7.15 to 7.45 to collect
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We Guarantee Satisfaction



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In fact, everything that is kept in a well-ordered
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Macdonald Girls will find at Ryan's the newest creations in

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the smartest styles in all sorts of Good

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in correct styles for every use or occasion.

Everything that Young Ladies want to wear

in Complete, Satisfying Assortments, Best Styles
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GUELPH'S LEADING DRY GOODS STORE



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

I DO

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

Next to Traders' Bank

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Men's Furnisher, Hatter and Fine Tailoring

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GOODS

E. R. Bollert & Co.

LADIES'
GOODS

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

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Fine Ordered Clothing at Moderate Prices.
Fit-the form, Ready-to-wear Clothing, very good and very cheap.
Best styles of Hats and Caps at el sest prices.
Up to-date Shirts, Collars, Ties, Gloves, and Fancy Furnishings, not at fancy prices.
Underwear, Hosiery, Etc., grand values.

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Dressmaking at very reasonable rates.
Ready-to-wear Coats, Skirts, Blouses, Etc., in great variety of new things.
MILLINERY—All the Novelties of a first-class Millinery Business constantly received.
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High Class Note Papers and Envelopes embossed with College and Hall.

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Parcels Delivered Each Day at 3 p. m.**

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BULLETIN BOARD

Some
Features
Of



Our
Christmas
Number



Our next issue W. P. Gamble will tell of his trip through southern England ; C. C. James, Deputy Minister of Agriculture, is writing on the broad and interesting subject of Canadian Literature ; C. W. Nash, the well-known ornithologist, will relate something of the wonderful story of the birds ; Nag-Tany, our energetic Japanese friend, will continue his account of the struggle for the supremacy of the far East ; Walter James Brown is writing on the study of economics ; Professor Zavitz, on the development of agricultural education, and B. E. Patterson, journalist, humorist, miner and financier, is sending us a contribution on "The Greatest Thing on Earth," whatever that may be.

These are only a few of the special features. We are arranging for something pretty extensive in the way of illustrations. The departments will be larger and stronger than ever. "Our Old Boys" will tell of many friends once familiar in our halls, but now scattered to the ends of the earth. We are not attempting to give you a Bibliography of Canadian Agricultural Literature, with contributions by all the prominent Canadians within our ken, but we want a number that will be brightly reminiscent of college life, brimful of the progressive spirit of modern agriculture, and yet, touching upon many of the questions of general interest to every Canadian citizen.



DR. ORONHYATEKHA, S. C. R.

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INDEPENDENT ORDER OF FORESTERS

Record for 1903

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

DR. ORONHYATEKHA,
Supreme Chief Ranger

JOHN A. MCGILLIVRAY,
Supreme Secretary

Home Office, Temple Bldg., Toronto

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

To Be Without

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

The

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

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

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



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

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Dairy Suits
a Specialty

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Material to Smoke or Chew Call at the
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You will find everything you want there.

McHugh Bros., 26 Lower Wyndham

FOR THE MOST DELICIOUS ❀ ❀

Confectionery, Ice Creams, Oysters,
Pastry, Fancy Cakes, Wedding Cakes
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Catering Promptly attended to.

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

The ❀

**ELECTRIC BOILER
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Walker's Electric
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High-Grade Lubricating Oils, Greases, Packings
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A Specialty

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Guelph's Leading and
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5 and 7 Wyndham 56 McDonnell Streets.

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The best place to
get a good Group
Photograph or a
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self

ROGERS ❀

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YOUNG'S OLD STAND

GO TO **HEROD** —

FOR ALL DRUGS

❀ **ST. GEORGE'S SQUARE** ❀

The Students of the

O. A. C. and Macdonald Institute

are invited to make this store their buying centre for everything in

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

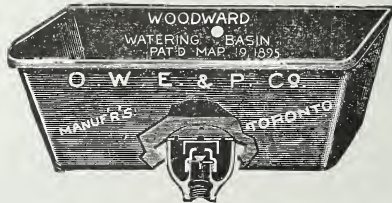
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Interior view of Stewart's 20th Century Pharmacy "The Store with a Good Record."

ALEX. STEWART, CHEMIST.

Water Troughs

THE "WOODWARD"



SOLID FACTS

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

BEST STOCKMEN AND DAIRYMEN USE THEM

ONTARIO WIND ENGINE & PUMP CO., LTD. TORONTO.

**THE
ALEXANDER
ENGRAVING
COMPANY**



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ADELAIDE ST. W.
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HIGH CLASS DESIGNERS AND ENGRAVERS.

Alva Farm Guernseys.

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

Young Animals of Merit for Sale

Pedigrees and particulars to parties wishing to purchase, address:

SYDNEY FISHER, Knowlton, Que.

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

JOHN HILL

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

Stock always on hand.

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G. T. R. Station, Baden.

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White
Windsor
Salt**



SNOW WHITE

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

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A FAMILY LIBRARY
The Best in Current Literature
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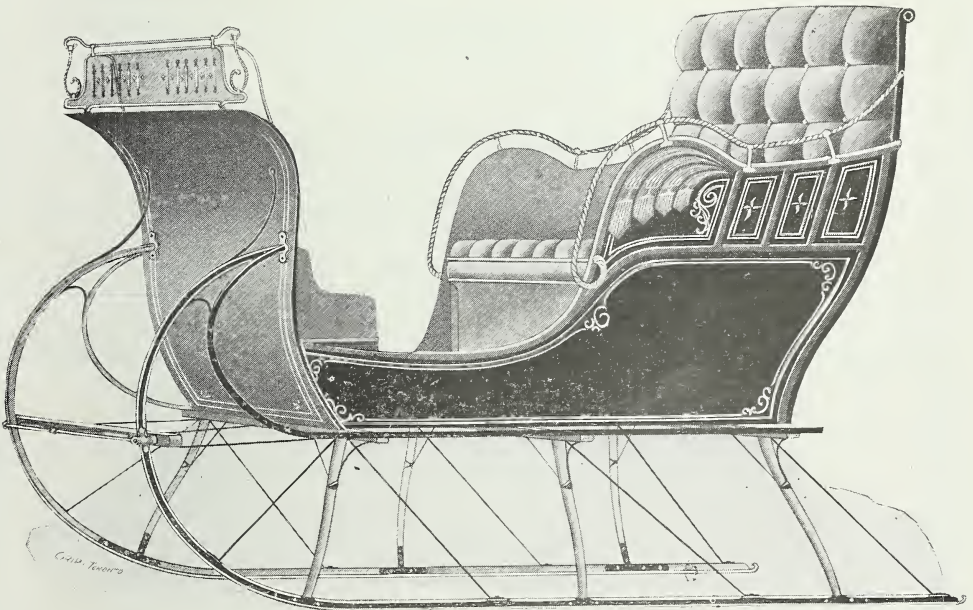
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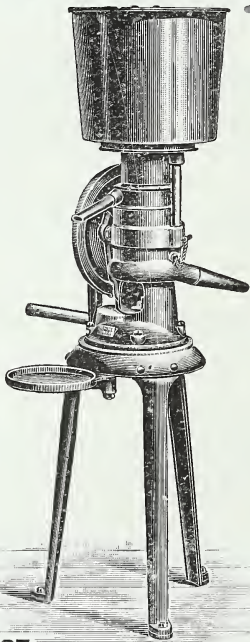
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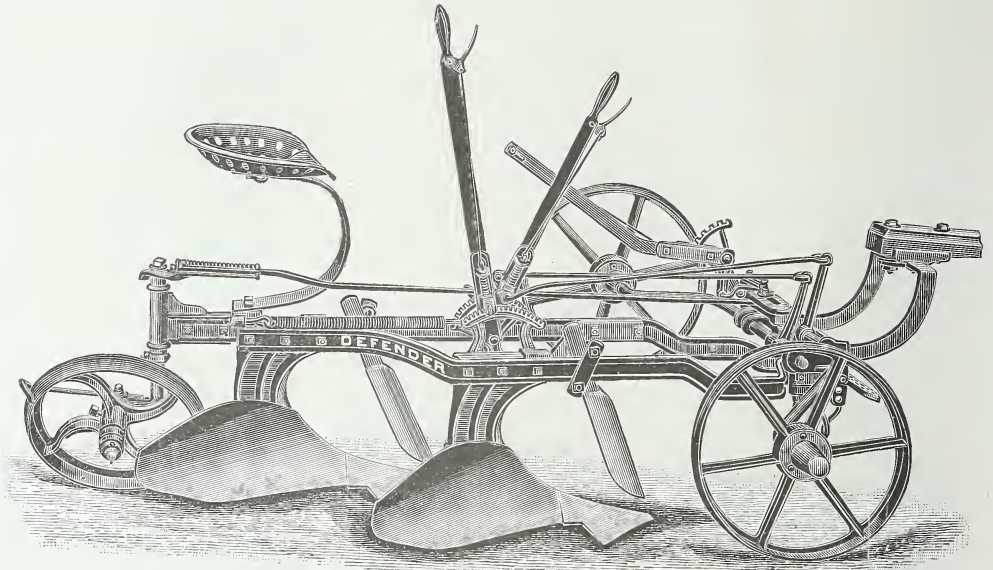
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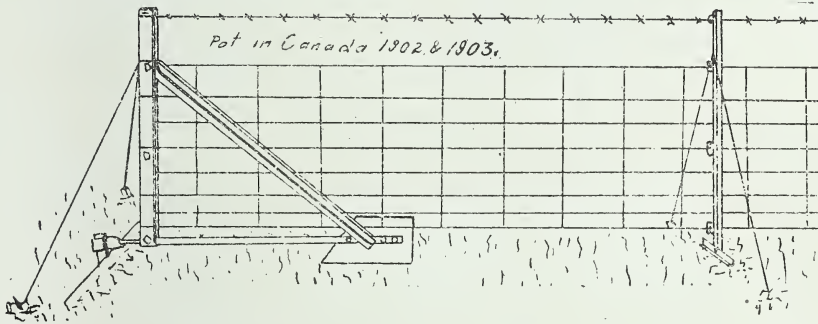
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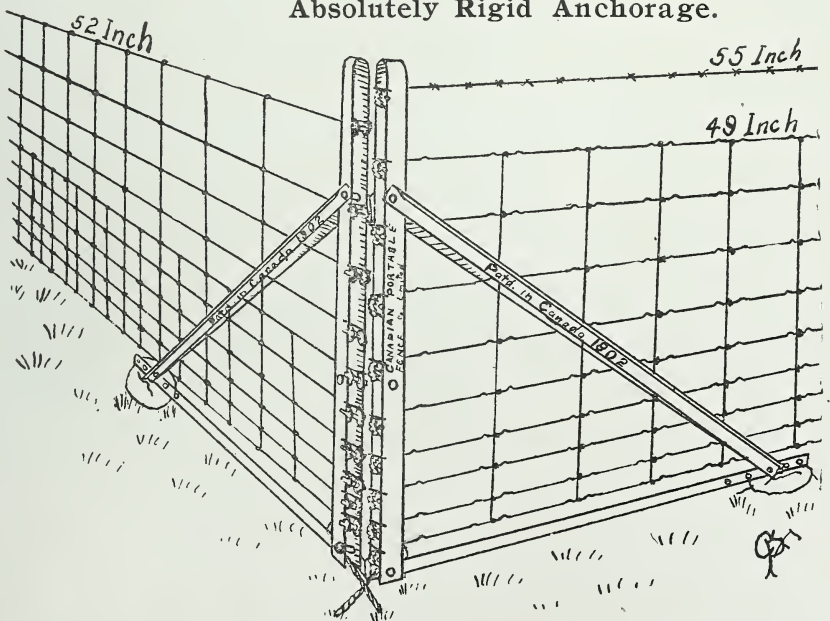
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