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MAGAZINE.



April-May, 1915.

Vol. V.

No. 4.



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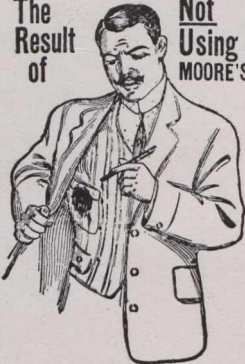
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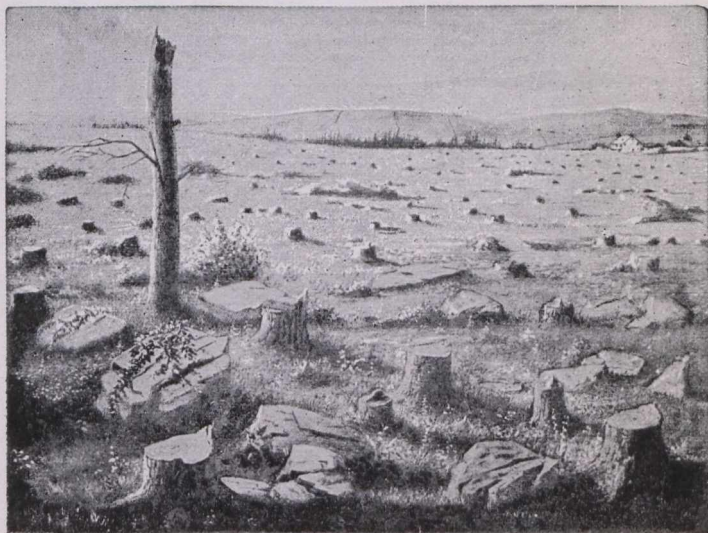
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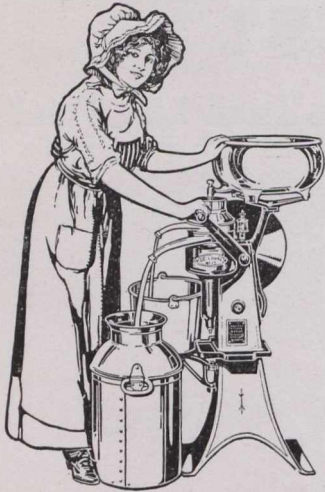
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The Macdonald College Magazine is published four times during College year by students. Subscription: \$1.00 per year. Address all subscriptions, etc., to the Business Manager, all advertising matter to the Advertising Manager, and all matter for publication to the Editor-in-Chief, Macdonald College Magazine, Macdonald College P.O., P. Q.

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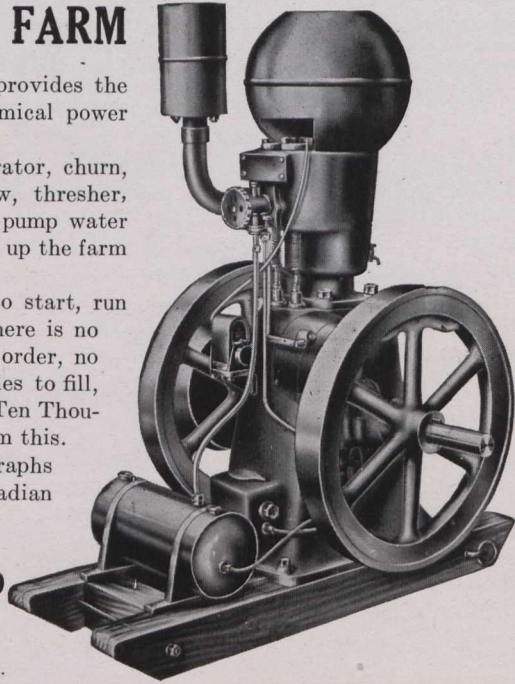
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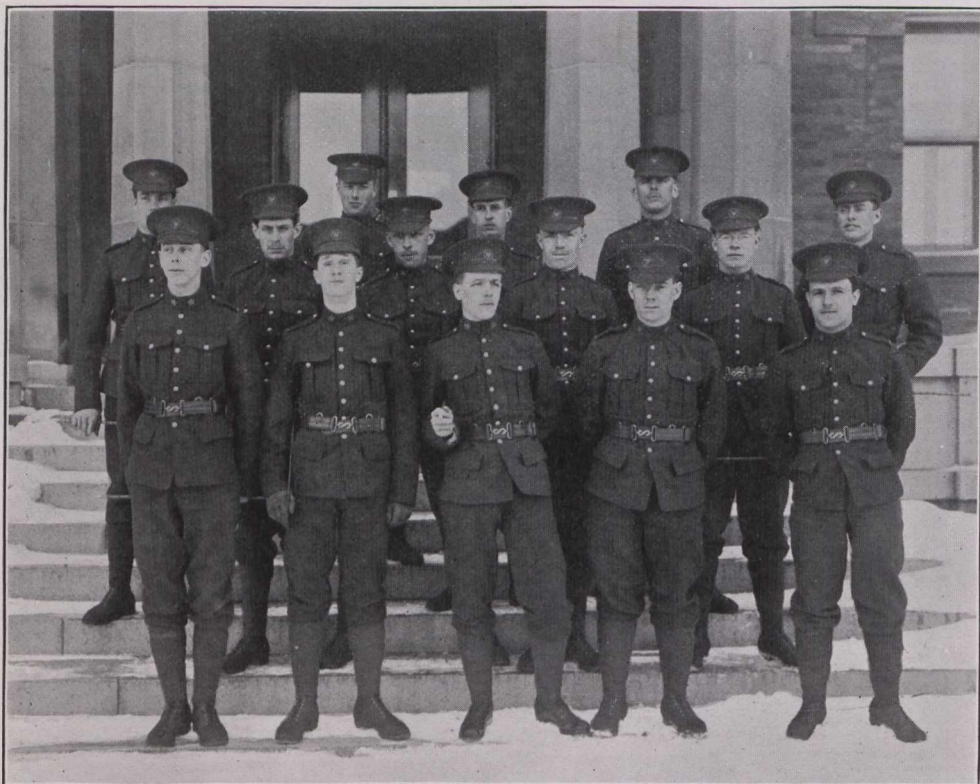


Macdonald's Roll of Honour.



N the fall number of the MAGAZINE we had the honour of inscribing on its pages the names of those who had volunteered for active service in the cause of the Empire. Many of those whose names were then given are now doing their part, as we knew they would, in the trenches in France, or in other capacities in keeping with their training and the necessities of war. Mathews, from whom we read a letter but a few days ago, was the third man of the First Canadian Contingent to enter the trenches and the firing line, and it behoves us to realize that Macdonald College now has its representatives in the actual theatre of war. Their Alma Mater is in their keeping, and we know that our honour is secure. Not long ago the Principal received a letter from Baily, in which a very vivid account of the life with a mighty army was detailed. MacClintock has also given

us, in his usual racy style, an account of things in his own particular sphere, and these letters which have been duly posted on the notice boards are such as give pride to those of us who are as yet left behind. It is since Christmas, however, that we have in very truth felt the call of the blood, and the response has been in keeping with the urgency of the need. Within the last two or three months no less than 27 of the total men students in residence have enlisted for active service in one capacity or another. The fact that this represents twenty per cent of our men speaks volumes for the wave of patriotism which is sweeping over the Dominions of the Empire, in keeping with the spirit of the Motherland herself. The men who have lately donned the uniform of the King, like those who went before, have not rushed in with careless mien and jaunty air; they have deliberately sunk their academic aspirations and their social proclivi-



MACDONALD MEN WHO HAVE ENLISTED WITH MCGILL BATTALION.

Back Row—A. R. Milne, W. Buckland, J. H. McCormick, E. A. McMahon, C. E. Boulden.

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Front Row—A. R. Jones, W.J. Patterson, C. Bradford, P. Ashby, J. W. Brunt



B. WALSH, 5th Mounted Rifles.



MACDONALD MEN IN THE MCGILL MEDICAL CORPS.

Standing—R. E. McKechnie, H. I. Evans, G. F. Collingwood

Sitting—J. G. Lefebvre, C. F. Peterson, H. D. Mitchell, H. F. Williamson



J. G. RICHARDSON,
24th Victoria Rifles.



E. VIANNE,
24th Victoria Rifles.

ties, and they have offered on the altar of duty that which is dearer than all but honour—life itself. We are justly proud of the fact that such a splendid percentage of our men have joined the Army, but we are still prouder of the fact that they are men of such calibre and such worth. As students of the College they do us credit academically, morally, and physically, while as "Soldiers of the King" the motto of their Alma Mater, "Mastery for Service," in unison with their sense of duty and their legitimate pride of race, will lead them on to glory and to fame. To doubt it would be to doubt the shining of the sun. We cannot but keenly feel their temporary loss from our midst, but the qualities, which as friends and fellow students have endeared them to us, are the very qualities which will enhance the strength of whatever company it is their fortune to form an integral part. Almost to a man they have made their mark in College life in one way or another, and some of them have constituted a record by which the annals of the student historian of the future will be illuminated. Among their number are McKechnie (Mac), who, as President of the Y.M.C.A., has worthily upheld with eclat the traditions of his predecessors; Mitchell, who, as late advertising manager for the MAGAZINE, could extract money from the sources which ordinarily might have been considered impregnable; Evans ('Arry), the hope of his class as a baseball pitcher and the ex-President of the College Athletic Association; McCormick, who has led his class without a break; Williamson, the musician and Chairman of the Bible Study Committee, all of Class '15 and hence in their final year. Among the Juniors are Collingwood, "the student," who led his class at Christmas; Kelsall, who came second and as a pianist has been one of

our acquisitions; Peterson, the humorist for the MAGAZINE and incidentally a "dry-stick"; Boulden, the conductor of the College Yells; and McMahon, who on occasion made a perfect usher.

The Sophomores are represented by Milne, their President, who is a host in himself as Secretary of the Y.M.C.A., Prize Essayist of the Canadian Manufacturers Assn., and Assistant Editor of the MAGAZINE; Bailey (H. C.) the winner in his Freshman year of the College Individual Championship for Sports; Bradford, a runner and an artist on sports day with the 'pole'; Jones, a runner-up in academic work; Spendlove, famed as the originator of the College Bum Band; and Vianne, whose student activities would ensure his success as a commandeering of supplies.

The Freshmen have not been with us sufficiently long for us to know their peculiar adaptabilities to such an extent as would warrant us being explicit, but they are worthy comrades of those with whom they share the honour of being Macdonald boys. Ashby is unique as an unconscious wit, and good humour is bound to prevail in the environment of 'Pat'; Walsh, the peculiar shade of whose hair has earned the encomium of 'brick,' was on the Committee of the Y.M.C.A.; Wilson as a hockey player was one of the stalwarts of his team; Flood has supplied a very great deal of enthusiasm incidental to the forming of the McGill University Section; while Roy (Spike), Richardson (Dooley), Buckland, Lefebvre, and Paterson have each the makings of a man. Brunt, of the School for Teachers, took an active part in the literary work of his class. Two of the staff, Mr. MacFarlane, of the Chemical Department, and Mr. Hislop, cashier in the Bursar's office, have vacated remunerative positions to serve their King in uniform.

A little while ago Captain Barclay, in command of the McGill Overseas Company, which is attached to the 38th Ottawa, expressed a desire that a section should be drawn from Macdonald. No less than seventeen of our men responded, and they are now at the time of writing in barracks in Montreal.

Many have enlisted in the McGill Base Hospital, which is destined for service in the immediate future ; while they are drilling regularly in town, they are as yet in residence with us pending their removal to barracks. Two are in the 24th Victoria Rifles, two in the

Canadian 5th Mounted at Sherbrooke, and one in the 6th Mounted Rifles at Halifax.

We honour our boys who for the time being have discarded the pen, the test-tube, and the lecture-room to don the khaki of the King, and we shall await with confidence their return from the field of fortune, of honour, and of glory. Their sacrifices have been great; great will be their reward. We clasp their hands in friendship, we wave them 'Au Revoir,' we wish them God-speed, and, in the words of the immortal bard, cry : "God for Harry ! England ! and Saint George !"

NOTE.—Since the above article went to press, H. W. Brighton, President of Class '18, has also joined the colours.



A Section of the Officers' Training Corps at Target Practice.

Stonehenge.



HERE in Canada since August, and more particularly since Canada sent her first contribution of men to join the army of the Mother Country, much has been heard from time to time of Salisbury Plain.

Not a few men from Macdonald will be seeing this place for themselves, and to them some information concerning it may prove of interest.

cathedral. At this point you turn to the right, and go North for seven or eight miles, and so reach Salisbury Plain.

While you travel over the undulating country and ascend the round-topped hills, broad sweeping valleys come into view, where dotted here and there are to be seen flocks of sheep grazing on the short green grass, or, looking in another direction, hill and valley are



This shows the huge hand-laid Monoliths.

Soon after arriving in camp it should not be difficult to pay a visit to celebrated Stonehenge, the handiwork of the Druids of ancient history. These venerable stones are in the centre of the district devoted to military camps and manoeuvres.

To anyone familiar with the county of Wiltshire it takes but a moment to be back there once more, in spirit. In a moment one is on that road so often travelled before, the main road from London to the West of England; behind in the distance is the spire of Salisbury

covered with various crops, presenting one of Nature's own-colour schemes of regular pattern and varied hue. Here on the plain some of the farms are often several thousand acres in extent and the buildings are consequently widely scattered. In the country districts of England at every cross-road is a white-painted sign-post giving the distances from the nearest village, and to the most important town. Reaching one such sign-post you read that Stonehenge is two miles

along the road. The country passed through is grass covered with a few clumps of brushes at intervals. The next object to attract attention is a small granite monument close to the roadside. On drawing near, one learns that it has been but recently erected. The simple inscription tells that at this spot—a few miles from the Army Flying School—two officers, pioneers of aviation, fell to earth.

At least three hundred yards ahead and to the right of the road appear a number of tall grey stones, standing out sharply from the green grass,—the circle of stones erected by the Druids of old, more than three thousand years ago. Here in this very place they made human sacrifice, and performed their acts of worship to the sun. Within this circle of stones some 1600 years later, it is said, the great Roman Constantine was buried. You may approach and enter within the circle, and observe how some of the monoliths stand some twenty feet and more out of the ground. The composition of the stones is particularly interesting—they are Sarsen—a grey sandstone, and yet they are to be found in the middle of Salisbury Plain, which is one huge deposit of chalk, miles in extent and hundreds of feet deep. The stones then must obviously have been conveyed by some means to their present position, and it is believed that they were deposited here and there by glacial action and later assembled, shaped, and erected by the Druids. They are in circles, the outermost circle being composed of stones on end placed at regular intervals; resting on the top of these, and connecting them, are stones arranged horizontally. Some forty yards outside the circle is a tall stone called the Friar's Heel; this stone is in such a position, that when

the sun rises over the distant hillside on the morning of the longest day, a shadow is thrown by the Friar's Heel on to the sacrificial stone. This arrangement of a Friar's Heel is common to other Druid temples.

It was a stupendous task these men undertook, carving with the most primitive tools, assembling and erecting the immense monoliths, some thirty tons each in weight, just by their own bodily strength and their beasts of burden. It is a monument to endurance and perseverance unsurpassed by modern engineers, who can bring to bear highly developed engines of mechanical advantage.

It is a coincidence also that these Druids held a view resembling to a degree the modern sentiment regarding the sacrifice of human life—that there are other things more important than life itself.

A few yards away on the other side of the road to Stonehenge, are a number of regular shaped mounds, the "barrows" of the Romans. It was here that they buried their dead warriors, some eight together, after battle.

Beyond these "barrows" a mile or so over the plain, is a wire boundary guarded by a mounted sentry. Some distance within this boundary are the sheds where the Army flying machines are kept.

Brief mention can only be made of some of the military spectacles to be witnessed on Salisbury Plain—the charge past of three cavalry regiments can only be witnessed here on the training ground, and in actual warfare; the galloping past of the artillery to the jingle of the chains; the dull booming of the heavy field guns; the mass of white tents of the camps; the passing of supply waggons; the tramping past of

infantry and other manoeuvres, with now and again the drone of flying machines.

In the midst of all this our mind dwells on the many treasures scattered here and there over the Mother Country. In the county of Wiltshire alone there are numerous places where history has been in the making. It was here that Alfred the Great met with defeat and finally became victorious over the Danish invaders. A few miles away is the site of the old Saxon Parliament. The New Forest made by William the Norman lies on the boundary, likewise a battlefield of Cromwell. There are old castles that take us back to the days of heraldry. Then, too, the stately

residences surrounded by their picturesque grounds where natural beauties of landscape are preserved. The home of the Nelsons is such a one—Trafalgar House.

The churches also, that testify to the Faith of our forefathers of a thousand years ago down to the present; the old coach roads and village inns, the village markets and the country folk, the farmers, the labourers, the waggoners, the rumbling waggons, the smithy and the bonny village youngsters. In fine, our mind fondly dwells on the dear good old England that has been so for centuries.

GEORGE FENOULHET, Agr., '16.



Sunrise at Stonehenge on the longest day of the year.

Huntingdon County.



URING the glacier period, when most of the province south of the St. Lawrence was entirely carpeted with water, snow and ice, the county of Huntingdon received its coatings of rich soil. The ravages of time have not swept all the noted markings away, for running along the southern boundary of the county one finds ridges and terraces which the

limits. Huntingdon is situated at the head of the noted Chateauguay Valley, and at present ably does its part in keeping up its reputation.

Canada, the land of the maple, is the home of the happiest people on earth. Proud should be the farmers who have their homes surrounded by the maple, a tree that not only affords beauty and shade, but sends forth its sap to feed thousands of human beings. Situated



A scene especially pleasing on a hot summer day. Nor is it the only one of its type in Huntingdon County.

water washed up along the foothills. However, what the county is and what its agricultural standing in the Province is, concerns us at present. Huntingdon is the most southern county in the Province having for its southern boundary the State of New York; for its west and north west, Lake St. Francis; the county of St. Johns forms the eastern, and the counties of Chateauguay, Beauhar- nois and Napierville the northeastern

as we are, just below the foothills of the Adirondacks, one finds along the bound- ary rolling land covered with maple woods, made beautiful by ravines and small rivers rushing down from the mountains. On coming further north one finds large stretches of level, heavy land, rich in plant food and admirably suited for crop production. Various types of soils allow for different kinds of farming. Thus, we have orcharding

practised to a certain extent, much to our detriment, in a very primitive manner, coupled with lands wonderfully adapted for sheep grazing. Dairying is by far the most prominent and successful phase of farming practised, and it might be added that the county need at no time be ashamed of its dairy herds, Ayrshires and Holsteins each having their admirers, and rightly so.

About seven miles from the United States we find the county seat, Huntingdon, a town mainly made up of retired farmers and lacking slightly as an industrial centre. Both the N.Y.C. and G.T. railways pass through the town on their way to and from Montreal. This affords ready and unlimited access to the city. The Borden Milk Company operates a large concern, shipping large quantities of milk to Montreal, besides all the other milk by-products manufactured. Huntingdon presents the cleanest and most prosperous appearance one could desire. The county holds two annual fall exhibitions. Division A of the society exhibits at Huntingdon, and is the strongest. Here high grade stock represents the prominent breeds. The horticultural building and conservatory attract the eyes of all sightseers. The children's school fair in connection with Macdonald College is one of the great centres of attraction.

Division B of the society holds its annual exhibition at Havelock. Hardly so strong in live stock, but excelling Division A in the exhibition of apples and small fruits.

At present Macdonald College is represented in the county by Mr. R. E. Husk. There is a general feeling that the people are reserved in manner and the people of Huntingdon county do not fully appreciate the efforts of a district representative. I would state that

although the people are reserved in manner and do not take up with new ideas quickly, they stand by and with resolved and united efforts see through what they believe to be progressive. Mr. Husk has only been at his work for about one year. Last fall he held an excellent school fair; at present he is training a judging team for a county competition to be held at Ormstown. Teaching agriculture in many of the schools has taken up much of his time. As soon as spring opens Mr. Husk is going to do his utmost to promote the sheep industry. He intends to make himself personally acquainted with every sheep-raiser, and through untiring effort persuade these people to form a wool association, and to start as many new flocks as possible. At present there are all told 3,000 sheep in Huntingdon. There is no reason why this number could not be doubled or even trebled.

Orcharding receives much attention from the professors of horticulture at Macdonald. They have one or more demonstration orchards around Franklin, and all through the spring and summer various spraying and thinning lectures are given, in order that theory may be followed up by practice. May we hope that in the near future there will be great changes both in production of fruit and in the care of the orchards.

Within the next two years the county hopes to have its roads macadamized. Last summer there were six or seven crushers working. Good roads make the county more attractive, and tend to raise the social standard of the different communities.

Coupled with the good roads is the very wide distribution of the Rural Telephone and the Rural Mail Delivery, both of which are indications of success and prosperity.

The poultry industry has received considerable attention from Macdonald. The village of Hemmingford is the headquarters of an egg-circle; which, due to many causes, is not doing justice to itself or its founders. Co-operation is a great thing and aids the farmer in overcoming many difficulties. No district need fall down in co-operation if they elect live men who will diligently look after the interests of the society, and work for the society and not for themselves. One of the four demonstra-

tion poultry houses in the Province is to be found in the county.

As a county Huntingdon has much to be proud of, and much that time and opportunity, combined with progressiveness, can improve. In closing may I suggest that every branch of farming practised be given due thought and that all concerned work for the good of the county and the great Science of Agriculture.

G. C. BOYCE, Agr., '15.



Barn of Mr. Arthur White, built by his father, Mr. Thomas White.

THE
MACDONALD COLLEGE
MAGAZINE.

"Mastery for Service."

Published by the Students.

No. 4.

APRIL-MAY, 1915.

VOL. V.

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EDITORIAL.

Now that spring has come and the trees are beginning to bud, when we waken up to the singing of the birds and the inviting rays of the sun, when everything gives promise of growth and all the beauty of nature comes before us

again, we can realize a little more fully just what those of our boys, who have sworn away their personal freedom that that of their country may be assured, have given up. When we know for a certainty that, in some cases at least,

these things were really thought out, we can form some estimate as to the calibre of these men.

In the fall number of the MAGAZINE it was necessary to apportion a separate section to those who had at that time enlisted. Even then the number was quite large; but since then we have had twenty-seven men leave the college to enlist with those forces best suited to their liking. We have tried to honour them a little by doing what we would like to be considered as dedicating the spring number of the MAGAZINE to them. We are very sorry that we could not get photographs of all, but all those we have have been inserted.

In the splendid article "Macdonald's Roll of Honour," mention is made of the capabilities of the men individually. We would like to show just how many gaps have been made in the college activities without mentioning any names. The Soccer team has lost five of its players, the Athletic Association Executive four of its members, the Y.M.C.A. Executive four, the Students' Council four, while the Magazine Board has lost six. We mean it as a tribute to these men when we say that considerably more work has been laid upon the remaining members of these executives by their absence.

While we cannot go with them we wish our soldier boys all possible good fortune, and we hope that the remembrance of College days may have a strong influence on them wherever they may go.

□ □ □

Our College year is drawing to a close. Already half of our number is busily engaged at examinations and the rest of us are in the lull before the storm. The year has been broken up and un-

settled to a degree that has never been known before. Twenty-five percent of our total number, some of them the best among us, have enlisted. This breaking up of our ranks has disturbed the regular class work considerably and has thrown the management of all activities more heavily on those remaining. What is it all for? Are we any nearer the goal we are striving for than we were this time last year, or have we any goal?

Those two questions should make most of us pause. The second is answered first. Have we any goal? A great many, no doubt, have a hazy, immature ambition somewhere in background, but just how many have such a strong desire to amount to something that everything else must be smothered in the endeavor to gain that something! How many have entered Agriculture because of a love for the work, and because they felt that no other place would suit them? Did we think things over seriously before we decided what we would put our energies to? If to all these queries we can answer, "Yes," then *we* are in the setting meant for us and we will be heard from some day. If we cannot, then we have made a grave mistake. The thought is too prevalent nowadays that Agriculture is the coming vocation and that therefore there will be more lucrative positions and more opportunities to rise easily than in any of the other professions.

A generation or two ago, the boy on the farm became so imbued with a desire for some special work that he left everything and *worked* in the real sense until he at last emerged on the coveted height. Then, the thought that a certain course was more fashionable or that another course was the only one possible

financially, was not allowed to dominate all others. The result was that after years of struggle, when a man at last stepped out with his degree, he was a credit to his College in every way. In almost every case the men who occupy the most responsible positions to-day are men of this type.

Can each one of us, looking forward, assure ourselves that the credit, the same success in life will be ours if we keep straight on? We sometimes hear it said, "Oh! there are all kinds of jobs in Agriculture." What does this mean? Surely it cannot infer that whether a student work or shirk, the same position is open. It is fairly true so far that there are more positions than men available, but the time will soon come when these "jobs" will be filled. Then there will be more discrimination made and a survival of the fittest will take place.

There is just a possibility that enough *thorough* knowledge of the more scientific subjects is not required. This has, no doubt, been found necessary because the work to be covered is too large for the time allotted, but couple this with the fact that the student may not have a very fixed determination or a clear aim in working, and the leniency on the instructor's part soon shows itself in the student's attitude towards his books.

Perhaps it is because the field of Agriculture is so broad and the lines of distinction between its different phases so loosely drawn that some fail to see where they belong. Whatever the reason, it is to be hoped that those of us who have not been able to locate ourselves will make a determined effort to do so, for without interest we are no use. May we hope then that next fall

there will be a greater earnestness in all the work and a greater amount of zeal in all the worthy activities. We look forward to seeing a Freshman class strong in farmers' sons, with A.A. certificates, who are ready to do their best for their Alma Mater, who mean work, and who know how and why they chose Agriculture as their vocation.

□ □ □

In an endeavor to say some nice things about the ladies and give them our good wishes, the writer has already destroyed enough manuscript to call down the wrath of those supplying it. It is very much like diving, writing such a piece. Unless one happens to strike things at the right angle he either goes too deep or never leaves the surface; both are very unpleasant.

Our lady friends know that they have our very best wishes in all that they undertake. The relations between their building and ours have been most pleasant. They have assisted us nobly wherever their help was required, and our sincere thanks is the least we can give in return. Without their presence our social functions would amount to nothing, and the executives of the various activities would lose that zeal which is to be found in them at present.

As we look back over the College year, we have a great many pleasant times to recall. The rink, perhaps the most common source of pleasure, was the scene of many a night's fun. We feel sure that no matter where we may go, the time spent at College will act as a strong link for the good between past and future. That the men students regret very much that the friendships formed must soon be dissolved, is a

silent tribute, voicing the sentiment of our fellows. We wish you, ladies, all possible success and happiness in life.

□ □ □

This year sees the passing away of the "Seniors" in the School for Teachers. From a College standpoint this is not a desirable condition of affairs. Those girls who remained for two years have

always given very valuable aid in the organization work in the fall. From now on the total contents of the Women's Residence will be strangers to us for a much longer time than formerly. We wish to congratulate this year's Seniors on the amount of very willing and efficient aid they have given during the year, and wish them good fortune in all they undertake.



The Whole Battalion of Teachers.



The Industrial Uses of Potatoes.

THE potato, our most common vegetable, is generally looked upon as merely for table use, or occasionally as food for animals in years of large production and low prices. We have only to look about us, however, and observe conditions in other countries to see that the potato as a field crop plays a very important part in the economic and industrial life of certain nations. A survey of the principal uses of potatoes in different countries would show them in the following order.

First and most important is their use as a table vegetable, and secondly as a food for stock, large quantities being fed to swine every year in Germany, other European countries, and also America, though to a less extent. Their use in this connection is very important, especially where diversified farming is practiced, because, having a high nutritive ratio, they not only give a large return in meat, but also a very necessary

supply of stable manure for the up-building of the soil. Hardly less important than their use as food for stock is the use to which potatoes are put in the distillation of alcohol. Again, they are also used for the manufacture of starch and dextrose, and, in addition, considerable quantities are consumed by drying and canning factories.

Turning now to the use of the potato in the manufacture of alcohol, we find that they were first utilized for this purpose in Germany and are still used to a far greater extent there than in any other country. In Germany the potato is grown in large quantities under field conditions, in fact to such an extent that only 28 per cent is used as human food, as compared with America, where nearly 70 per cent is used by its people. When it is remembered too, that the Germans consume twelve times as many potatoes per capita as we in America do, the extent of their production can be better imagined. This great production was

brought about partly by the efforts of Frederick the Great of Prussia, who first perceived the vast economical and political importance of the potato. From his time on the production of potatoes in Germany increased rapidly, not only in area under cultivation, but in yield per acre. As a result, in Germany to-day the potato no longer competes with the cereals, it exceeds them. Over 12 per cent of the arable land is given over to this crop as compared to 5 per cent to cereals. This necessarily means a tremendous production, and, as mentioned before, only a small percentage is used as human food. Consequently the process of converting potatoes into alcohol gradually developed, until to-day it is a large and flourishing industry. That the manufacture of alcohol from potatoes is being conducted on a large scale can be judged from the fact that over 90,000,000 bushels of potatoes are disposed of in that way annually, which is more than our whole Canadian production. The quantity of potatoes used for distillation is also many times larger than the quantity of grain used, and each year sees an increase in potatoes and a corresponding decrease in grain.

The economic and agricultural significance of this industry cannot be overlooked, because its benefits are both direct and indirect.

1. All the ingredients taken from the soil by the potatoes are returned to the soil.

2. The spent mash, which is the product obtained after the starch has been converted into alcohol and the latter has been removed by distillation, is a valuable feed for cattle. This enables the farmer to maintain a larger number of cattle than would otherwise be possible, while they in turn provide the manure so necessary for the light soil.

3. It introduces a cultivated crop into the rotation, thereby increasing the yield of grain crops which follow after it.

4. It enables the farmer to convert the unstable potato crop, especially of those varieties having poor keeping qualities, into a stable product, alcohol, which may be held as a surplus stock for several years.

The use of potatoes for the manufacture of starch has also been developed to a greater extent in Germany than in America, where annual importations are made from the former country. Potato starch is used for sizing in cotton mills, for which purpose it is better than corn starch. In making starch from potatoes considerable waste is prevented, because culls unfit for shipment or storage and tubers partly infected with rot or other disease can be profitably utilized. There is one big difficulty confronting this industry, however, and that is the extremely short time during which the factories are able to run, generally not more than six weeks. The rest of the year they must stand idle for lack of material. There is a possibility, however, that a method may be worked out for drying culled and surplus potatoes on the farm, the dried product being used only for starch making.

The potato drying industry is the last development in the utilization of potatoes, and it grew up like the others through the necessity of finding an outlet for over production. That it has proved its worth is shown by the rapid increase in the number of factories, and the many uses to which dried potatoes can be put insure its continued expansion. Dried potatoes can be made use of in almost all the ways that fresh potatoes are utilized, and they have the advantage of being less bulky and safe from decay. Cattle and horses have

been fed dried potatoes as a substitute for grain with excellent results, and they are used by man in northern settlements in camps, or wherever it is not convenient or possible to have the fresh product.

This brief survey of the industrial uses of potatoes shows that no matter

how great the production of potatoes may be, there can always be found a profitable outlet for them, and the farmer who grows potatoes is carrying out the best principles of diversified farming and soil management.

A. R. JONES, Agr., '17.

The Oat Crop and its Production in Quebec.



THE Government and Agricultural Institutions are urging the farmers towards greater production. The prevailing opinion is that the coming year will bring with it a marked increase in the price of all farm products, due to the extra demand caused by the war. In order that the farmers may be benefited by this advanced price, they should endeavour to take advantage of all the factors which will enable them to produce maximum crops. This is especially so at this particular season of the year when farmers are preparing for the sowing of their crops, and it is at this time that considerable can be done in obtaining better results.

In Quebec the oat crop is the most important of the small grains, and the factors which will enable the farmers to increase the yield of this crop are the selecting and sowing of better seed. In some sections the preparation of seed oats is neglected to a great extent, due largely to the extra amount of work always present at seeding time. This can be overcome by getting the seed

grain in readiness for sowing in the early part of the season, when the work is not so rushed.

Many farmers in selecting seed oats quite often go astray. It has been the tendency for people in selecting seed oats to select a variety from a catalogue which looks exceptionally well in the illustration, and probably has a comment upon it which is rather flattering. A large amount of work has been carried on at our different experimental stations in the endeavour to obtain varieties of oats which are suitable for Quebec conditions. It is the results of these experiments that farmers should look to before selecting a variety of oats.

The sowing of western grown oats has been found to be a practice followed by many farmers. Unless great precautions are taken, one is liable to obtain a large number of noxious weed seeds, which will afterwards cause endless trouble. In many cases grain obtained from the western provinces has been damaged more or less by frost, and if this is sown it will mean a considerable loss to the farmer. As a rule, western oats will give a lower percentage of germination

than those home grown, due largely to different climatic and soil conditions.

With regard to the varieties of oats which have become most popular in this province it must be stated that the Banner is the most widely grown at the present time. It has given good satisfaction under average conditions and especially where early ripening is not an important factor. The Daubeney oat is one which has many things in its favour, and one that should be more widely grown throughout the province.

barley. Experiments have been carried on in this connection, and results have proved that this mixture when grown has given better yields of grain than where either is sown separately. It is necessary to use a rather early variety of oats when sowing with barley in order that the two crops may ripen together. This is where the Daubeney oat will prove itself to be of considerable value when sown along with Mensury barley. This mixture should be sown at the rate of 1 bu. of oats with



First and Last Seeding of Oats. Note the Difference.

It is an early maturing oat giving a high yield and has an extremely low percentage of hull which makes it very desirable for feeding purposes. The one great fault found in this variety is that it is more susceptible to smut than most other varieties.

It is a common practice to sow oats in combination with other crops for the production of either hay or grain. When oats are sown in combination for the production of grain better results have been obtained when sown along with

1½ bu. barley to the acre. These combination crops are not readily marketable, but are used chiefly for feeding purposes on the farm.

Seed oats should be carefully screened before sowing, and for this purpose the fanning mill is a most valuable machine. By the process of fanning the weed seeds are removed from the grain. Weeds are detrimental to the growing of any crop, and the oat crop is no exception to the rule. Fanning also removes a large amount of small and light oats. Ex-

periments go to show that heavier yields were obtained where large seed was sown instead of the small. A more uniform germination is secured, and the plants are stronger and more vigorous when large grain is sown in preference to the small. About 40 per cent of the ordinary threshed grain should be eliminated before sowing.

The treating of seed oats for smut has proved to be beyond all doubt a good practice to follow. Last year the majority of oat fields throughout the province were attacked more or less by smut. The loss of grain due to this cause can be easily overcome by the use of the formalin treatment.

The oats are piled in a heap on a clean floor, and sprinkled with a solution of formalin until every grain is wet. The pile is then covered with clean sacks for five or six hours, and then the grain can be spread out to dry. The formalin used for this purpose is of normal strength—containing 40 per cent formaldehyde. One pint of formalin is diluted in 40 gallons (Imp. gals.) of water; this is sufficient to treat from 36 to 40 bushels of oats. The bags which are to hold the treated seed should be dipped into the

formalin solution and allowed to dry. The grain should be treated a day or two previous to sowing.

The early seeding of oats is most advisable where possible. Experiments in connection with dates of seeding have been tried out by the Cereal Department at this College. A period of five weeks was taken between the first and last seeding, and this last seeding was made before seeding was completed in some parts of the province. It was found that the fall in yield between these two seedings was 21 bu. to the acre. This shows that the early sowing of oats is very important.

While many other factors might come up which would no doubt have some influence on the betterment of the oat crop, still the above factors are the most important, and can be easily carried out by every farmer.

It depends largely upon the farmer whether he is going to have maximum yields, and this can be made quite possible by adopting a little more skill in preparing his seed grain and sowing it at the proper time.

E. G. WOOD, Agr. '17.

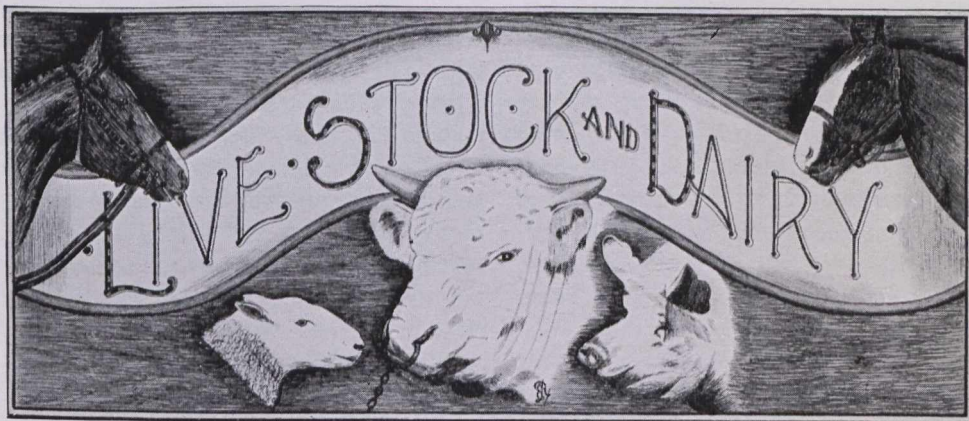
Immortality.

I died once, but I came to life
 With pain that stabbed me like a knife.
 And once again I know I died—
 Afraid! And yet that shell flew wide.

A singing bullet cut the air.
 I said a catch of a childish prayer—
 "If I should die before I wake,
 I pray the Lord my soul to take."

"Before I wake——."

FLORENCE RANDALL LIVESAY.



Canada's Market Situation and its Outlook.

BEFORE discussing the outlook of our Canadian Market, a short general criticism of the situation might not be out of place.

As a people there are perhaps three outstanding points which are well reflected on us as Canadians and which faults influence our markets to a very large extent. These are, lack of knowledge, extravagance and carelessness.

With respect to the knowledge of our markets we are much handicapped as compared with the United States and other countries; because, being a new country, as yet we have very little data on record. Extravagance has been indulged in by the Canadian farmer to about as great an extent as is possible, and the practice of selling everything off the farm that will bring immediate returns is telling on many of our farms to-day.

We cannot produce so readily and therefore we cannot market. We must get down to more economic work, and this is why agriculture is placed in such a position as it is to-day. This

previous carelessness and extravagance make us realize that we must change our manner of farming. Such are a few of the main things that are held in the minds of the leaders of our market considerations to-day.

Now for a few suggestions in the way of benefiting the existing conditions: of these I might mention co-operation as the great factor which should receive attention in the marketing of our Canadian farm produce. In some cases it is quite advisable, in many cases it is exceedingly hard to attain. In all our markets we have a distinct lack of organization; yes, a lack of system throughout. There are more middlemen, speculators, commissioners, etc.—all of whom must get their profits out of the ultimate product to be marketed—going about this country than the producers in most cases have any idea of. Then, again, our farmers, generally speaking, are not in touch with the markets. In this respect, Canada presents a poor contrast with other countries. Perhaps hardly one per cent of our farmers ever visit our markets; whereas in the Old Country,

where co-operation is better established, most of the farmers follow their products to market, see them marketed, and know all about them. Thus we see that our farmers and their ultimate product are too far apart, and that there is practically no identification whatever of farm produce after it has left the farm. By the time it has reached the consumer, whether it be good or bad, there is no means of telling where it came from.

Now, to look at the outlook for agriculture in this country. We have heard authorities harping on increased production for some time, and rightly so; and more than ever is this the case since the war has broken out. However, whenever the farmer is asked to increase his production, he immediately becomes concerned as to the probable markets for his extra produce. It is not reasonable to expect one to expend time, labour and money in an effort to increase production unless a profitable market is assured him. In the present situation, however, a profitable market can be assured the farmer. So far as it is possible to size up the situation of to-day and for a few years to come there never was a time when the general outlook for agriculture in this country was as favourable as it is at the present time. If we study carefully the adjoining table which was prepared before the war, we shall readily see that Canada has an open and ready market in whatever countries she cares to export beef to.

Country	Population	Cattle	
	Increase Since 1900	Increase Since 1900	Decrease Since 1900
France	2%	2%	....
Germany	10%	4%	....
United Kingdom	10%	4%	....
Austria-Hungary	10%	2%	....
European-Russia	14%	....	12%
Canada	34%	17%	....
Argentina	40%	....	6%
Australia	18%	40%	....
New Zealand	30%	16%	....
United States	24%	....	30%

By this table we see that in ten years the population of Canada increased 34%, while the number of cattle increased only 17%. Moreover, figures also show us that the city and town populations, which may be looked upon as essentially the consuming element, increased by 62.2 per cent., while the rural population, or the producing element, increased by only 17 per cent. We also see that of these countries only one increased its cattle more than its people in the past ten years. Do we need any stronger argument than this table to show us that there is bound to be an increasing demand for beef? Add to this condition, the destruction of livestock of all kinds, breeding stock and young stock included in the several war zones, and we strengthen our argument still further. Surely this is an opportunity for Canada, as a producing nation and as a livestock country, to increase her production, which we surely should do. Formerly England received much of her imports from the United States. To-day she must get them from other sources, and we as a Canadian people have not yet filled the situation out of which the United States has dropped.

Canadian farmers have been losing great opportunities in sheep raising and sheep feeding. The demand for wool and mutton is increasing; and surely Canada, which is essentially a sheep-raising country, should try to cut down her imports of mutton and wool, and to become exporters rather than importers.

Reasoning from the general rule with regard to Swine Husbandry, namely: "buy when others are selling, sell when others are buying," leads us to predict a marked advance in prices during the coming year. Alberta alone is said to have marketed one million hogs in 1914; and through the indiscriminate sale of swine throughout the Canadian West

during the past three months, the supply of 1915 promises to be little more than half that of 1914.

Now, what is the lookout with regard to the horse? Statistics show us that the horse industry shows an increase in production in all parts of Canada. This is the only class of livestock that has been increased as it should. However, the supply is by no means exceeding the demand, and more than usual is there the tendency to-day to liven up the entire horse trade. From the fact that it is estimated that the life of the cavalry horse in this present war is seven days and of the artillery horse thirty days, we can see that the wastage of horses during the war thus far has been enormous and will continue to be until it is over.

Last, but by no means least, we must consider our dairy industry. Although our milch cows have increased from 2,408,679 in 1901 to 2,549,179 in 1911, yet this is disappointing when we learn that this increase did not amount to 8%, and that it was less than one-quarter of the population increase of Canada.

Furthermore, the per capita consumption of milk by Canadians increased 30%. We also see that during these ten years

the exports of Canadian cheese have been steadily declining, and when we look at the market prices of to-day, they readily suggest to us the advantage of increased production. At present there are many farmers in Western Canada enthused with grain growing owing to the long figures obtained for the product. Some have partially forgotten the stock end of their occupation, and are apt to sacrifice good breeding stock which at a later date must necessarily again be built up. It is not difficult to get out of the cattle business, but one confronts a more difficult proposition when endeavoring to get back into it again. The cattle market is firm not only in Western Canada, but the world over, and little need we fear of a slumping market for some time.

Canada, as I have pointed out, has a great outlook for a future market. With this in mind we should co-operate in securing the best market conditions possible, and plan to increase our production of livestock, remembering always that livestock is the only true basis of economic and profitable farming.

GEORGE C. HAY, Agr., '16.

The Milk Supply for the Cheese Factory.



HERE is a general tendency on the part of the farmers of Quebec (and elsewhere throughout Canada) to incorporate in their farm practice the keeping of more livestock. This change in farm practice has been adopted as being the most natural and rational treatment for the state of soil impoverishment that has followed the

continued growing and selling off the farm of grain and hay crops. Only by the return of the crops to the soil through the agency of livestock can this depletion of plant-food in the soil be satisfactorily rectified, and for the Quebec farmer one of the most profitable branches of the livestock industry is that of dairying.

There are in the Province of Quebec

many districts which are admirably suited to dairying as far as natural conditions and adaptability of crops is concerned, but which are too far removed from our large city markets to make the shipping of milk a profitable industry. In such districts the cheese factory finds its habitat. Cheese is a comparatively good shipper, and may be kept under cold storage conditions for a considerable period of time without losing its value as a food. This, together with its

$1\frac{1}{2}c.$ is appropriated by the cheese company to cover the cost of manufacture and pay profits to shareholder; $1c.-1\frac{1}{2}c.$ is paid for the delivery of the milk at the factory ($10c.-15c.$ per cwt. milk); the remainder goes to the farmer. Out of his share the farmer must first deduct enough to pay for feed, labour, and interest on capital invested in stock and buildings; if any remains after this it goes to make his profits, so the farmer's actual profit is contained in the



Sophomores at work in Bacteriology Laboratory.

small bulk; and consequent cheap transportation, make its manufacture admirably suited to districts somewhat removed from a market.

In order that the manufacture of cheese may yield the farmer the most satisfactory returns for his milk, it is necessary that the cheese be sold for the highest possible price. Let us note briefly the division of the money realized from the sale of each pound of cheese:

last cent or fraction of a cent obtained for the pound of cheese. This being the case, the only way for the farmer to make dairying a profitable business is by having his cheesemaker turn out a fine grade of cheese—one that will command a high price on the market, and if the cheesemaker is to turn out a high grade of cheese, the farmer must supply him with a high grade of milk.

High grade milk from the cheesemaker's standpoint is that having a low bacterial content, and an absence of organisms which produce gassy fermentations. Gassy fermentations in milk have been said to be the bane of the cheesemaker's existence. They cause openness in texture, bleaching of colour, and a marked deterioration in flavour. They are responsible for the greater proportion of the cut in the price of cheese on the market, and are very difficult to control. These gassy fermentations are caused by the growth in the milk of organisms belonging to either the *B. Coli* group or to the *B. Lactis acrogenes* group. Both these organisms come from manure, and are always associated with filth. (Gassy fermentations may be caused by the *Torula*—a lactose fermenting yeast, but this is not so common.) So if we can prevent these organisms getting into the milk and growing there we have made a great stride indeed toward the production of high grade cheese.

The farmer can largely prevent the contamination of milk by these undesirable organisms by taking certain general precautions in the care of the milk:—

1. *Avoid contamination at milking.*—The flank and udder of the cow should be wiped down with a damp cloth to prevent dust and bits of manure falling into the milk. The visible dirt is of small importance compared with the enormous numbers of *B. Coli* usually present on bits of manure, etc. The milker's hands should be washed before milking begins, and dry milking should

always be practiced—in wet milking, dirt drips from the fingers into the milk. Dusty garments should be covered with a large clean apron or other garment.

2. *Cool the milk as soon as possible.*—Temperature has an enormous effect on the control of bacterial growth. Ice is cheap, and where a good quality of milk is to be produced, ice is absolutely indispensable.

3. *Have all utensils clean.*—Wash out all utensils—buckets, strainer, factory can, etc.—with tepid water, and finish, not by rinsing with cold water, but by sterilizing either with live steam or with *boiling* water. This is especially important when whey is returned in the factory can. After utensils are washed put them to drain in a milkhouse, etc., where they will be protected from dust.

4. *Have a suitably located milkstand.*—Have the milkstand as far removed as possible from manure, animals and dusty roads. A combined milkstand and icehouse gives excellent results.

These suggestions are not elaborate, such as one would make for a dairy specialist, but are all easily applicable by the average farmer. If they are acted upon, they will, without much additional expense, immeasurably lower the bacterial content, raise the quality, and consequently increase the ultimate price paid for the milk which the farmer supplies to the cheese factory.

S. R. N. HODGINS, '17.



The Army Horse and his Requirements.



N the science of war, as in peace, every effort has been made to supplant the horse by mechanical power. During this present struggle, in which all the great nations of Europe are concerned, they have all endeavoured to replace the horse by motor power, and are therefore using large numbers of tractors for conveying guns, transports, etc. Notwithstanding the use of various motor powers, the horse is today in greater demand than in any time during history.

Germany is offering \$600 to \$800 for army horses, while Great Britain and France have to obtain a large percentage of their supply in Canada, United States and elsewhere.

All horses for active service must be sound, the idea that any ordinary horse will do being a sad mistake, for the military authorities take no chances of a horse failing at a critical moment, owing to a previous blemish. The best ages for army purposes are from four to twelve years. The favourite colours are bay, brown and black, but all colours except greys are taken.

The types of horses required for army service are cavalry, artillery and transport or draft horses.

Horses suitable for cavalry purposes should stand 15 to 15.3 hands and weight 950 to 1150 pounds. The most desirable type should resemble the lighter thoroughbred; they should possess sureness of foot and ease of carriage to the rider, with good depth, fairly short legs, deep sloping shoulders, short back, well ribbed, strong loins, well muscled, especially in hindquarters, and a long slender neck. The limbs are important, and should show quality, and plenty of good bone, with sloping pasterns, and

feet of good size and quality. In action, when walking, trotting or galloping, their feet should be carried squarely forward in a straight line, never brushing at the joints. Horses of this type will command approximately two hundred dollars.

The artillery horse should stand 15.2 to 16 hands, weighing 1100 to 1300 pounds, and should be large, powerful and active, suitable for the gun waggon. The most desirable artillery horse may be classed as the carriage or heavy hunter type, while possessing a combination saddle and harness type. The artillery horse is much more strongly built than the cavalry horse, but should possess all the good qualities of the cavalry horse. Action is important, and similar requirements are called for as in the cavalry horse. Horses of this type will command slightly higher prices than the cavalry horse.

The requirements for the transportation horses are quite similar to those previously stated, except that they are much heavier and more massively built, weighing from 1250 to 1450 pounds. This class includes the general purpose and agricultural types, and commands a price similar to the artillery horse.

This is a condensed description of the ideal horses for army requirements, but it does not follow that all the horses bought for army service measure up to this standard, for, in fact, the majority fall considerably below it. The average price being paid for army horses in Canada is approximately \$175.

The life of a cavalry horse in the present war is estimated at seven days, while that of the artillery horse is thirty days—this going to show that all the available army horses will be required during the present war.

In Canada there are approximately 3,000,000 horses, of which the estimated number suitable for army purposes is about 50,000, of which 17,000 have been bought for the first and second contingents.

Two remount commissioners have been appointed in Canada: Sir Adam Beck has charge of the buying in the East, and Col. A. D. McRae, of Vancouver, has charge of the four Western provinces. The horses are bought by a purchasing officer and a veterinarian at various local districts and are shipped in carloads to the shipping centres, which are frequently at the Provincial Exhibition Grounds, where the live stock barns are utilized for stables.

The horses, after being unloaded at the shipping centres, are put into their respective stables and tagged, this tag containing the number of the stable in which the horses are kept, where bought and name of buyer (*in case of any dispute*). The horses are then trimmed on the legs, and the forelock and ears are clipped, which greatly improves their appearance. All horses have to be saddle broken, and with the western bronchos it is no easy task, for they will buck and plunge in order to try to throw the riders; yet when broken they make exceptionally good saddle horses, with plenty

of stamina. Shortly before shipping they are branded with the government brand.

With regard to the care of the horses everything is done in a very systematic manner. In the morning, about six o'clock, the horses are watered and fed hay and grain. The amount of hay they receive is just what they will clean up nicely. The grain ration consists of a mixture of two parts oats and one part bran, and they are fed approximately three or four quarts per feed. After feeding, the stables are cleaned out and all horses are groomed, while at eleven they are watered and fed similar to the morning ration. After dinner they are let out for exercise and the stables are again cleaned and bedded. At four o'clock the horses are stabled, watered and fed as at noon. It is surprising the marked improvement in condition that will take place in a comparatively short time, on what may be called fairly light feeding.

It can be seen from what has been written that the demand for horses is quite keen and that there is bound to be a good market for all horses which can measure up to the standards which have been described above. It is also likely that this market will last for a considerable time and at similar prices.

J. H. Ross.

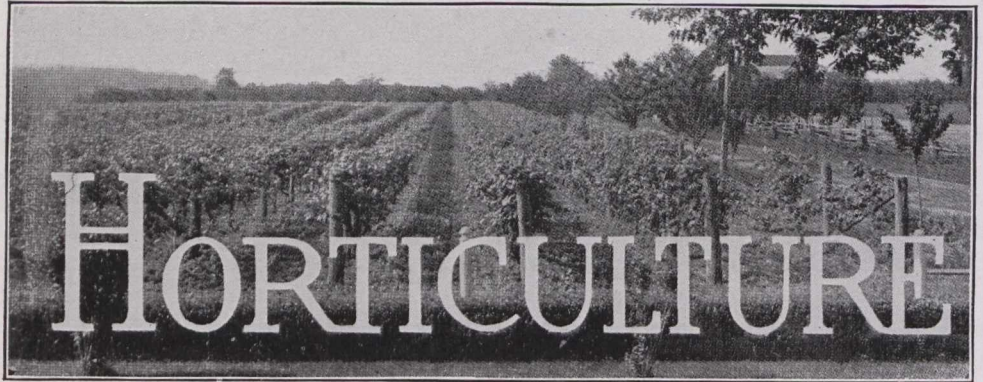
The Shower.

All day the thirsty land has waited
The bursting of the clouds that
lower,
Until at last it comes, belated—
The Shower.

On bush and tree, the leaves hang low;
The birds close to the ground do cower;
It brings the fresh young winds that
blow—
The Shower.

The birds soar high in joyous flight;
Each tiny bud blooms into flower;
All Nature vanquished by its might—
The Shower.

E. M. B., T., '15



When I Go Fruit Farming.

By Mr. F. M. Clement, B.S.A., Vineland Experimental Station, Ont.



It is to be regretted that so many good business men have purchased land for fruit and vegetable farming without first inquiring into certain factors that lead to success in the venture. Emphasis in late years has been laid almost entirely on pruning, fertilizing, spraying, cultivation and thinning. Picking, packing, transportation, distribution and sale are coming in for some study and discussion at present, but the basic factors or the factors that are the foundations of success are still being left in the background. Location, situation, site, soil and variety make up the rock foundations of the industry, but so many new men and some older ones also have neglected them that it seems imperative at this time that some mention be made of them.

Fruit-growing should present no illusions. Every industry and every business and every profession is overcrowded. The old saying, "the weakest goes to the wall," is still as applicable to

the fruit business as it is to any other business. Fruit-growing is not something to be undertaken for a year's time and then dropped the same as you would mine a gold mine to the final, but rather a long term investment that yields profitable returns only to the industrious, returns in proportion to the amount of energy and business principle applied.

The location of the enterprise may be in any of the provinces, but it is essential that the prospective grower have in mind a definite plan of what he wishes to undertake. If Gravenstein is to be the apple grown, the Province of Nova Scotia is the proper place to locate; if McIntosh or the Fameuse is the choice, the St. Lawrence Valley is likely to give the highest quality fruit; if the Northern Spy and the Baldwin are the choice, the Province of Ontario would be the place to locate. On the other hand, if the object in view is a box trade in the Newton Pippin, Jonathan, or Spitzenberg, British Columbia offers the best inducements. No one province has the

best to offer for all varieties, but each province produces a variety that is superior to the same variety in any other of the commercial fruit provinces.

The situation is the choice of farm that is intended to be used in the undertaking. A few points are necessarily essential. A heavy load could be drawn much more quickly over a stone road than a clay or sand road. The distance from the station is the deciding factor of quick delivery during the picking season. The fact that one's neighbors are interested in the same fruits that he is, will assist in making more uniform and steady the market prices. Fruit can be marketed more profitably in car lots than in small shipments. A large quantity of similar products in a district is necessary before the success of a co-operative association is assured. Unless these facts are considered, a man is working alone and cannot hope to meet with the best success unless he is catering only to a local market in a small way.

The site of the planting is of next importance. Late spring frosts and heavy winds must be guarded against. For early fruit of the highest color, the sunshine and natural warmth of the atmosphere must be used to the greatest extent. Fungus diseases and insect pests are the fruitgrower's greatest enemies. Their natural enemies are sunlight and air circulation. The site must take these facts into consideration.

The question of soil is not so important as the question of drainage of the soil. As far as the soil factor alone is concerned the drainage is the limiting consideration that must be reckoned with in the planting of any fruit. We say cherries are adapted to a warm, dry, sand soil,

meaning only that surplus water in the soil is detrimental to the welfare of the tree. We say also that the plum will withstand more water than the cherry. At the same time it will not withstand surplus water in the soil or surface water. The roots of none of our fruit trees will permeate a damp clay subsoil, they will spread out just beneath the surface. On the other hand, if the soil is loose and open they go to great depths. Almost any soil can be adapted to our most particular fruits by thorough cultivation and drainage.

Variety is of greater importance to-day than it was a few years ago. The consuming public has learned that quality is to be preferred. At present an apple of the highest color and best quality is in greatest demand. In selecting our fruits for dessert purposes, we judge by the eye and by the taste or flavor almost entirely, but, strange to say, though the apple is to be eaten the final decision is made by the eye. The bright color fruit is almost invariably the choice. The fashion at present is for the red apple and is likely to remain so for some time. Quality may be defined as crispness and flavor; at any rate these two factors are included in quality. The question is, what varieties have the necessary color and the necessary quality. Those mentioned in a former paragraph are best adapted to their respective provinces.

Lastly, the whole enterprise depends on the business ability of the grower. If he loves his trees and takes more than a passing interest in them, he is one step farther on the road to success.

The personal factor is perhaps the deciding one, for on it depends the foresight and energy that is put into the business.

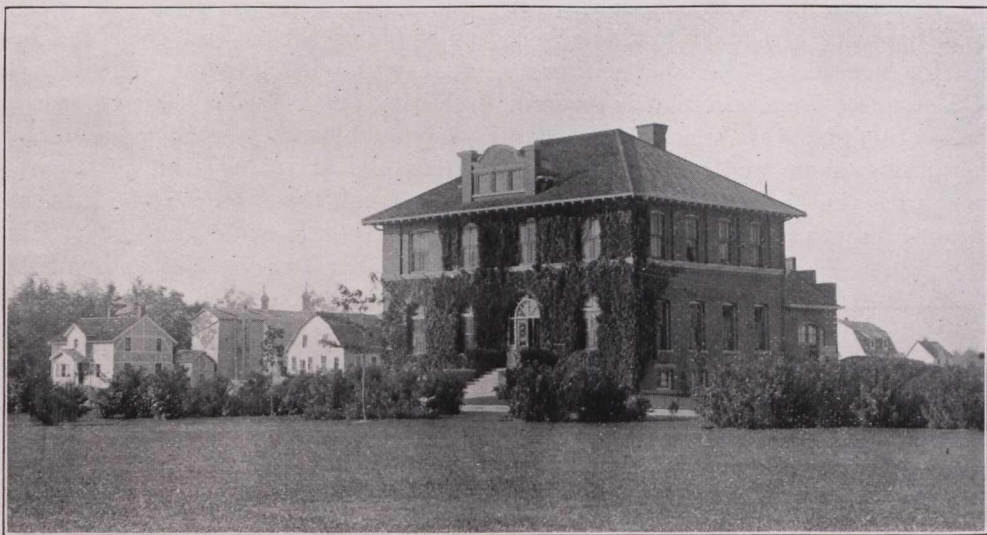
A Summer in the Garden of Ontario.



THE Garden of Ontario is beautifully situated on the southern shores of Lake Ontario, extending from St. Catharines on the east to Hamilton on the west, running inland about two miles. Perhaps you would recognize the garden better if I speak of it as the Niagara Fruit District.

There are many points of interest throughout the district, but my chief interest is directed to the Vineland

To give you an idea of the great amount of work carried on, there are under test 147 varieties of peaches; 150 varieties of apples; 124 varieties of pears; 130 varieties of plums; 55 varieties of cherries; 90 varieties of strawberries, besides other fruits and some vegetables. There are also spraying, pruning, fertilizer, thinning and cultivation tests well under way. The seed selection work is progressing rapidly, while the plant-breeding work is of the greatest import-



The Administration Building, Experimental Station, Vineland, Ont.

Experimental Farm, where I spent most of my summer. This ideal spot could be likened to the summer house of the Garden, as it is here that the fruit-growers of the Province may come to replenish their knowledge of fruit-growing. It is like a large laboratory, equipped and maintained to aid the fruitgrowers of the Province to study their problems relative to industry; to find out better methods; and to improve varieties.

ance. This past year they had from hand pollinations more than 20,000 individuals in the breeding plot. This work is carried on under the judicious supervision of Mr. F. M. Clement, director of the Experimental Station, and is made interesting and instructive to those working under him.

You often hear it said, "experience is the best teacher," and it is fully justifiable in this case. Not only was

my summer's work on the Experimental Farm of great value to me, but the opportunity of observing how things were done throughout the district on a commercial scale gave me ideas worth carrying away. Such was the case in visits taken to nursery firms, such as E. D. Smith's at Winona, and Brown Brothers' nurseries at Fonthill. Also the inspection of cold storage plants at St. Catharines and Grimsby, as well as the cannery at Vineland Station. Our final visit was to the Toronto Fair,

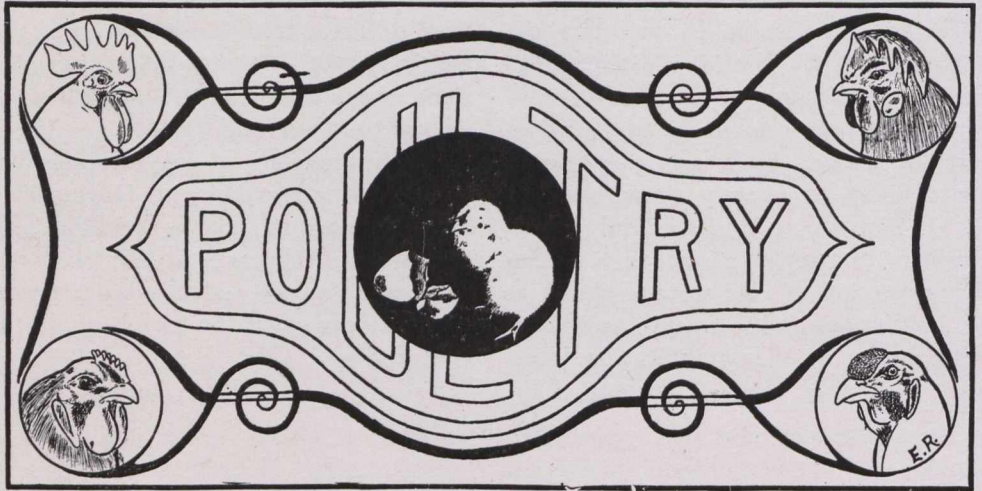
where we came in contact with men from different counties, who were in the fruit business. We were able to examine their products in comparison with what we had been working with.

My impressions on leaving Vineland were, that men taking up Horticulture cannot make a mistake in spending some time in the Niagara fruit belt, as it has a splendid location and affords a practical acquaintance with the problems of the fruitgrower.

A. E. HYNDMAN, '16.



Students of the Short Course in Horticulture.



Success in Turkeys.



WHILE there is general admiration for the turkey, and a desire to raise them, there seems to be, especially among those who have never handled them, an impression that turkeys are very hard to raise, expensive to keep, and difficult to manage. These false impressions seem to be present in nearly every farmhouse, and the reason can easily be explained. Many people think the turkey to be the equal of the farmyard fowl in domestic habits, which is far from being the case. There is little doubt that this is the big downfall which many a beginner must encounter, some to become completely discouraged, others to waste much time, energy and capital before they find the successful cord. While space will not permit of a thorough treatment of this subject, the writer wishes to deal with some of the outstanding principles which lead to success with turkeys.

As I have already intimated, the outstanding principles only will be

discussed, and perhaps the leading principle in turkey raising is that they cannot be successfully reared in confinement. The turkey is not far removed from the wild state, as can be seen by the roaming habit which they possess, and to make a success of any business we must adhere as closely as possible to the laws which govern that business, and turkey raising as a business is no exception to the rule. The first thing, then, that is necessary for turkey raising is wide range. Perhaps the next important point to be considered is that of soil. The soil best adapted to turkey raising, like all other poultry, should be light and porous. Gravel or sandy soil is best, and while heavy or clay soils are not so good, because the locality is naturally on a lower level and more damp, still good flocks of turkeys can be reared on such soils. The thing to avoid in such a choice is natural dampness. Having satisfied yourself that you have the right kind of soil, together with sufficient range, the next question is that of stock. Breeders should be well matured, strong

and vigorous. The best breeders, in females, are two or three year old birds. The male, if young, should be large and well developed, and in no case should he be more than three years old. Turkey breeders should be careful to keep their turkeys away from other fowl. Never allow them to roost with hens or they will become infested with vermin. The best turkey house is an open barn or shed which has the temperature of the weather outside. Give the turkeys plenty of freedom during the winter months.

The laying season should commence, in this province, about April tenth. Care should be taken in feeding during the winter not to have the birds too fat. Try to have the eggs laid in a barn or shed where turkeys can brood when through laying. Give each female 15 to 18 eggs, depending on her ability to cover them, and give the balance, if any, to an ordinary hen and allow her to hatch them for the turkey. Care must be taken to have the setting birds free from vermin. When the young are hatched return them to the mother turkey and remove her to a coop placed in an orchard or grass plot. This coop should be of sufficient size for the brood, say three feet square, without a floor, and should be moved daily. By moving the coop daily the birds have fresh quarters each night. This is copying nature as nearly as possible, and still providing protection for the poults. Confine the mother turkey for five to eight days and allow the poults to take range around the coop during that period. At the end of that period give the flock their freedom. The young

will be strong and able to follow the mother, but care should be taken not to allow them to wander too far for the first few days, always having them returned to the coop each evening. They should be held in the morning until the dew has dried off considerably.

The feeding of young poults should receive careful attention. Feed sparingly at all times and never offer any food that has been mixed since the previous feeding. All feed should be sweet, palatable and nutritious. The first few feeds may consist of hard-boiled eggs, finely chopped, mixed with bread crumbs. Gradually add some moistened shorts and decrease the egg and bread. Feed four times daily while the birds are confined and twice daily after they have their freedom. When turkeys are on range conditions they have very little appetite for concentrates, feeding largely on insects and worms. Care should be taken not to overfeed at any time, as more young turkeys are killed by overfeeding than by under-feeding. Perhaps the best feed to fatten turkeys for market in the autumn is corn, either ground and mixed with oat chop and bran, or fed whole. Never confine turkeys while fattening, and always starve 24 hours before killing. Then follows:—

A turkey boiled
Is a turkey spoiled.
A turkey roast
Is a nation's boast.
But a turkey braized
The Lord be praised.

A. G. TAYLOR, Agr., '15.



MACDONALD COLLEGE EXTENSION WORK FOR RURAL SCHOOLS

Reform of Rural Education in Quebec.



IN a former article an account was given of the experiment in rural education which was made in the little village school at Ednam in Scotland. This successful experiment has its lessons for us in our own Province.

There is something decidedly wrong with a system of education which does not enable the young both to develop their talents and also to fit themselves for life in their own community. When so many people leave the country to work in the city, when rural depopulation is becoming so serious as to engage the earnest attention of statesmen, every factor in this movement towards the city must come under searching criticism. The school, and the training it gives, must likewise submit to investigation, and we are bound to admit that it falls short of its ideal purpose.

It is true that several factors in the school problem are beyond the educators' power to some extent. For instance, greater efficiency would be reached if there were fewer tiny schools in each municipality with an enrolment of nine pupils; if there were more consolidated schools, with larger staff, better equip-

ment and better paid teachers. But it is also true that some factors are in the hands of the educational authorities and the teachers.

The School Law states that agriculture must be taught in the schools of all rural municipalities. This regulation, however, is "more honoured in the breach than the observance." Indeed, this is not to be wondered at when one considers the large number of untrained teachers employed in rural districts. But even trained teachers are known to ignore the regulation. This condition, however, has to cease and will soon be stopped. For the educational authorities are to lay stress on Nature Study and elementary agriculture both in written and oral examinations in future. The school inspectors are to attend a short course at the College in May in order to be able to examine pupils in this subject thoroughly, and teachers who are unable to satisfy the requirements will be expected to qualify themselves properly.

The needs of the community must always be taken into consideration, when a course of study is being framed. We are not surprised, therefore, when we are told that cooking and elementary

navigation are taught to boys in sea-board towns in Scotland, where fishing is the chief local industry.

Then, again, text books seem to have been written with the city pupil in view. For instance, arithmetic textbooks may be said to be immoral in that "they are filled with bad examples." City business examples formed the basis of the exercises and even then antiquated business forms and methods remained in these books. This condition of affairs will be remedied, however, by the revision of textbooks now taking place, and teachers would do well to read, learn, and inwardly digest such books as Calfee's "Rural Arithmetic" and Hatch and Haselwood's "Elementary Agriculture."

MORE PRACTICAL CURRICULUM NEEDED.

It is not the work of the teacher to unfit a boy for country life, nor for town life either for that matter, for the same principle applies to both town and country. What is needed is that fullest use, both in country and in town, should be made of the child's experience and environment. Subjects should not be taught in a bookish, academic and unpractical manner; and there should be as large an amount of practical work in workshop, garden, kitchen and dairy, as circumstances may permit, with which the ordinary school subjects can be knit up. Any individuality and initiative on the part of the teacher in this direction should be encouraged. Then and only then will schooling help young people to take up intelligently and with goodwill any skilled manual

employment and to feel an interest in country pursuits which the present type of education tends to destroy.

DIFFICULTIES IN THE PATH.

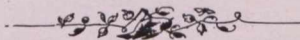
There are, of course, serious obstacles preventing a satisfactory introduction of such a course of manual work. Among them are the following:—

1. The difficulty of providing accommodation.
2. The cost of teaching and supplies.
3. The supreme difficulty of finding trained teachers.

These difficulties all resolve themselves into a problem of dollars and cents. Government grants are very small compared with the sum raised locally, whereas, in Scotland, government grants cover two-thirds of the local cost leaving only one-third to be met by taxation. In Quebec the farmers feel the burden of taxation simply because they pay their school taxes directly, and it is a notorious fact that indirect taxes are not so objectionable to taxpayers as direct taxes. There is also a strong inclination to employ untrained teachers because they are cheap and an equally strong dislike to offer a salary large enough to attract a trained teacher. If salaries were sufficiently attractive there would be no difficulty in securing a teacher with proper training.

The solution lies entirely in larger government grants when additional demands are made on the school, and greater encouragement on the part of school trustees or commissioners.

SINCLAIR LAIRD.



A Summer School of Nature-Study and Elementary Agriculture.

By Dr. D. W. Hamilton, Head of Nature-Study Department.

PLANS are being made for holding at Macdonald College in August a Summer School for the teaching of Nature-Study and Elementary Agriculture. It is probable that the school will be in session four weeks, opening on Tuesday, August 3rd, and closing on Friday, August 27th. There

opportunity to partially qualify for teaching the new course in Nature Study and Elementary Agriculture authorized for Elementary and Model schools. It is probable that arrangements will be made to pay the traveling expenses of those who attend, and, in addition, a small bonus to help meet the cost of board and living while in



Class "C" School for Teachers in Nature-Study Laboratory. What Does Starch Contain?

will be courses in Nature-Study, Horticulture and Gardening, Plant Life, Animal Life, and in Manual Training and Drawing. In addition, there will be occasional lectures in other subjects connected with school work.

Primarily the object of the school is to give rural school teachers, who have not attended Macdonald College,

attendance at the school. Those who qualify, and later do good Nature-Study work in their schools may receive from the Government an annual bonus for such work. This is the practice in other provinces.

We are at the beginning of a great educational awakening in our rural districts, and the object of the Summer

School is to help those who are willing to help themselves to do better work along lines which make for greater efficiency on the part of pupils in rural schools, and better qualification for successfully solving the problems of rural life. Macdonald College, with its beautiful surroundings, magnificent buildings, fine laboratories and equipment, its fields, orchards, and gardens, offers every attraction, particularly during the month of August when Nature is most prodigal, to those desirous of increasing their physical, mental and professional qualifications for teaching work.

Further information concerning the Summer School will be published later.

OUTLINES OF COURSES

Course 1.—Nature-Study.

1. Aims of Nature-Study teaching.
2. Methods of teaching Nature-Study.
3. Correlation of Nature-Study with other subjects.
4. Nature-Study lesson plans.
5. The Nature-Study course,—explanation of contents, how to teach the lessons suggested, and information on the different topics.
6. Nature-Study calendars and records.
7. Birds—their recognition, habits, uses, and how to attract them.
8. Trees—their identification, habits, and how to care for them.
9. Wild flowers—their identification, uses, habitat, collection, and preservation.
10. Common rocks, materials and soils—their recognition, uses and distribution.

Field, garden and laboratory work with plants, birds, trees, minerals and other objects.

Course 2.—Horticulture and Gardening.

1. The propagation and requirements of common plants.
2. The making, rooting and potting of cuttings.
3. The care of house plants.
4. The making and care of window gardens.
5. The best soils and fertilizers for plants.
6. The potting and forcing of bulbs.
7. The planning, planting and care of home and school gardens.
8. The best varieties of garden flowers and vegetables.
9. The planting and care of trees and shrubs.
10. The ornamentation of home and school grounds.

Practical work in the garden and laboratory.

Course 3.—Plant Life.

1. The structure and germination of seeds.
2. The general structure and forms of roots, stems and leaves.
3. The work of roots, stems and leaves.
4. The structure and functions of flowers.
5. How plants prepare for winter.
6. The dispersal of seeds and fruits.
7. Leguminous plants in relation to agriculture.
8. Ferns and other flowerless plants.
9. Some common plant diseases.
10. Bacteria and their ways.

Practical work in the field, garden and laboratory.

Course 4.—Animal Life.

1. The different stages in the life of an insect.
2. The general structure of insects.

3. The principal groups of insects.
4. Some beneficial insects.
5. Some insects injurious to plants.
6. The relation of insects to diseases.
7. The natural enemies of insects.
8. Artificial control of insects.
9. Native fur-bearing animals.
10. Toads, frogs and other animals.

Practical work in the field, orchard, garden and laboratory.

Course 5.—Manual Training

1. The Theory of Elementary Hand-work.
2. The relation of Elementary Hand-work to the Rural School.
3. Materials and equipment.
4. Modelling in clay and plasticine.
5. Paper cutting, tearing and folding.
6. Simple designs and their application.
7. Constructive work in paper and thin cardboard.

8. Weaving in paper and raffia.
9. Simple basketry.
10. Advanced cardboard construction and simple bookbinding.

Course 6.—Drawing.

1. Correlation of Drawing with Nature-Study.
2. A Course in Nature Drawing.
3. A Course in design based on Nature Drawing.
4. Methods of teaching Nature Drawing.
5. Methods of teaching elementary design.
6. Materials and media.
7. Brush drawing in monochrome and natural colours.
8. Nature calendars and records.
9. Lettering.
10. Stencilling and wood block printing.

D. W. H.



Modern Child-Literature.

By J. L. Dashwood, B.A.



THE general and rapid advance of educational thought during the last two centuries has not only revolutionized school methods and curricula everywhere, but has made itself felt even in the remotest regions of the Fine Arts. Side by side with our books of psychology and logic, we now have a multitude of child-pictures, child-symphonies, and child-novels. In the present paper a few outstanding examples of this last class will be suggested, both as the possible nucleus of a teachers' library and as a "footnote" to the many voluminous and abstract treatises with which the modern pedagogue is accustomed to equip himself for his profession. The value of such a collection lies in the fact that by providing the teacher with many and accurate reproductions of real children, it helps him from time to time to escape from the prevalent mists of abstruse theorizing into the cleaner and colder atmosphere of every-day life.

Our own country was comparatively late in introducing children to its literature. English writers, as a race, are the most servile in the world, and as they could find, neither in antiquity nor in the works of their own ancestors, any justification for this new feature, they long lacked sufficient courage to make the innovation. The combined works of Shakespeare, Milton and Chaucer provide us with a sum total of two boys, one of whom (Shakespeare's Maximilian) dies after saying a few words, and the other of whom (Chaucer's Hugh of Lincoln) says a few words after dying (from a trunkless head). With such models before them, it is little matter for

wonder that early novelists of the type of Jane Austen and the Brontes, should be only able to furnish us with vague imitations of the children of foreign countries.

Our first great boy-novelist was George Meredith. Meredith knew with startling precision every trait and every type of the modern boy character. "The Ordeal of Richard Feverel," "The Egoist" and "Lord Ormont and his Aminta," as a trio of child-studies have no rivals in the whole range of literature. Meredith appreciated, in a way which would have shocked the saintly and sentimental boys of his predecessors, the artistic value of the two main functions of boyhood: mischief and appetite. It is here that he shows his marked superiority to Dickens. The plump rogue of "The Egoist" is an eloquent reprimand to the novelist of the *Pickwick Papers*, whose "Fat Boy" is a disgrace to its author and a caricature of its subject.

But, of course, neither Dickens nor Thackeray knew anything about children. Far greater than either, in this respect, are writers like Hardy, Wells, Barrie and Jerome. This last writer in "Paul Kever" has attempted, with questionable success, a psychological analysis of childhood, after the manner of contemporary continental fiction. Barrie, in his *Peter Pan* extravaganzas (the *Little White Bird*, etc.), has attempted to recapture some flavour of the child imagination. In "Sentimental Tommy" and "Tommy and Grizel" he has given us two exquisite, if not very realistic, pictures of our subject. The great dreamland of infancy which Barrie has left untouched has found its most notable pioneers in Charles Dodgson of

the "Alice" stories, and Edward Lear of the "Nonsense Books." In more realistic fields Mr. H. G. Wells is still supreme. "Tono-Bungay" and "Kipps" are veritable banks of child-wealth, yielding to no similar works in either accuracy or completeness. If Wells, however, is above all his rivals in scientific observation, in delicacy of treatment he is far below the Thomas Hardy of the Wessex Novels. The novels and short stories of this last of the Victorian giants complete our scheme by adding the tragic relief which every great subject demands, and ultimately attains.

In this connection two great modern poets should be mentioned. Coventry Patmore has rendered, with the characteristic delicacy of the caste he represented, all those half-lights and effusions which colour the genteel childhood of our English country families. Francis Thompson, a poet of both greater insight and wider range, goes out after a more permanent and passionate expression of childhood. A good introduction to his more obscure work is to be found in the "Sister Songs," which he addresses to the two child-sisters of Mrs. Meynell, the poetess.

More important, perhaps, from the teachers' point of view are the works of modern French and German writers. It is only possible here to mention a few prominent works, all of which can be obtained in cheap translations.

In France we have the early pastoral children of Chateaubriand and Bernardin de Saint-Pierre (as, for example, in "Paul et Virginie"). These are followed by the somewhat similar children of Georges Sand (as in "La Mare au Diable"), delightful country creatures, whose doubtful reality is more than atoned for by their poetic attraction. Georges Sand, in turn, has undoubtedly influenced the child portraits of René

Bazin (as in "La Terre qui Meurt"), a writer whose fame will one day eclipse that of all his contemporaries. An author of a very different type is Alphonse Daudet. Novels, like "Jack" and "Le Petit Chose," together with short stories like "La Dernière Classe" (in the "Letters de mon Moulin"), will sufficiently illustrate the combined humour and pathos of this French Dickens. Romain Rolland, in the first three volumes of the yet unfinished "Jean Christophe," has followed with "monumental minuteness" the life of a young artist from infancy to adolescence. Finally, we have the inexhaustible Anatole France, whose work justifies and completes everything that his predecessors have attempted. Not until one has read and pondered "Le Livre de Mon Ami" can one pretend to have mastered or even fringed the mystery of childhood.

The Germans have turned out a mass of mediocre stuff upon this as upon every other subject. The only epoch-making child story of the century has been the "Frau Sorge" of Sudermann. Freytag, in the first volume of his "Soll und Haben," has some excellent things to tell us about adult instincts in children; but most of what his fellow-writers say has been said before, and said better, in France. It should be noted that one of the finest extant descriptions of a schoolboy fight is to be found in Von Wildenbruch's "Das edle Blut," probably a matter of reminiscent interest to most of us.

The twenty or thirty books mentioned here have no claim to be either exhaustive or even representative. They have, however, the value of indicating what has been done in child-study, and outside purely educational circles, of stimulating in unscientific minds an interest in the most fascinating branch of human research.

Pictures in Rural Schools.

By Miss Winnifred Thomson, Instructor in Drawing, School for Teachers.



THE days of the bare or map-hung school-room wall, with its attendant dullness, has given place to a better order of things. Even in rural districts, where little money can be spared, it is now possible to have the rooms well decorated. Pleasant-coloured paints and colour-washes are as cheap as ugly ones, and pictures, reproductions of masterpieces, can be had for nominal sums.

Before considering the individual pictures it is well to think of the wall space in relation to those pictures. Walls are unfortunately a necessity, but there is no reason why we should hug our chains by making the walls more noticeable. Light tones and retiring colours will be pleasanter in themselves and form infinitely better backgrounds to children and pictures than dark reds and hot browns; in north rooms warm creams, yellows and golden browns give cheerfulness and light.

In regard to the framing of pictures for the classroom, simplicity, good construction and cheapness must be considered. Plain wooden frames, stained to match the woodwork of the room, can be obtained very cheaply, especially if un moulded pine be used; 15c. per foot, including glass and labour, is a liberal estimate. A picture 21" x 15" can be framed for 65c. in wood 2" wide.

Oak or walnut mouldings cost from 25c. per foot upwards. The pictures themselves must be large enough to be seen from all parts of the room;

many firms publish reproductions especially for school decoration, such are the Perry Picture Co., Boston, Mass., whose 5c. pictures measure 10" x 12", and the School Arts Publishing Co., Boston, Mass. Names of other firms may be obtained by reference to the catalogue of "Exhibition of Decorative Pictures," published by the Newark Free Library, 1903.

Plaster casts are a form of decoration which might be used much more freely in school decoration. Their solidity and realism appeal to children, and educationally they may be made valuable in realization of form. Casts in the "round" should be placed at a safe height on shelves or individual small brackets of simple shape, while reliefs may be hung like pictures. Della Robbia's "Bambinos," from the Foundling Hospital, Florence, are great favorites with children, or Verrochio's "Cherub with Dolphin."

In the primary grades, the subject of the pictures plays a more important part than with older students, whose technical interests may be aroused in the conception and rendering of the masterpiece. For children the picture must tell a definite story and one which they can readily understand. Such themes as Mother Love, in the great Madonnas, animal tales in Landseer's works, famous children like Vandyke's "Baby Stuart," simple domestic interiors by modern Dutchmen, all appeal strongly and are suitable to the junior grades.

Plant Pathology as a Profession.

By F. Lisle Drayton, '14, Assistant Plant Pathologist, C.E.F.



EVERYONE who comes into contact with plants, whether he grows them as a means of earning his living or for purposes of pleasure and beautification, or whether he merely happens to see them in his daily travels, cannot help noticing that plants are subject to certain diseases just as much as men and animals.

When we think of a healthy and vigorous plant, we immediately think of one that is well developed, with dark green leaves and giving us a satisfactory amount of bloom or yield. But how often do we see the reverse: plants in feeble health, the leaves few and of a sickly colour, and flowers—poor in yield or none at all. There is evidently something wrong.

The causes which bring about these abnormal appearances are many; so many, in fact, that their study is mainly divided into two distinct biological sciences, viz.: *Entomology*, when the causal agency is an insect or some minute form of animal life, and *Phytopathology* or *Plant Pathology*, when the diseased condition is brought about either by the parasitic growth or some microscopic form of plant life, such as a fungus or bacterium, or when the cause is obviously constitutional—physiological, as we term it.

To impress the importance of this subject, I might refer you to many estimates which have been made of the actual pecuniary loss brought about by one or more diseases. These figures usually amount to an alarming sum of money, when the loss of a whole country is considered. Instead of quoting figures

just follow me in your mind's eye around the farm and let us see in how many different ways we are paying a heavy toll to these little foes of plant life, which are so persistently injurious.

The grain fields, showing heads which, instead of having grain in them, are a mass of smutty powder; or the plants looking yellow and unhealthy with poorly developed heads, caused by "rust," with plain symptoms on leaves and stems.

The orchard, with parts of the trees looking fire-swept, caused by the specific and very destructive disease, "Fire Blight," the immature apples dropping from the trees and the remaining ones disfigured and valueless on account of their scabbiness; the peach trees, which cost so much to establish, gradually dying and producing fruit unfit for food, due to the ravages of "Peach Yellows."

Among the alfalfa and clover, we see many plants denuded of their leaves, due to disease, and, in consequence, yielding light hay at a time when hay is so valuable.

The potato field, showing patches in which the plants have failed to grow; and some plants, although quite large, with their leaves curled up, and, on being pulled up, bearing just a few small tubers, instead of a good heavy yield, which makes the crop remunerative.

The root field, containing turnips which appear quite normal on the outside, but the inside composed of a decayed mass.

The vegetable garden, with the tomatoes becoming valueless; the beans with big black lesions on their pods, which extend into the seeds themselves.

The root cellar, with the potatoes exhibiting wet and dry rots, or so scabby that their value will be very much decreased. The turnips and carrots rotting, too, and having to be thrown out at a rate often from 10 to 50% or more.

The shade trees, our greatest asset in hot summers, becoming more and more cankered, the leaves spotted, turning yellow, dropping and the trees finally dying.

The wood pile, with some of the logs absolutely decayed and hollow.

These are a few of the ways in which toll is being paid unconsciously or deliberately to plant diseases, and one can readily understand how these losses, when expressed in dollars and cents, may assume enormous proportions even on a single farm.

There is another aspect of this subject, which is strictly of economical importance, and that is when the presence of any disease in a country or province compels other countries or provinces to impose an embargo on the crop grown in the diseased area, so as to guard their own crops against the ravages of any new disease. This results in considerable loss to hundreds of people, who have formerly enjoyed a large export trade with the country which is imposing the embargo. This is a hard measure to impose upon people who, by a little care and attention, might have realized the importance of keeping their crops free from disease, and by united effort on their part might have averted any such disastrous penalty.

In consideration of these few items brought to your attention, we must realize that plants require a doctor's help and advice just as much as human beings and farm animals do. This is the work of the Plant Pathologist.

The question now is: how can the

Plant Pathologist be instrumental in improving these conditions and reducing the huge annual losses? His work is to become familiar with these microscopic plants which produce disease, so that he not only can recognize them (as one would a tree or shrub) but know their life histories, the way in which they infect their hosts, how they are spread, how they hibernate, their vitality under certain conditions, and the effects of various environmental factors on them. This information must be obtained by careful field and laboratory studies; and once obtained, permits the Plant Pathologist to deduce the necessary precautionary and preventive measures to be adopted for the control of those diseases.

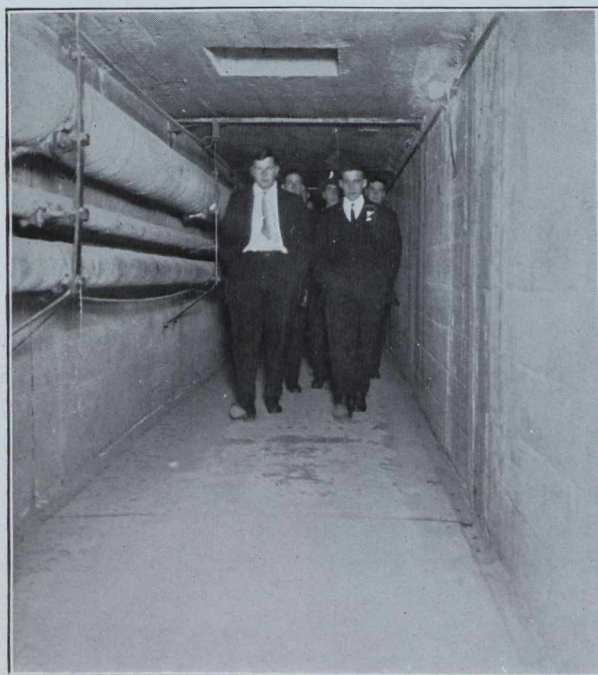
Coupled with the scientific training which the plant pathologist should have to conduct such an investigation, it is most important that he should also have a good knowledge of farm practices and cultural methods, so that these precautionary or preventive measures, which he is going to recommend, will really be practicable under farm conditions.

The scarcity of men in Canada with this training is a disgrace. Let me outline how men are needed now for this work. It is almost impossible for the men working in Ottawa on plant disease investigations to carry on all of them in their central laboratory, where conditions, cultural methods and crops may differ greatly from the locality where the disease originated. For example, it is impossible to grow important crops, such as the pear and peach, at Ottawa, and how then are we to become familiar with, and investigate, their diseases. The obvious solution of the problem is to have field laboratories in different districts where local problems and local conditions can be studied. and where

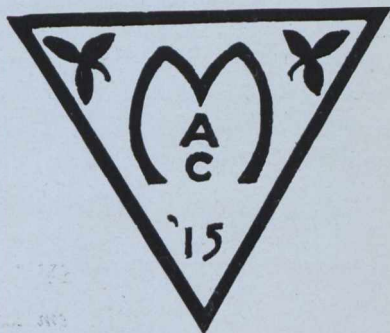
the pathologist in charge becomes, as it were, the consulting plant physician for that section. This is the policy for extension work in the Division of Botany, but here we are checkmated, because it is not possible at present to obtain suitable men for these positions.

The average student at an agricultural college will contend that he is a practical man and takes no interest in a subject which at first sight appears

to be one of scientific importance only, but which I have tried to show is intimately connected with production; and surely any work which has increased production as the end in view must be of interest to the practical man. This work is far more interesting than many branches of applied science and a man may derive a very good livelihood from this profession, one of which he should be very proud.



A Flashlight of the Tunnel running from the Men's Residence to the Main Building



Our Graduating Class.

Class 1915.

The four years of college are almost over. The longed-for degree will soon be yours, and in your eagerness to possess it there is no time for retrospection. Allow us, in so far as we have covered the path, to show what these thoughts would be. The simple pleasures of the Freshman, the stateliness and good sportmanship of the Sophomore, and the increasing responsibilities of the Junior have all had their influence upon you. You have done credit to our Alma Mater on more than one occasion. You have in your ranks men who merit great praise as sportsmen, and men whose equal on other lines the College has not seen for many years. Their successes are an inspiration to the under classmen. You have to your credit this year the winning of both the championship on Sports' Day and the Interclass Debating Shield. We honor you for what you have done. As you go out into the world in a most unsettled time, you have your fellow students' earnest and most sincere wish that success may accompany all your earnest efforts, and that Macdonald will be the same as ever to you as long as any of us remain.



EARL M. RICKER (Rick.)

"The tranquility of the man is notable."

Malden, Mass. Malden High School.
 Secretary Students' Council, 1912-13 ; Treas. Students' Council, 1913-14; Capt. Varsity Baseball, 1912-13-14 ; President Athletic Assn., 1914. Editorial Board of McGill Annual, 1915. President of Class in Sophomore, Junior and Senior Years. President Students' Council, 1914-15.
 Horticulture.

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R. EDEY McKECHNIE (Mac.)

*"I hate them because I love them,
 And I love them because I hate them."*

Bristol, Quebec. Onslow School.
 Vice-President Y.M.C.A., '13-'14. President Y.M.C.A. '14-'15. Inter-class Debater.
 General Option.

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LAWRENCE J. WESTBROOK (West.)

"The countenance is the portrait of the soul and the eyes mark its intentions."

Morganville, N.Y. Batavia High School.
 President Class Literary Society, '12-'13. Live Stock Editor Magazine, '14-'15. Debater. Class Baseball and Basketball Teams, '12-'15.
 Animal Husbandry Option.

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JAMES H. McCORMICK

"If I can't have the Bell of the ball, I can make the rest of you Green with envy."

Barbados, B.W.I. Harrison College, Barbados.
 Diploma of Proficiency, 1910. Chemist Carrington Sugar Factory, 1911. Entered M.A.C., 1912. First two years in one. Alumni Editor Magazine, '14.
 Varsity Baseball, '15.
 Biology Option.

FRED. Y. PRESLEY (Pres.)

"Methought I heard a voice say, 'Fuss no more.' I dared not say 'Amen.'"

Malden, Mass. Mass. Agr. College, 1911.
 President Literary Society, '11-'12. Funny Man of Magazine, '13-'14. Capt. Class Basket Ball, '14-'15. Varsity Baseball, '12-'15.
 Selective Option.

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LEONARD C. McOUAT (Elsie).

"A mountain of flesh."

St. Andrews East, Quebec. Lachute Academy.
 First two years with Class '13. International Stock Judging Team, Chicago, 1913. Chairman House Committee, '14-'15.
 Animal Husbandry Option.

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JAMES H. KING.

"Dearly do I love the gentle rough house."

Sussex, N.B.
 First two years at O.A.C., Guelph, Class 1910. Entered M.A.C., 1913. Vice-President Class Literary Society, '15.
 General Option.

□ □ □



HAROLD B. ROY.

"On their own merits modest men are dumb."

Sabrevois, Quebec. Royal School of Cavalry, St. Johns, Quebec.
 Capt. Varsity Soccer Team, '14. Varsity Baseball and Hockey Teams. Rink Manager, '12-'13. Gymnast.
 Horticulture.





WILFRID SADLER, N.D.D.

*"Nothing really appeals to me
Like a nice little five o'clock tea."*

Cheshire, England.

King's Scholarship Examination, 1903. University College, Reading, 1906. Lecturer in Dairying and Asst. in Bacteriology at Midland College, Kingston, Derby, 1908-12. Published Book, "Bacteria and the Dairy Farmer," 1912. Entered Macdonald, 1913. Asst. Editor Magazine, 1914. President College Literary Society '14-'15. Debater. Bacteriology.

□ □ □



J. EGBERT McOUATH (Jay-ee.)

*"He's little but he's wise,
He's a terror for his size."*

Lachute, Que. Lachute Academy.

Model Diploma, M.A.C., 1909. Originally Class '13. Taught School two years. M.A.C., 1913. Editor M.C. Magazine, 1914.—Responsible for Popularity Contest. Secy. College Literary Socy., 1913-14. Vice-Pres. Class in Senior Year. Debater. General Course.

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ELLARD L. HODGINS.

*"Happy am I, from care I'm free!
Why aren't all contented like me?"*

Portage du Fort, Quebec. Shawville Academy.

First three years at O.A.C., Guelph. Champion Lightweight Boxer at O.A.C. Secretary Literary Society, Freshman year. Entered Macdonald, 1914. Happiest man in College.

Animal Husbandry Option.

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ANDREW G. TAYLOR (Andy.)

*"I love the rooster for two things ; for the crow that
is in him, and for the spurs that are on him to back up the
crow with."*

Ormstown, Quebec. Huntington Academy.

President Class, 1911. President Class Literary Society, '13-'14. Business Manager Magazine, '13-'14. International Stock Judging Team, Chicago, 1913. President Animal Husbandry Club, '14-'15. Debate. Animal Husbandry Option.

HARRY I. EVANS.

"I play a little, fuss a little, and 'daunce' a little."

Hampton, N.B. Mount Allison Academy.
 Secretary Athletic Assn., '13. President Athletic Assn.
 '14. Secretary Class '12-'13. Varsity Basketball
 and Baseball Teams, '12-'15. Agronomy Editor Mag-
 azine, '13-'14.
 General Option.

□ □ □



ERIC GROVE-WHITE.

*"And departing, leave behind him
 Footprints in the sands of time."*

County Cork, Ireland. Malvem College.
 Varsity Football, McGill Track Team, '12-'15.
 Harriers Track Team, '12-'15. Intercollegiate Half-
 Mile Champion of Canada, '14-'15.
 General Option.

□ □ □



GEORGE C. BOYCE (Rosy.)

*"A man to all the maidens dear,
 With such grace and pretty auburn hair."*

Athelstan, Quebec. Gault Institute, Valleyfield.
 Vice-President Class '13-'14. Macdonald College Or-
 chestra. First Place Macdonald Team, International
 Stock Judging Competition, Chicago, 1913. Secretary
 Literary Society, 14-'15.
 Animal Husbandry Option.

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HAROLD F. WILLIAMSON (Billy).

"Music hath charms to soothe the savage breast."

London, England. Easton High School, Penn.
 Varsity Football, '12-'15. Musical Leader, Y.M.C.A.,
 '12-'13. McGill Orchestra and Band.
 Specialist in Poultry.





HOMER D. MITCHELL (Mitch.)

"I don't feel quite right. I have not been sleeping well in lectures to-day."

Drummondville, Quebec. Pawtucket High School, R.I. President Class '16 in Freshman Year. First two years in one. Advertising Manager Magazine, '13-'14. Secretary Class, '14-'15. General Option.

□ □ □



CHARLES RUSSELL (Russ.)

"I never made a mistake in my life, at least never one that I couldn't explain away afterwards."

Ithaca, N.Y., Haverford College, Pa. Entered College in 1912. First two years in one. Humorist Magazine, '12-'13. Animal Husbandry.

La Reponse.

"The Call to Arms" comes ringing loud and clear.
 Oh Canada! It is thy Mother calls!
 Behold the foe arrayed against her walls
 To lay in ruins all we hold most dear.
 Then boldly come, Canadians! Do not fear
 To face the foe. Quit you like men, not thralls
 Whose courage in the hour of danger falls.
 What! Shall the name you bear call forth a sneer
 From sister states, who England's call obey?
 No! From Atlantic to Pacific Coast,
 From Manitoba's plains and Fundy's Bay
 This cry arises from the assembling host:
 "In loyalty, no state shall be our peer!
 "Oh, Britain! Thou hast called us. We are here!"

NITRAM.

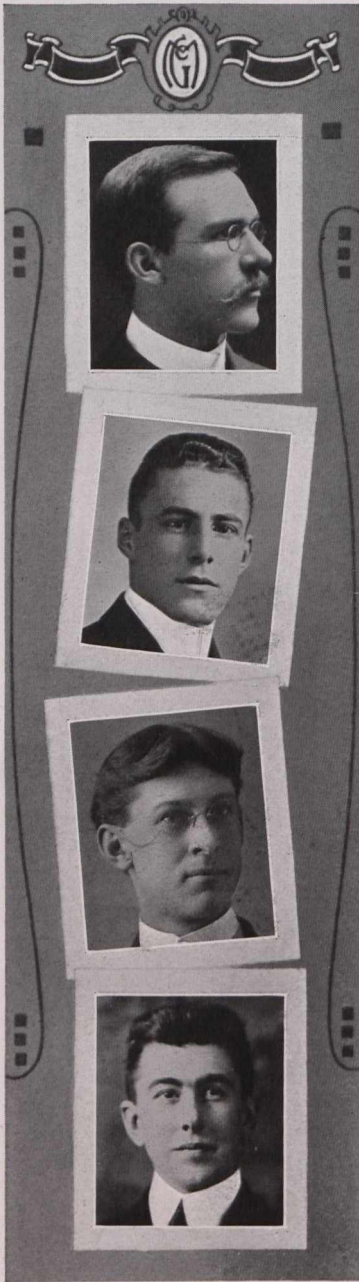


C. ERIC BOULDEN.
 GEORGE C. HAY.
 CLYDE W. PETERSON.
 E. CARLYLE SPICER.

Agriculture '16.

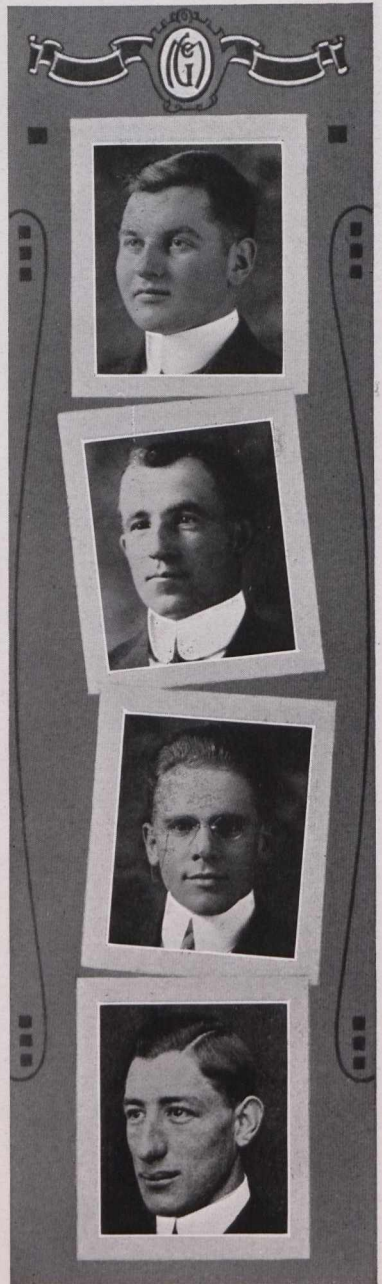


J. G. CARL FRASER.
 WALTER E. SUTTON.
 J. HAROLD McOUAT.
 GEORGE FENOULHET.

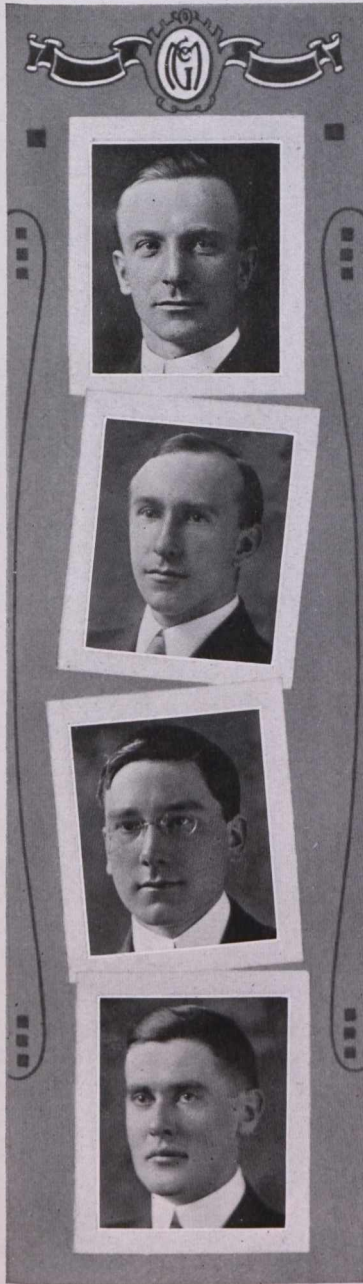


CLARENCE B. HUTCHINGS.
 AUSTIN E. HYNDMAN.
 H. W. F. CROTHERS.
 RUDOLPH SCHAFHEITLIN.

Agriculture '16.



CHESTER LYSTER.
 CHARLES B. GOODERHAM.
 E. A. McMAHON.
 GEORGE B. BOVING.



JAMES M. HACKER.
 ARTHUR KELSALL.
 CHARLES F. COLLINGWOOD.
 JOHN C. MOYNAN.

Agriculture '16.



J. ANTOINE STE. MARIE.
 E. STANLEY COCHRANE.
 T. HOWARD BIGGAR.

Sophomore Class History.



SEPTEMBER 30, 1913, will long be remembered at Macdonald College, for on that eventful day began the history of Class '17.

The class was a record one in numbers, and is noted for being the first class, since the opening of the college, in which lady students answered to the roll call.

College life was entered into at once with a zest quite uncalled for, when, through means of a very whole-hearted initiation, a speaking acquaintance was established with the Sophomores. They recognized us by the marks of their own handiwork, in most cases somewhat crude and barbarous. On sports day the class first realized their importance in college life. It was their honour to win the Robertson Cup, awarded to the class winning the most points on field day, a feat rarely accomplished by a freshman class. Bailey, known only as "Bill," added laurels to the class by winning the individual championship cup. "Sam" Skinner was close second with only one point behind the champion's aggregate. Nor were they lacking in encouragement, for the class as a whole seemed to find their voices, and the cheering grew in volume as the day wore on. The day was celebrated in a worthy manner by a raid on the picture show in the village. This terminated rather vigorously in a row, in which the furniture suffered most severely, with the inhabitants next in order of damages.

Another important event of the year was the sleigh drive. This was an important one, for it was the first of its kind given by a Freshman class in which the girls were allowed to participate. It is true that the first attempt was somewhat marred by the Sophomores, but, as a result, the class enjoyed the girls'

society for two Friday evenings in succession.

The college year was brought to a fitting close, on the eve of departure, by a dance given by the girls. That night was also marked by the transference of a great deal of rolling stock from the farm and surrounding district, to take up a new and picturesque position on the oval. The last morning saw an attempt on the part of the Sophomores to capture the class flag, but after a most determined tug-of-war, it was still kept by the victorious owners.

The class commenced its Sophomore year much diminished in numbers, but undaunted in purpose, as was shown by the hearty welcome given to the new Freshmen class. Early in the year their happiness was shadowed for a while by the loss of the president and the class flag. However, better days came, for a new president was found in the person of Arthur Milne. The flag also appeared one bright morning, though slightly disfigured. It was won back after a fierce encounter, in attic and on dusty stairway, with the Freshmen. It can be said that it was restored honourably and in the daytime, while it disappeared under the shadow of darkness and in the dead of night.

This brings the history of the class to the present time when the realities of the future are before it. Some fellows have already enlisted; some would, but cannot; some are going out this summer to help in the work of the college, and others are returning to their homes where, with the help of broader minds, they will add to the productivity of the country. But in whatever sphere of life they may be, whether it be at home or on the battle-field, the fellows will always look back with pride to the time when they were members of Class Seventeen.

W. C. R. B.



THE SOPHOMORE CLASS.

A Brief History of Class '18.



EARLY in the day on Sept. 28, 1914, the first installment of the present freshman class of Macdonald College arrived, and by night most of them had registered, paid their entrance fees, been allotted temporary rooms and crawled shivering into bed, after piling most of the furniture in the room against the door to guard against terrible dangers from without. Our real troubles started two nights afterward, however, when, after 59 of us had enrolled and had been given permanent rooms, the sophs broke the awful suspense by initiating us in the small hours of the morning, the sight being gleefully witnessed by the other years.

Some of our number spent our first two days taking grading exams., and on Oct. 1 our regular work started. At the start of the fall term a number of our men turned out for Rugby and Soccer, with the result that half the Rugby team and four regulars on the Soccer team were freshmen, and Matthews, '18, has since been elected next year's Soccer captain.

Temporary officers of the year were elected at the beginning of the term and a month later permanent ones were picked from our midst, these being: Pres., H. W. Brighton; Vice-Pres., C. Loomis; Sec'y., H. Birks; Treas., J. Howard.

Two more freshmen came into the fold early in October and one left, making a total of 60, the newcomers being duly

initiated by their classmates and a fight with the sophs followed. A member of the latter esteemed class tried, with the assistance of a freshie, to make a hurried exit from the side door without opening it, with the result that in the morning there was lots of glass on the floor and none in the door. Another fight with the sophs occurred shortly after sports day (in which our points, if figured in cents, would not buy a man a very heavy meal), the cause of the fight being the '17 banner decorating the roof of the Men's Residence and the glorious figure 8 decorating the banner. They got their banner by great stealth and cunning.

Another man left the class before Xmas and since then one has left for reasons best known to himself, while ten have offered their services to their country.

On the hockey and basketball teams we had representatives but in the interclass games our only scalp has been the seniors' in basketball.

We won our first interclass debate against the sophs, but the seniors beat us by a small margin in the final.

Just before the soldiers left we had a class feed in the village with diversification in the form of songs, toasts and cigars.

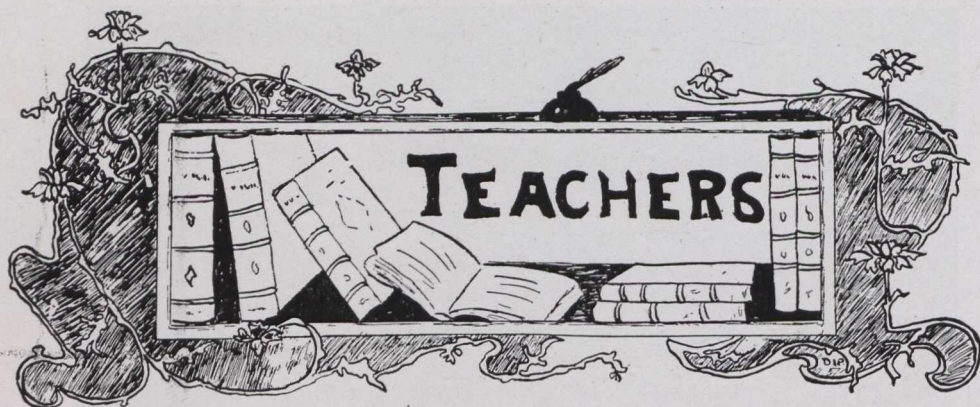
We now look forward to our spring exams., and those that intend coming back this fall as sophs are trying to cram up so that the faculty will intend the same.

H. M. B.





FRESHMAN CLASS.



True to the Flag.

THE key-note of the war had been struck, the time for petty politics was past, and the great struggle for World dominion was in its first stage of development. Doubtless Germany did not believe that the whole of the vast British Empire would be arrayed against her in the great contest of which she herself was the actual originator, or she would not have entered so recklessly upon such a war. It was her firm belief that she could easily annihilate the Ocean Isle, and not only this but that she would eventually hold the greater part of Europe in her sway. She placed no foundation in the theory that the South Africans, the natives of British India, as well as all other British subjects would be staunch and true to the Crown; but in this her hopes were built on sinking sand.

It is true that England stood in grave peril when war was declared, but that spirit of love for the Motherland, of desire for peace, and of the unity which pervades the whole of those vast territories over which the sun never sets, came to her aid and manifested

itself to its fullest extent. Every country under British rule rallied round the flag. From the fertile plains of our great North-West to the burning desert of Africa, and the far-distant islands of the Pacific, there came the response of "Ready, ay, ready," to the demand for help, showing justified proof of the implicit trust which Britain has in her possessions.

Among them all, our great Dominion held a proud place. She was not to be a mere onlooker at this greatest spectacle of all the ages. She was destined to stand shoulder to shoulder with the Motherland in the great struggle for freedom and right, and we have witnessed during the past few months that glorious manifestation of patriotism, due largely to the fact that we are a part of a grand Empire whose members forgot all their trifling disputes, and at the call of battle arose as one man for the sake of liberty and cherished ideals.

At the opening of Parliament the Duke of Connaught read a despatch to the House which stated that England was asking for help. His Royal Highness proposed that immediate aid should be

tendered and the leader of the Opposition stood hand in hand to carry out his suggestion.

On Thursday, September 24th, 1914, the first contingent of Canadian volunteers left Valcartier for Great Britain. Among these was the Princess Patricia regiment, the first to reach the firing line, and ever since Xmas they have been fighting valiantly in the trenches for Old England. Another contingent, imbued with that same spirit of love, truth, and honour, embarked in February, and yet another is being equipped which will doubtless leave in the early spring. Does this not manifest, not only to our enemies but to the wide world, that our men are made of the metal which rings true, that they are filled with that just and sane patriotism which every true Britisher is proud to possess, and which is found in that type of manhood, strong to endure, and willing to sacrifice all in the cause of right!

Certainly Canada has identified herself as a true daughter of the Motherland, and every Canadian feels that he has a duty to perform, a species of self-interest, and to some extent a responsibility, which may aid in bringing this terrible conflict to a speedy end.

The best men that our land affords have offered themselves, not from love of adventure and experience,—very far remote from such a wanton desire for self-distinction—but for the sole reason that they realize the inevitable result if German rule were to be the issue of this war. They know that death itself would be far preferable to that as an outcome, for they have seen the effect of German oppression in the Belgian lands. If Britain were conquered the unavoidable consequence would be German tyranny over all the British possessions. Germany has set

herself to endeavour to rule the earth, therefore let us appeal to the manhood of our country to frustrate the designs of such a bullying nature, to the utmost of its ability. Our doctors, artists, in fact men of all classes and distinctions in life have given up their life interests for the service of the land which they love. Students from the best of our colleges have sacrificed their ideal in life, and entered forth cheerfully upon the path of duty. They have realized that now is the opportunity for world-service, that they must improve such an opportunity while it lasts, so that the outcome may be the freedom of the race and the dawn of a better day.

It is indeed this sort of men that England wants; those men, who, like that first noble band, unflinchingly faced death in the very mouth of the cannon; those men who gloried in the presence of the bright face of danger, and who went forth with two alternatives in view, *victory in battle or death in honour*. They overlooked the long dreary days lying between dream and fulfilment, and hastened on their way incited by that glorious spirit of patriotic zeal. They forgot the tiresome marches beneath weeping skies and the many hardships which they knew they must endure, and only remembered the heroic mission on which they were sent.

Such a great war cannot but exercise a sad influence upon all countries. Trade suffers, markets are closed, and shipping is at a standstill; but we must bear these adversities cheerfully when we think of the brave men who have laid down their lives for our protection. The cost of the war cannot be computed. It does not consist only in the financial loss to the nation but in rivers of blood. Wives and mothers

have given their husbands and sons to the call of duty. The pangs of this cruel war will, and have, laid hold upon the hearts of many of those who are bereaved, and so we should pay to them a tribute of praise for their sacrifice, and also of sympathy in the loss of their loved ones. And so let those who are young awaken to the full reality of living in these invigorating days. Let them be ever ready, when duty calls, to defend our glorious

Empire, thus enabling it to stand like the sturdy oak, sometimes weathered and tempest-tossed, but when the storm has passed, remaining as stalwart as in the days of old.

“Weave the crimson web of war!

Let us go and let us fly

Where our friends the conflict share,
Where they triumph, where they
die.”

ALICE M. MCKENNEY, T. '15.

Springtime on the Prairies.



AFTER the long, hard winter of extreme cold on the western prairie, spring is very welcome, and the prompt response of nature to its quickening power is very interesting.

My experience of a spring on the prairie came after a winter of extreme cold, lasting until the end of March, the thermometer registering twenty-five below zero on Easter Sunday, March 25th; and this was moderate after January conditions.

The spring, however, came with a jump in true western style, and by the end of the first week in April the snow was about gone and the sun was following up his victory across a cloudless sky every day. The air had that indefinable spring feeling which makes every living thing respond to its joyous influence.

Right on the heels of winter came the migratory birds from the south. After a few warm days had thawed the sod a little, great patches of the prairie spread over with a carpet of delicate, mauve-tinted, prairie crocuses. They

are about the size of a half dollar and seem so anxious to be first to greet the spring, that they cannot take time to grow a decent stem but just pop out of the ground as soon as the frost has left it, and bloom immediately, growing a little stem afterward.

Of the birds, the first to come were the prairie horned larks, but they came before there was any real indication of spring. The ducks and geese came swarming in, in their well-ordered flocks, the geese cutting across the sky in their long V-shaped formations, flock after flock, all day long and often during the night, when their loud honking calls told of the steady progress of this great winged army, guided by the unerring instinct of their leaders to the great spruce-clad breeding grounds of the far north.

I have seen many flocks of geese pass over the city of Winnipeg by night and they were so low down that the light from the electric arcs was reflected by their grey bodies, making them appear like airy phantoms against the blackness of the night. In the daytime they fly high, and from the time they appear as

specks on the southern sky until they disappear in the north they advance as steadily as a railway train, their whole appearance suggesting aim, determination and confidence. When they alight to rest or feed, they post sentinels, and keen-eyed, faithful ones they are, as anyone who has ever tried to steal up on them knows.

The northward flight of the great sandhill crane, most unwarrantably called wild turkey in the West, presents a strong contrast to that of the goose. The cranes fly so high that they are mere specks against the blue, and often their harsh croaking is heard for some time before one can locate them with the eye. They never seem in a hurry but go along leisurely, drifting northward on their broad outstretched wings, sailing along in great airy spirals, with only an occasional flap of the wings. They migrate in flocks of from fifty to seventy-five and are a large bird, having a spread of wing, from tip to tip, measuring between six and seven feet.

The gulls and terns came along a little later and they were my daily companions while at work in the fields, the small black terns being especially tame and saucy. Wherever a bit of ground was being stirred by plough, harrow or disk, they came hovering along a few feet behind, swooping down to pick up the insects and grubs exposed by the stirring of the soil. When ploughing, they would follow along within an arm's length, swooping down to seize a larva from the newly made furrow but never alighting on their delicate webbed feet, as if fearing they might be soiled.

Later in the season when these terns had built their floating nests on the sloughs near the house, they would boldly attack me when I approached

them, swooping down on me from above and delivering a sharp blow with their beak on the top of my head, scolding like furies all the time.

During the first days of spring one hears every morning, just at sunrise and for half an hour after, a very odd sound. It is a low, harmonious and weird booming noise, the syllables of which resemble ooka-oom boo-hoo oo-oo-oo. It is not loud or harsh and seems to come from all directions and great distances. The air almost vibrates with its soft harmony. It somewhat resembles the hooting of an owl but is deeper and more resonant. Springtime is a season of birdsong everywhere, and this peculiar song is the love call of the prairie chicken.

The males and females gather in flocks of from a dozen to fifty on some dry prairie knoll and then begins love making of a unique character. The male is provided with a pouch of loose skin on each side of the throat which he can inflate to the size of an orange, and puffing out these special ornaments he drops his wings to the ground like a turkey gobbler and struts up and down before the admiring damsels who stand shyly around in coy groups. Suddenly he makes a dash at his best speed right into their midst, producing strange booming notes before mentioned. This is repeated at intervals, often every male in the flock making the rush and booming at the same time, the volume of sound from such a display being wonderful. The females respond by running about quickly with a dead stop about every three feet. Such a spectacle is very interesting and funny, and when this same thing is going on all over the prairie at once the amount of sound produced is surprising, and though it is not loud it will carry for miles on the still morning air.

Toward the latter part of this week or more of love making, the birds are pretty well paired off, but there is usually much fighting in the last stages of the game, resulting from rivalry between the males for the affection of some shy lady, too modest to make a choice and allowing trial by combat to select the winner.

I was interested to note the western meadow lark, which cannot be distinguished in any way from our eastern species excepting by his song, which is

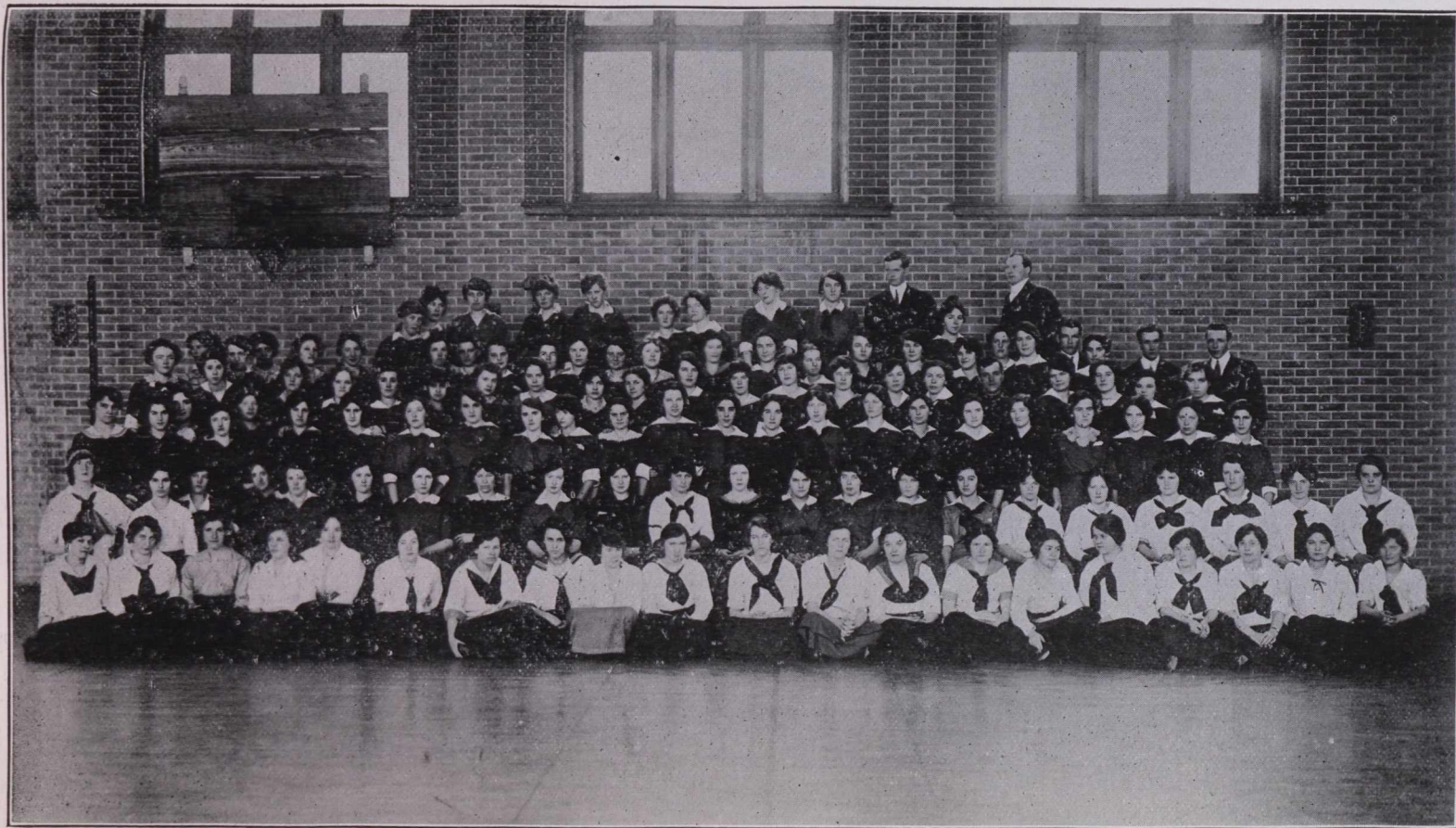
entirely different, there being absolutely no resemblance. Not only are the series of notes different but they lack the sweet plaintiveness of the eastern bird's song.

The sloughs and creeks were alive with birds by the end of April, and then there was the added interest of the nesting habits and later the young birds in these nests.

C. M. EWART, T., '15.



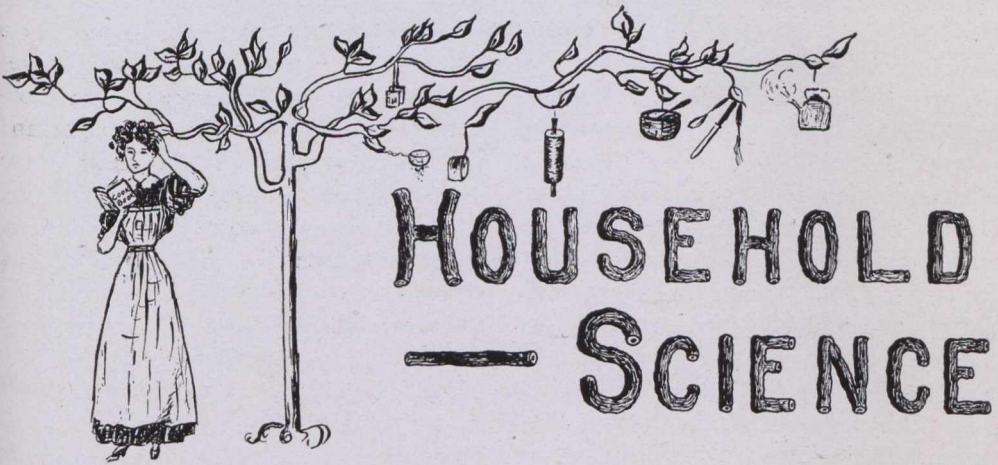
Spring Short Course Science Students.



TEACHERS, 1915, MODEL CLASS.



TEACHERS, 1915, ELEMENTARY CLASS.



A Hospital Diet Kitchen.

By

A Pupil Dietitian.



OUR Diet Kitchen never by any chance receives its full name. To us it is the D.K. We have three nurses there always. One leaves us and one comes in every second week. The last to come in has numerous duties. She scrubs quantities of potatoes every day and washes dozens of heads of lettuce, besides preparing chickens and squab for broiling, and pressing beef juice. Often for days there will be daily requisitions for beef juice, possibly for sixteen ounces, maybe for twenty-four, and no one knows better than the poor nurse what an arduous task it is to get that much. The junior nurse has a very responsible position. She has to send out the weighed diets as well as the special diets, and she will surely have the sympathy of the senior science students when they find that she must calculate the required amounts of protein, fat and carbohydrate in from six

to twelve diets, besides actually preparing the food. Then, when all the diets are ready to be sent, or sometimes have even gone, it is rather exasperating to receive a message saying that So-and-So is "starving" to-day. In hospital language, this means that the patient is to have no food at all ; or, she may hear that So-and-So's protein has been changed from 45 to 25 grams, and that his carbohydrate has been dropped to 15. Such things, of course, require a complete change of the diet, and the nurse must be prepared to face, with a good grace, the extra work involved.

The senior nurse makes all the salads and desserts, and broils chops, steaks and chickens for from twenty-five to thirty-five daily "extra diets." Baked potatoes and a special vegetable also go with these, so time does not hang heavily on her hands. The following weekly summary, taken from a week when orders were running low, will give

the reader a fair idea of the work of our D.K. :—Extra diets, 147 ; ice cream, 183 ; special ice cream, 12 ; jellies, 253 ; custards, 359 ; special orders, 223, which included diets for the treatment of enteric, gastric ulcer, acute nephritis, salt free diet for nephritis, weighed diets for diabetics, limited diets for diabetics, experimental diets, or as they are called here, "Research" diets, non-nitrogenous and low protein diets, also diets for obesity and pernicious anemia, etc.

A patient on experimental or "research" diet not long ago was being fed on nitrogenous food, and in one day he took 27 eggs, 11 slices of bread, five quarts of milk, as well as jelly and custard ! After living on such a generous diet for a number of days he naturally found the house diet, when he was put back on it, very slim and hardly satisfying.

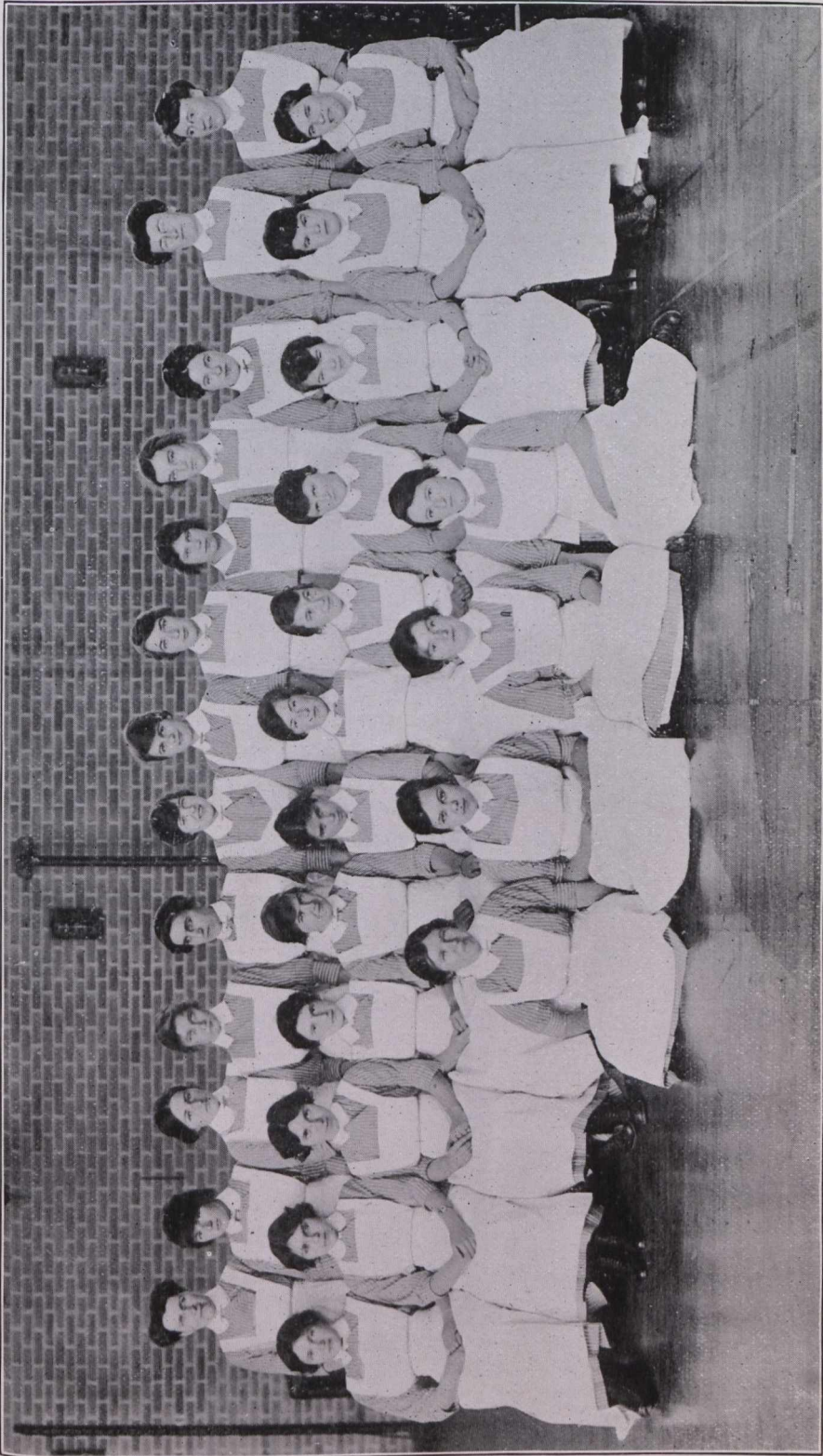
Our dietitian devised a bran macaroon to be used in the diabetic diet, and it proved so acceptable to the patients that now one person has to take a good part of every morning in the diet kitchen making these, the patients want so many, and as the number of things these patients can have is so limited, we want to please them whenever possible. Why they are so popular is a mystery in a way, as they taste to me somewhat like a mouthful of dry chaff or chopped hay. In the first place, they were made especially for Charlie's benefit. Poor child, he was in the hospital for nearly six months. We began by sending him ten a day. He liked them because they looked something like what the others were eating, he said, but ten wasn't enough, and soon he was getting thirty-five a day, and he said that when he went home he was going to have more than that ! Charlie's case would be progressing satisfactorily for days and then suddenly very unsatisfactory symptoms

would appear. The doctors simply could not understand it, until one day a custard in a custard cup, which was being slipped into Charlie's loose trousers pocket, did not go in quite right, and the watchful eyes of the head nurse discovered the source of the trouble. This will give you some idea of what an important part the diet plays in the treatment of some diseases, when a harmless looking custard may produce decidedly unavourable symptoms.

Let me tell you of Charlie's farewell to the hospital. He left the hospital to go home in the afternoon, but his meals had been ordered as usual for the day, so, of course, his supper was sent over with his dinner, as is always the case, and in some way before he left Charlie got hold of that supper and didn't leave the tiniest scrap. It seemed very cruel not to be able to give him things ; he was always hungry.


The summary given above shows many of the most usual diets that are prepared every day here in our diet kitchen. Numerous diseases are treated here to-day almost entirely through the diet, in such a way as was hardly thought of a few years ago. For this reason the well-trained dietitian should be a very necessary part of *every* hospital staff. The pupil dietitian who, as a student at Macdonald, may have, as she thought, put in a very busy morning preparing one diabetic diet, supervises and helps to prepare in the diet kitchen six or eight of these along with over a dozen other diets, all in one morning.

This will probably make the reader have some idea of what a valuable practice field a hospital diet kitchen may prove to the prospective dietitian, and how very necessary it is that she have this post graduate work before assuming the responsibilities of a diet kitchen herself.



HOUSEHOLD SCIENCE CLASS—HOMEMAKERS '15 AND HOUSEKEEPERS '16.

The Influence of Household Science upon Society.

S a social factor household science has a direct influence upon the home, an influence upon the school, and an influence upon the social life of a community in general.

Where rests a greater responsibility than on the housekeeper in the home, for the well-being of the household physically, mentally and morally! Therefore, the housekeeper needs the wisest training she can possibly get to fit her for such a responsible position. She must have a knowledge of food and cooking from the point of view of nutrition, economy and attractiveness; she must have a knowledge of clothing; she should have good executive ability and expert training in household management; she should be a psychologist ready to sympathize with those with whom she has to deal.

At a recent examination of school children in a county in Ontario, it was found that over 50% had physical defects. And to what may all this be traced? Great advancement in the science of education has been made within the last twenty-five years but the physical condition and development

of the child has been grossly neglected, and, no doubt, the so-called stupidity and backwardness and irritability of children found in our schools to-day is due to improper feeding, care and shelter. Food and fresh air are absolute essentials to life and correct living.

In Canada the social movement is yet in its infancy, and there is a lack of correlation between the school and the needs of the industrial and social circles. Many are in need of such education so that they may perform properly those duties which they owe to themselves, the community and the nation.

Extension work is slowly advancing among the country people to-day. In the different communities clubs are formed, and at these meetings they learn how to care for the home, how to buy and prepare food by the most economic methods; they study all questions which pertain to the home.

The people are benefited greatly by the social side of these lessons and the effect of them may be seen in the betterment of home, school and community conditions.

A. E. WATHEN, Sr. Sc., '1



Class Presidents Among the Girls.

Miss Ethel Wathen, the Senior Science President, for the second time presides over her class-mates. Miss Wathen also held during the fall term the enviable office of President of "The Court of Honour," which she ably fills to the satisfaction of all.

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Miss Pearl Harwood, the President of the Model Class, in the School for Teachers, comes from Sherbrooke, where she was educated. She came to Macdonald last year, and has since won the friendship of all her classmates. Miss Harwood is this year President of the largest Model Class ever held at Macdonald.

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Miss Amy Reid was this year elected President of the Homemaker Class. Miss Reid came to us from Toronto University, where she received the degree of Bachelor of Arts. She is a hard worker and a lover of athletics, being foremost in many of our sports.

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Miss Beulah Cogland, the President of the Junior Housekeepers, hails from Huntingdon. Before coming to us Miss Cogland taught school near her home. She has already won a big place in the hearts of the girls through her sunny disposition and ever-present smile.



Faculty Items.



THE whole college community was deeply shocked by the fatal accident of February 20th, which deprived us of the companionship of Miss Macmillan, Superintendent of the Men's Residence. Miss Macmillan was highly esteemed among her colleagues and associates. Her devotion to duty, her conscientiousness, her fair-mindedness and her charitable attitude towards those about her had endeared her towards all. She is much missed.

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Mr. N. C. MacFarlane, of the Chemistry Department, has the distinction of being the first member of the staff to enlist for service in the great war. Mr. MacFarlane comes of soldierly stock and has had some military training at the University of New Brunswick before coming to Macdonald College. Mr. MacFarlane has an honorable record as a student and teacher, and will, without doubt, make a worthy soldier and officer. The best wishes of the staff go with him and with the other Macdonald men who are risking their lives in the defence of the Empire.

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In the Bachelors' Club the lectures which have been given every three weeks have been well attended and much enjoyed. Since our last report Dr. Savage has spoken on "Cancer" and Mr. Boving on "Experimental Work and Mendelism in Roots." The live discussion following each lecture is indicative of the interest aroused. Each lecture is followed by an enjoyable social meeting in the Bachelors'

quarters. Mr. Duporte is to address the Club on March 22nd, and Mr. Stanton on April 12th. A debate has also been arranged.

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The following programme was rendered at the concert arranged by the Macdonald College Club, March 5th.

PART I.

1. Organ Solo—
Introduction and Allegro..... F. E. Bache
MR. STANTON
2. Part Song—
"Stars of the Summer Night"..... H. Smart
GLEE CLUB
3. Song—
"They All Love Jack"..... S. Adams
MR. EDMISON
4. Pianoforte Solo—
"Arabesque"..... Debussy
MISS HOPE ELACK
5. Song—
"Nymphs and Shepherds"..... P. Purcell
MRS. HARTNELL
6. Recital—
"Lasca".....
MISS E. MONTLE
7. 'Cello Solo—
"Walter's Prize Song"..... Wagner
MR. SCHAFHEITLIN

PART II.

1. Organ Solo—
"Lullaby"..... Lemare
MR. STANTON
2. Quartette—
"Lovely Night"..... Chwatal
MR. STANTON, DR. SAVAGE, MR. DUPRÉ,
MR. BOVING
3. Violin Solo—
"Reverie"..... Vieuxtemps
MISS HOPE PORTREY
4. Pianoforte Solo—
"Mazurka"..... Leschepizky
MISS HOPE BLACK
5. Song—
"Prince Charming"..... L. Lehmann
MRS. HARTNELL
6. Welsh Melody—
"All Through the Night".....
GLEE CLUB

Prof. Barton and Mr. Boving took part in the short course at Woodstock, N.B., arranged by Mr. Robt. Newton, B.S.A.

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Dr. Savage was the principal speaker at a series of meetings in Pontiac County in March, arranged by Mr. J. K. King, B.S.A.

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Miss R. L. Stewart has been appointed Superintendent of the Men's Residence. Miss Stewart has had a wide experience in hospital work, having been Superintendent of the Milwaukee Hospital, the Johns Hopkins Hospital, Baltimore, Md., and the Toronto General Hospital.

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The Snowshoe Club this season has been somewhat disappointed in the weather, which has prevented their taking advantage of the kind invitation of Dr. and Mrs. Lynde to meet at their home. Nevertheless, the Club has taken full advantage of its opportunities. Mrs. Doig and Mrs. Snell have extended the hospitality of their homes for meetings. The moonlight walk of March 1st was enjoyed to the full. About 25 members tramped through the woods at the back of the farm, returning to Mr. and Mrs. McLennan's for refreshments and music. An evening unique in the history of the Club was

March 8th, when through special effort of the committee a great bonfire in the wood was arranged for. Sandwiches, hot coffee and merry songs were enjoyed and cheers for the committee brought the season to a close.

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The interest of the staff in military training continues unabated. The efficient drill instruction of Sergeant-Major Sharpe is much appreciated. Dr. Harrison continues to give generously of his time and attention to initiating us into the mysteries of the military art. Rifle practice is enjoyed by a large number, many having purchased practice rifles for themselves and formed a club for target practice. The highest scores made up to March 2nd are as follows: Possible 200; Hammond, 139; Stanton, 126; Duporte, 120; Brownell, 119. A weekly war game is played under Dr. Harrison's direction. During the week deep-laid schemes, hatched in the minds of mushroom colonels, majors and captains, are gravely debated in "councils of war," and on Saturday afternoons the map of Belgium, spread upon the table of the Physics Laboratory, is the scene of hotly contested battles between the Reds and Blues, so absorbing to the participants that the supper hour is scarcely recognized when it appears.

Sunset.

The rosy clouds of sunset in the west,
The chiming of the bells from o'er the hill,
The gentle lowing of the distant herds,
And then, as twilight falls, the world is still.

All nature seems at perfect peace and rest;
The sordid cares of day are all forgot;
Then things are at their best, and everywhere
The silence brings a sacred trend of thought.

D. C., T. '15.

Miss N. MacMillan,
Late Superintendent of the Men's
Residence.



In Memoriam

Miss N. MacMillan was born in Mount Forest, Ontario, in 1866. The early part of her life, which was throughout one of service, was spent at her birth-place. The loss of her only sister when she was a child, and of her mother a few years later, were sad blows to her. At her mother's death she assumed full charge of the household affairs, and later most faithfully tended an invalid father. His death in 1900 had such an effect on her that she was compelled to take a complete change and rest.

Some time after her father's death she became interested in the work carried on in the School of Domestic Science at Guelph. On completing the full course of two years, she was asked to fill a vacancy there on the College Staff. She remained for several years, until in January, 1910, she accepted the Superintendency of the Men's Residence at Macdonald College.

Her position at Macdonald was one very difficult to fill, but most efficiently did she fill it. During her whole stay, not one word of fault could be found. She was most methodical in all her work, and her mode of living had its effect on those around her. In spite of the fact that her extreme strictness at times seemed somewhat hard, her determination and the masterful manner in which everything she undertook was carried through, won her the respect of all. She had a pure delight in flowers and the absolute beauty of the alcoves of the Building speaks volumes on her behalf. Every visitor to the College was struck with the faultlessness of the Men's Residence.

Her death, by an unexplainable accident, was a terrible blow to everyone, but more especially to her brothers, Rev. J. W. MacMillan of Halifax, Nova Scotia, and Mr. Kerr MacMillan, Dean of Wells College, Aurora, N.Y. To them the students over whom Miss MacMillan had charge extend their sincere sympathy.

Macdonald College Alumni Association Notes.

Mr. W. L. Macfarlane, of Class '14, has been assisting in short course work in New Brunswick under the direction of the Agricultural School.

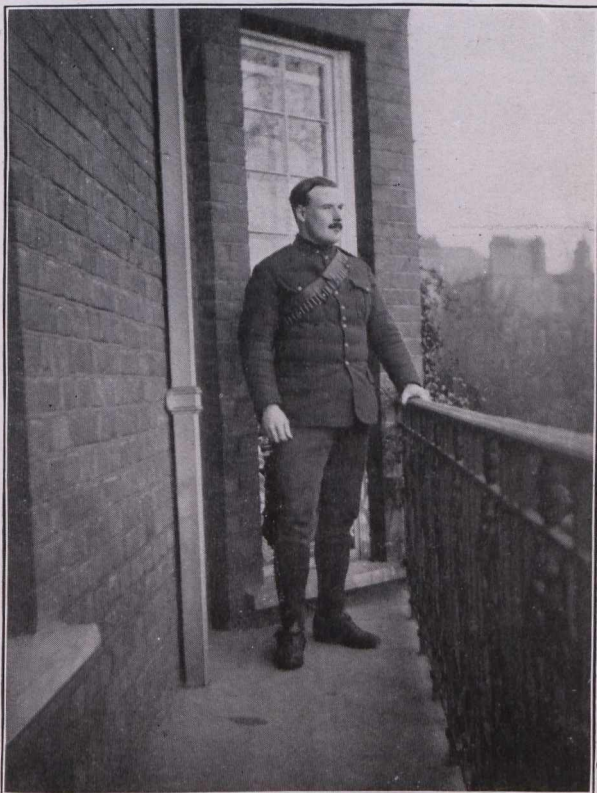
Mr. T. F. Ritchie, who has until recently been at his home in Aylmer, Quebec, has been appointed as Horticultural Assistant at the Lennoxville Experimental Station.

News has recently come to hand that Prof. F. N. Savoie, B.S.A., has left the ranks of the bachelors and has taken unto himself a wife. We extend heartiest congratulations and best wishes for future happiness.

Mr. W. H. Gibson, B.S.A., of Class '13, has recently been promoted to the position of Superintendent of the Ex-

perimental Farm at Indian Head, Sask. This is one of the oldest of the Dominion Experimental Farms, and the position is certainly a good one. We feel sure that a competent man has been secured for the position and congratulate him on his appointment.

The reunion of the Macdonald College graduates in Agriculture which was to have been held in June of 1915 has been cancelled. Over ten per cent of the graduates are already in uniform. Of these, five are on the firing line, while still others are considering enlistment. With these conditions prevailing among the graduates it has been thought best to postpone further arrangements regarding a reunion until such time as the European situation becomes more settled.



Rod Kennedy, B.S.A., '12, now with the First Canadian Contingent. This photo was taken when visiting friends in London.

Addresses and Positions of Macdonald College Graduates.

CLASS '11.

W. H. Brittain, Provincial Entomologist, Truro, N.S.

F. E. Buck, Assistant Horticulturist, Central Experimental Farm, Ottawa.

R. W. D. Elwell, Evarts, Alta.

R. P. Gorham, Assistant Provincial Horticulturist, Department of Agriculture, Fredericton, N.B.

F. S. Grisdale, Agronomist, Agricultural School, Olds, Alta.

F. H. Grindley, Fruit Division, Department of Agriculture, Ottawa.

R. Innes, Officers Mess, Wellington Barracks, Halifax, N.S.

W. J. Reid, Live Stock Instructor, Charlottetown, P.E.I.

E. M. Straight, Director of Demonstrations, 31 South St., Concord, N.H.

C. M. Spencer, Victoria Avenue, Wanganui, N.Z.

A. Savage, Veterinarian, Macdonald College, Que.

R. Summerby, Lecturer in Cereal Husbandry, Macdonald College, Que.

C. Sweet, Representative of Seed Branch, Regina, Sask.

C. M. Williams, Horticulturist, Experimental Farm, Nappan, N.S.

G. W. Wood, Extension Department, North Dakota.

CLASS '12.

W. W. Baird, Superintendent, Experimental Farm, Nappan, N.S.

F. S. Browne, Assistant Agrostologist, Central Experimental Farm, Ottawa.

A. A. Campbell, Manager of C.P.R. Farms, Fredericton Junction, N.B.

M. B. Davis, Assistant Horticulturist, Central Experimental Farm, Ottawa.

C. F. W. Dreher, Assistant Horticulturist, Second Canadian Overseas Contingent.

H. B. Duroste, Fertilizer and Drainage Advisor, Department of Agriculture, Fredericton, N.B.

S. M. Fiske, Florenceville, N.B.

D. B. Flewelling, Department of Agriculture, Fredericton, N.B.

E. A. Lods, Macdonald College Demonstrator, Cowansville, Que.

R. S. Kennedy, First Canadian Overseas Contingent, B. Squadron, Royal Canadian Dragoons.

J. R. N. Macfarlane, Second Canadian Overseas Contingent, Divisional Cyclist Corps.

A. R. Ness, Assistant in Animal Husbandry, Macdonald College, Que.

R. Newton, Director of Agricultural Schools, Woodstock, N.B.

L. V. Parent, Rougemont, Quebec.

E. Rhoades, Assistant Agricultural Editor, "Montreal Herald and Weekly Star," Montreal.

J. G. Robertson, Manager of Detchson Farms, Davidson, Sask.

J. M. Robinson, Second Canadian Contingent.

L. C. Raymond, Assistant in Cereal Husbandry, Macdonald College, Que.

J. A. Simard, Representative of Seed Branch, Quebec City, Que.

CLASS '13.

J. S. Dash, Assistant Director of Agriculture, Codrington House, Barbadoes, B.W.I.

E. M. Duporte, Assistant in Biology, Macdonald College, Que.

A. F. Emberley, Macdonald College Demonstrator, Ayer's Cliff, Que.

W. D. Ford, Provincial Animal Husbandman, Department of Agriculture, Fredericton, N.B.

W. H. Gibson, Superintendent, Experimental Farm, Indian Head, Sask.

A. C. Gorham, Assistant in Horticulture,
Macdonald College, Que.

G. C. Halliday, Sawyerville, Que.

M. H. Jenkins, Botanical Division, Central
Experimental Farm, Ottawa.

J. K. King, Macdonald College Demonstrator,
Shawville, Que.

D. E. Lothian, First Canadian Overseas
Contingent.

G. LeLacheur, Dominion Seed Branch,
Ottawa.

V. Matthews, Assistant to Superintendent,
Experimental Farm, Lethbridge, Alta.

K. MacBean, Assistant Experimental Farm,
Indian Head, Sask.

L. D. McClintock, First Canadian Contingent.

W. A. Middleton, Thomson Chemical Co.,
Baltimore, Md.

G. E. O'Brien, Editor of "Nova Scotia,"
Halifax, N.S.

A. E. Raymond, Macdonald College Demonstrator,
Cookshire, Que.

B. B. Richardson, Orchard Demonstrator,
Wilton, N. H.

F. N. Savoie, Prof. of Cereal Husbandry,
Ste. Anne de la Pocatiere, P.Q.

CLASS '14.

E. N. Blondin, Burlington, Vt., U.S.A.

C. F. Coffin, Manager of Riverode Farms,
Chagrin Falls, Ohio, U.S.A.

O. A. Cooke, Beech Ridge, Que.

P. R. Cowan, Botanical Division, Central
Experimental Farms, Ottawa.

R. Dougall, Ste. Anne de Bellevue, Que.

F. L. Drayton, Assistant Botanist, Central
Experimental Farms, Ottawa.

H. J. M. Fiske, Cold Storage and Forwarding
Co., St. Catharines, Ont.

D. W. Hamilton, Lecturer in Nature Study
and Elementary Agriculture, Macdonald College,
Que.

R. I. Hamilton, First Canadian Contingent.

C. M. Hodge, Macdonald College Demonstrator,
Richmond, Que.

R. R. Huestis, First Canadian Contingent.

R. E. Husk, Macdonald College Demonstrator,
Huntingdon, Que.

J. M. Leclaire, District Demonstrator,
L'Ange Gardien, Montmorency, Que.

W. L. Macfarlane, Fox Harbor, N.S.

G. G. Moe, Assistant Cerealist, Central
Experimental Farm, Ottawa.

G. W. Muir, Assistant Animal Husbandman,
Central Experimental Farm, Ottawa.

Wm. Newton, Field Crop Instructor, Department
of Agriculture, Victoria, B.C.

B. T. Reid, Assistant Field Husbandman,
Agricultural School, Woodstock, N.B.

T. F. Ritchie, Horticulturist, Experiment
Station, Lennoxville, Quebec.

A. O. Schafheitlin, Canning, Kings Co., N.S.

Spring.

O Spring, come soon and waken the
flowers,

For the birds are beginning to sing;

And the brook is whisp'ring and
babbling again;

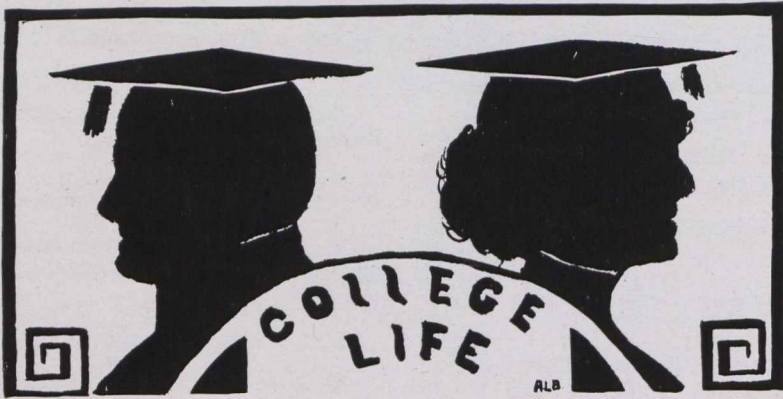
So hasten with showers, O Spring!

O Spring, stay not, old Winter is
yawning;

Take the coat off the buds on the trees;
Paint the fields and the woods with
thy beautiful green,

And call to the soft gentle breeze!

D. M. S., T., '15.



INTERCLASS DEBATE.

Sophomores vs. Freshmen.

A well-contested debate was held in the Assembly Hall on the evening of February 15th, the Sophomores maintaining "That it would be in the best interests of Canada as a wheat-producer if the Government should immediately construct the Georgian Bay Canal."

Mr. Milne, in opening the argument for his side, held that wheat was "King" in Canada, that its chief market lay across the Atlantic, and that the present production was very small when compared with the possibilities. The Government was urging increased production, since one-half of the wheat area in France and the whole of that in Belgium would yield nothing in 1915, and a considerable number of the producing population in these areas had been killed in the war. Mr. Milne maintained that the present congestion in the handling of wheat was due to inefficient transportation facilities and that increased production, which he estimated ultimately at 3,000,000,000 bushels, necessitated increased transportation. He showed that of the wheat which left Fort William rather over two-thirds was shipped via the United States, and that the new trans-

continental railways increased rather than decreased the congestion, through opening up new wheat lands. Mr. Milne did not consider that either the Hudson Bay route or the western route via the Panama canal would be of much help in reducing the congestion, and therefore urged the construction of the Georgian Bay Canal as an all-red route from the western wheat area to the Atlantic Ocean, since it had been surveyed and was considered a perfectly feasible project. Mr. Milne concluded with a summary of the advantages to be derived from the Georgian Bay Canal.

Mr. Tilden, in upholding the negative side for the Freshmen, spent some time in rebuttal, and quoted several authorities to show that, though the present route via the Welland Canal was longer than the Georgian Bay Canal would be, yet owing to the long stretches of open water it was the quicker, less dangerous, and therefore cheaper. In an able and business-like address, Mr. Tilden argued that it would be far cheaper to improve the existing waterway than to construct the proposed canal, which had been before the public for the last fifty years, but which neither Conservatives nor Liberals had dared to commence. He stated that the freight

was cheaper via Montreal than via New York, and that the bulk of the grain was shipped via New York because tramp steamers would not risk the dangers of the Lower St. Lawrence River, and that these would still exist if the proposed canal were constructed.

Mr. Tilden quoted from authorities that the Soo and Welland Canals could handle twenty times the present freight and that the open season for them was longer than for a more northern route. He also objected to the number of curves of short radius in the proposed canal and the narrowness of the waterway. He strongly urged the improvement of the Great Lakes and St. Lawrence route, both on account of the saving in cost and also on account of its safety. He objected strongly to the construction of the Georgian Bay Canal until at least the Special Commission appointed to enquire into the commercial value of the two routes had handed in their report.

Mr. Hetherington, in supporting Mr. Milne, stated that the Georgian Bay Canal would have two-thirds of the number of locks and three-quarters as much canal as the St. Lawrence route. He emphasized the following benefits of the former; that it was nearly three hundred miles the shorter, two and a half days the quicker and from two to two and a half cents per bushel the cheaper; that it was the safer, since Lake Erie was shallow and subject to sudden squalls. He held that it would hold the railways in check by competing with them, and that the power developed along the route would pay the interest on the construction of the canal and the annual upkeep. Further, that industrial development would follow the opening up of water power to the benefit of the west, particularly in the cheapening of lumber; and that it would tend to cheapen wheat and its by-products.

Mr. Brighton, for the negative, dealt with the question of the immediate construction of the Georgian Bay Canal from the financial standpoint, pointing out that at the present time, when revenue does not meet expenditure without special taxation, no Government would commit itself to the expenditure of the huge sum necessary. He maintained that the power developed on the canal would be of but little use, since the St. Lawrence River already provided more than was likely to be used for a long time in a settled part of the country. He stated that the Hudson Bay route to Liverpool would effect a saving of 720 miles, and 12 cts. per bushel to Liverpool; also that the grades on the railways to the Pacific were so low that grain could be transported that way without difficulty.

Mr. Milne put the five minutes allowed for rebuttal to most excellent use. He argued that the people along the Welland Canal were at the back of the movement to oppose the construction of the proposed canal; also that the open season on Hudson Bay was too short and closed too early to facilitate the transportation of wheat.

While awaiting the decision of the judges a quartet, composed of Messrs. C. and H. Williamson, Ruggles and Gibbs, rendered instrumental selections. Then followed the much appreciated solos by Mr. Avner on the piccolo.

The judges, Drs. Lynde and MacFarlane and Professor Barton, gave their decision in favor of the Freshmen, the points awarded being: Freshmen 69%, Sophomores 58%.

Professor Barton, in criticism, felt that it was unfortunate that the wording of the resolution was somewhat ambiguous, thus causing some discussion between the debaters as to its interpretation.

H. S. H.

POOR FATHER!

A stranger standing in Macdonald College Post Office on a Monday morning might wonder how the government authorities can handle all the mail which goes out from that institution of learning. The girls pour into the post office, deposit their mail in the box, and go to lectures feeling that they have done their duty. Many conjectures have been made as to what these mysterious letters contain, but it was not

all gone. Could you send me some more money by Thursday, as we are going to have a feed then? Will you ask mother to send me some cake and a chicken. We want chocolate cake. You sent me the money for my bookshop bill but I had to spend some of it for my class pin and the rest of it just disappeared. There is nothing more to say so I will close now.

Your affectionate daughter.



"Killing" time and having one in the Girls' Reception Room.

until a certain gentleman sent his daughter to Macdonald that he learned what the contents were probably like. As regular as clock work this gentleman received a letter from his daughter somewhat like this :—

"Dear Father,

Thanks so much for the money. I needed it badly enough but I'm ashamed to tell you my money has

P.S.—My board is due.

P.P.S.—Don't forget the cake, chicken, and money."

And as this long-suffering gentleman laid down his daughter's newsy letter, he was heard to remark, "And next week she'll write in again for money for her board, bookshop and class pin that I have paid three times already."

THE STUDENTS' COUNCIL DRIVE.

Certainly Dame Fortune had smiled upon the students of Macdonald College on that night of nights, the occasion of the Students' Council Drive, which took place on Friday, the nineteenth of February.

If anyone had chanced to take a peep inside the main entrance of the Women's Residence on this particular night, he or she might have seen a pleasant sight—merry-faced maidens and as equally good-humored attendants. We were all there; some bore a bundle, either a blanket or a quilt, which we should subsequently need to avoid the pranks of Jack Frost. Miss Reed, who had kindly consented to act as chaperon for our jolly crowd, joined us immediately and took part merrily in the escapades of the evening.

An impatient team awaited us outside, and how eagerly we scrambled down the steps and into the sleigh! When everybody was seated comfortably—or otherwise—we drove off. Our conveyance had not evidently been manufactured to suit its present number of occupants, and soon every one seemed to be endeavouring to change his position. When the hills were reached, the party decided to alleviate their weariness by a little exercise. Very soon, however, we concluded that this was not the usual procedure for a drive, and all decided to try the ordeal again. After a considerable amount of mathematical calculation on the part of the cavaliers of the occasion, everyone was packed in.

After an hour had elapsed, it was decided that the party should return; this was due partly to the fact that it was becoming late, and also that these same deep-thinkers remembered that a bountiful feed was in store for them. The homeward trip must have been a more comfortable one, for all of us joined in singing until the frosty air echoed with merry voices.

Last, but not least, Mrs. Wright's was reached, where a sumptuous repast awaited us; needless to say, it was heartily welcome. Mr. Sadler offered a lengthy and appropriate toast to our worthy president, to which the latter replied in a few well-chosen words. Hours of pleasure all too swiftly winged their flight, and soon, much too soon, the time came for leaving. We walked to the Residence, feeling that we had spent a most enjoyable evening, and one which we should long remember as one of the happiest of College reminiscences.

P. H., T. '15.

VOLUNTEER BANQUET.

On Wednesday evening, March 24th, an informal banquet was given by Class '16 to fellow class-mates who had volunteered for Over-Seas Service. The dinner was in honour of C. E. Boulden, G. F. Collingwood, E. A. McMahan, A. Kelsall, C. F. Peterson. After doing full justice to the menu, the toast to "The King" was proposed by G. Fenoulhet, and responded to by C. F. Peterson. "Our Alma Mater," proposed by J. G. C. Fraser, and ably responded to by L. W. Crothers. The toast "Macdonald Girls" was fittingly proposed by John Moynan, and answered by A. E. Hyndman. Last but not least, the toast, "Our Volunteers," proposed by the President of the Class, George C. Hay, was heartily received and responded to by C. E. Boulden, who showed that those who saw their way clear should join in and help bring this awful war to a finish. Already, more than twenty-five per cent. of the class had enlisted, and some were already with the first contingent in the trenches.

After class yells and College songs had been given, the banquet broke up.

J. G. C. F., '16.

SECTION "B" LITERARY SOCIETY.

The evening of March 8th was one of great excitement for Section "B." It was true that it was only the occasion of a literary meeting, but this one was welcomed with more than the usual amount of interest shown, for it had been suggested that we should have a debate. Besides, the subject chosen was one of special interest to us as lady-teachers. It was, "Resolved, That a pension is of more value to a lady-teacher of 35 years of age than a husband."

Miss G. Main, our able president, occupied the chair, and opened the meeting, introducing the speakers. The affirmative was upheld by Miss E. Massey-Bailey and Miss F. Kinnear, and the negative by Miss M. Harris and Miss L. Leonard. Both sides presented their arguments in a very able manner. The presence of numerous visitors manifested the concern which they felt in the judgment of such a decisive point. Miss Roberts and Mr. Dashwood had kindly consented to act as judges, and decided in favour of the affirmative.

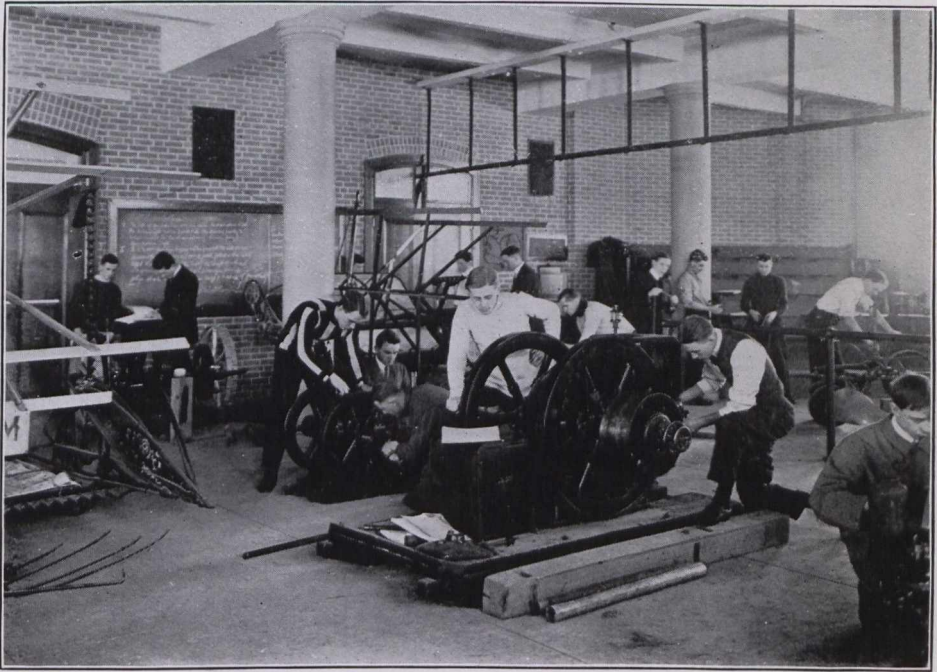
During the evening Miss Greene gave us the pleasure of listening to an exquisite piano solo, rendered with her usual skill. In the interval, which was occupied by the judges in reaching a decision, Miss Marion MacNaughton delighted us with one of her humorous recitations, for which she received a hearty encore, and to which she gracefully responded, thus diverting our minds for a few moments from the subject of the hour.

After rendering the College songs and the National Anthem in the usual patriotic spirit we returned to the residence feeling that we had spent a very pleasurable evening.

A. McK., T., '15.

PUBLIC SPEAKING CONTEST.

On the evening of Monday, March 1st, an opportunity was given to the more loquacious among the students of the School of Agriculture to test their eloquence by that of their rivals, in the annual Public Speaking Contest. The seven entries, combined with the various musical items, made the programme a particularly long and enjoyable one. Mr. J. H. King, in his opening speech, made an eloquent plea for the much neglected agricultural aspect of education. He was followed by Mr. J. H. McCormick, whose closely reasoned and compactly constructed talk on so abstruse a subject as "The Evidences of Evolution" was an excellent piece of scientific exposition. Messrs. J. E. McOuat and C. E. Boulden continued in a different strain and from different standpoints the suggestions offered by Mr. King. Finally, the war, the inevitable war, received its just share of attention in two excellent speeches from Messrs. L. C. McOuat and A. Kelsall, who dealt respectively with "Our National Responsibilities" and the somewhat forbidding and comprehensive topic of "Militarism: the War and its Consequences from a Socialistic Standpoint." Mr. L. J. Westbrook also dealt in a convincing and interesting way upon the attitude of the United States in the present war. It would not do to forget the pleasing musical items with which the programme was diversified, two well rendered songs from Miss Jean Hodge and Miss Doreen Hicks, an organ solo from Mr. Stanton, and some excellent violin solos from Mr. Casey, a visitor for the evening. On the return of the Judges, Dr. Snell, after commenting briefly upon the several speeches, announced that the first prize of five dollars had been awarded to Mr. McCormick, and the other prizes, in order, to Messrs. L. J. Westbrook, L. C. McOuat and A. Kelsall. J. L. D.



The Sophomore Class at *Work*



An Amalgamation of all the years enjoying a "Sing."

THE FINAL INTERCLASS DEBATE

That the debate of March 23rd, for the Robertson Shield, was the best interclass debate we have ever had was the officially expressed opinion of the committee of judges, and we feel sure that none of those who had the pleasure of being present would demur to their judgment. For the Freshmen, Mr.

Mr. Arnold opened with a very lucid exposition of the problem which the war had presented to the Minister of Finance. The inevitable increase of expenditure had been accompanied by an enormous shrinkage of commerce and consequently of revenue from import duties, and the Government had found it necessary to raise thirty million



CLASS '15 CHAMPION DEBATING TEAMS.

Messrs. J. E. McQuat, W. Sadler, J. H. McCormick and A. G. Taylor.

G. E. Arnold and Mr. G. D. Matthews supported the following resolution in opposition to Messrs. J. H. McCormick and A. G. Taylor, who on behalf of the Seniors contested it: "That for the purpose of providing a war revenue the Dominion Government was justified in increasing the duties on imported commodities rather than providing for an income tax."

dollars by taxation. Mr. Arnold contended that the increase of the customs duties was the best possible measure for raising the money, in that no new machinery was required for its collection and in that the effect upon the revenue would be immediate. He anticipated an objection to the increased imports on goods of British manufacture, and maintained that the increased prefer-

ence would help rather than injure British trade.

Mr. McCormick declared the negative opposed on principle to indirect taxation. He maintained that the increased duties would result in decreased imports and that the tax would thus defeat its own purpose. He contended that the budget was really designed to benefit the Canadian manufacturers, and he protested against a system of taxation the burden of which would fall most heavily upon the poor. In closing he attacked the campaign cry of "Business as usual, production greater than usual", declaring this cry a farce.

Mr. G. D. Matthews quoted Sir Richard McBride in support of his contention, that the poor should bear their share of the burden. He pointed to the fact that the Provinces, being constitutionally restricted to direct taxation, might wish to impose income taxes, and in at least one instance had already done so, and he contended that the Dominion Government should not impose new burdens in the same direction. He maintained that an income tax could not yield nearly the amount of revenue required, and quoted Sir Wilfrid Laurier in support of the contention that the imposition of an income tax would mean months of delay in the collection of the revenue, the need for which was urgent.

Mr. A. G. Taylor defended the income tax as sound in principle, equitable, thoroughly tested in other countries and universally recognized as the best means of raising a war revenue, easily collected, certain in amount, and adequate to meet the needs of the Government.

The committee of judges, Dr. Lynde, Prof. Barton and Dr. MacFarlane, decided in favour of the negative, who

were credited with 68.6 points as against 67.0 for the affirmative.

The Robertson Shield was then presented by Miss McGill to the Vice-Pres. of the Senior Class Literary Society, Mr. J. H. King.

The pranks of the Freshmen during the evening furnished much amusement. In addition to their yells and what would no doubt be classified by Mendelians as hybrids between songs and yells with noise dominant and music recessive, they took advantage of the judges' recess to decorate their debaters' table with a handsomely accoutered Buff Orpington rooster. The Chairman, Mr. Sadler, with ready wit, delivered an ultimatum refusing to share his authority with this bedizened upstart of the poultry yard and the Freshmen meekly resumed possession of their pet. Another amusing incident was the calling of time on the Chairman by one of his classmates in the midst of an elaborate address in which he was extending thanks to those who had contributed to the success of the Literary Society during the year. The tapping of the time-keeper's pencil caused a sudden stoppage in the flow of eloquence and we feel sure that the audience regretted that the signal was so promptly obeyed.

An interesting and unexpected feature of the evening's program was the enlisted men's singing of their own war-song. It is a bright, witty production, and if the boys fight with as much spirit as they sing they will do credit to the Canadian Contingent.

The singing of Mr. Tom P. Bissett of Montreal deserves a paragraph by itself. Seldom has it been the privilege of a Macdonald College audience to listen to a voice of such rare quality, controlled with such intelligence and with such refinement of feeling. In

Mr. Bissett, who has recently come from Scotland, Montreal has acquired a tenor whose value as an artist cannot be too highly appraised. Mr. Bissett's songs were "Songs of Araby," Liddle's "Farewell," "Macushla" and "Bid Me to Love". Miss Greene accompanied Mr. Bissett very tastefully, and Mr. Stanton played an organ solo during the intermission.

J. F. S.

SCIENCE LITERARY SOCIETY MEETINGS.

A meeting of the Home Economics Club was held on Thursday evening, Feb. 18. The meeting was opened with a few remarks by the President, Miss Cowling, in which she outlined the constitution of the Club and the rules of the debate. The subject of the debate was, "Resolved that Co-operation is a greater factor in the progress of man than Competition." The affirmative was upheld by Misses Gordon and MacGregor, while Misses Babcock and Black spoke for the negative.

Each speaker was allowed ten minutes for her speech and then the leader of the affirmative was given five minutes for rebuttal.

At the close of the speeches, while the judges, Miss Fisher, Mrs. Rutter and Miss Hill, were absent, Miss Munroe and Miss Portray favoured us with piano solos.

Miss Fisher gave the decision of the judges, which was 61 Competition, 70 Co-operation. Before giving the decision, Miss Fisher in a short speech complimented the speakers and gave some very helpful criticism.

A hearty vote of thanks was tendered by the President to the judges, and the meeting then adjourned.

A second meeting of the Home Economics Club was held in the Main Building, on Thursday evening, March 11th.

The President, Miss Cowling, gave a few opening remarks, in which she spoke of the sudden popularity of the Club with the other Schools. The minutes having been read and approved, the President asked Miss Fisher to speak to the Club.

Miss Fisher gave a most interesting address on the English Lake Country. To those who had been there the address made them see the beauties of the country again in their mind's eye, and to those who had not been there it told of pleasures to come.

After Miss Fisher's address, Miss Wright favoured us with a piano solo and after singing the National Anthem the meeting adjourned.

SHORT COURSE TEA.

On Saturday, February 20th, a Tea was given by the Science Short Course in aid of the Belgian Relief Fund.

The room was beautifully decorated with ferns, flowers, and flags, the Belgian colour scheme being carried out in the decoration of the small tables, candy booth and tea table. The latter was presided over in turns by Miss Fisher and Mrs. Rutter, Miss Hill and Miss Zollman, Miss McGill and Miss Thompson, assisted by the girls, who were dressed in white, with girdles of the Belgian colours.

The candy booth, which proved very popular, was "tastefully" decorated, and was in charge of four of the girls.

That the tea was a success was proved by the sum of ninety-eight dollars and fifty-four cents being cleared for the worthy purpose above mentioned.



Oh, What a Time we Had !

INFORMAL DANCE AT THE FACULTY HOUSE.

A very pleasant dance was given on Friday evening, March 19th, by five of the Lady Staff. The guests were received and made to feel *perfectly* at home by the Misses Zollman, Roberts, England, Armour and Stewart. Added pleasure was given by the fact that no formal dress was worn, the ladies wearing summer costumes of middy design, while the fellows were bedecked in white with the unusual privilege of a soft collar.

About twenty fortunate couples were present and succeeded, without any effort, in having the time of their lives. Refreshments, always welcome to students, gave variety to the evening.

The music was especially good and was commented on quite frequently by the guests of the occasion. All those present unite in thanking the above-mentioned ladies for a very enjoyable evening.

THE SIXTH ANNUAL MASQUERADE.

It is always a great pleasure to go back to the old Residence, even when it is adorned in its every-day garb; but it certainly gives one a thrill of delight to be greeted by a very smartly dressed janitor, find the corridors decorated with every kind of sporting article imaginable, and run into bunches of disguised and very excited fellows. You can't help but realise that this is the night of nights in the building—the long expected night of the masquerade.

The gymnasium did not have the elaborate scheme of decoration used in former years, and very wisely so too; but pennants, flags, models of class pins and colored lights were arranged most tastily, so that it was simple and at the same time very effective. The moon

again occupied its old position over the staircase, watching over the revellers and indicating by its age the gradual waning of the evening.

The costumes were very attractive, and in many ways surpassed those of former years. Among the ladies several patriotic impersonations were to be seen, also hospital nurses, Italian, Spanish and Egyptian ladies and others in Pierrot costume, the very amusing three old maids of Lee, reminding us of cartoons of the Kaiser "back to the front," and the three very charming "Choice Citrous Fruits." The men had many original "get-ups," prominent among which were the Chanteclerc, the Italian organ-grinder, and the dear little "over-grown infant."

As usual, we were well guarded by our soldier and sailor boys and much amused by the clowns and pierrots.

The moon was nearly full and we were almost empty, when, at the end of the ninth dance, a move was made for supper. Here the greatest improvement of all former years was noticed. Several men of the junior years very kindly volunteered to serve all the refreshments, and the scheme worked splendidly. There was none of the pushing and waiting around the long table, but every thing was brought to you quickly and quietly.

The floors were very good and the orchestra fine. Before you could well realize what a perfectly splendid time you were having, the evening had come to an end, and it was the universal opinion that it had been a huge success. Our sincerest thanks and congratulations are due to the committees for their very excellent work, and they can rest assured that they were instrumental in giving a very large crowd the time of their lives.

L. F. D., 14.

TEACHER-SCIENCE DEBATE

The assembly hall was the scene of great excitement on the occasion of the debate between Teachers and Science. The interest seemed even greater than at the other inter-class debates which have been held in the assembly hall this year, and the speakers ably maintained that interest throughout. Teachers came in first and occupied one side of the hall, soon followed by Science who made a very effective entry. Songs

Miss D. Macgregor, seconder. Miss Effie Robinson presided. Everyone joined in the singing of the College songs and the National Anthem. The chairman's remarks were followed by a violin solo by Miss Portray.

The debate was ably opened for the affirmative by Miss Massy-Bayley, who defined the Press as including every printed word. Owing to the wideness of the field opened by this definition, the Affirmative signified their intention of



A Rehearsal before the Masquerade.

and cheers were given alternately by Science and Teachers. Some of these were written especially for the occasion and were greatly enjoyed by the audience. The subject for debate was, "Resolved that the Press exerts a greater influence than the Platform." The affirmative was upheld by the Teachers, Miss E. Massy-Bayley, leader and Miss Z. Prather, seconder; while Science had the negative side to defend, with Miss A. Gordon as leader, and

confining the "Press" to mean newspapers, periodicals and tracts. For the Negative, great stress was placed on "personal magnetism" and "the spoken word," as giving platform speakers a greater influence. The rebuttal was very strong and the leader of the affirmative pointed out that some inaccuracies which had come up in the defense of the negative were such as might occur in any platform speech, and that this was one weakness of platform speeches.

While the judges, Prof. Lohead, Mr. Hammond and Mr. Summerby, were out, Miss Thom sang very charmingly and Miss Grace England favored the audience with a piano solo. Prof. Lohead, as chairman for the judges, rendered the decision. The audience was in suspense for a few moments and the final award was—Teachers, 80 points and Science, 77. In the opinion of the judges, Teachers had scored highest in matter and Science in delivery. Prof. Lohead cautioned the boys to look to their laurels in the matter of debate. Teachers' songs and yells were again given and the singing of the College songs closed a very successful meeting.

ORCHESTRAL CONCERT.

On March 27th, the Students' Orchestra of McGill University, conducted by Mr. C. Williamson (T. '14), gave an excellent Concert in the Assembly Hall, to a crowded and appreciative audience. Dr. Harrison, in a few introductory remarks of welcome, congratulated the orchestra upon the taste evinced in the choice of music. The programme was as follows:—

- Overture—
 "Trumpeter of the Fort"Gruenwald
 ORCHESTRA.
- Soprano Solo—
 "Berceuse"Godard
 MISS LILIAN THOM.
- Selections—
 (a) "Evening Song"Schumann
 (b) "The Lark"Glinka
 ORCHESTRA.
- 'Cello Solo—
 "Romance"Von Goens
 MR. YVES LAMONTAGNE.
- Selection—
 "Aragonaise"Massenet
 ORCHESTRA.

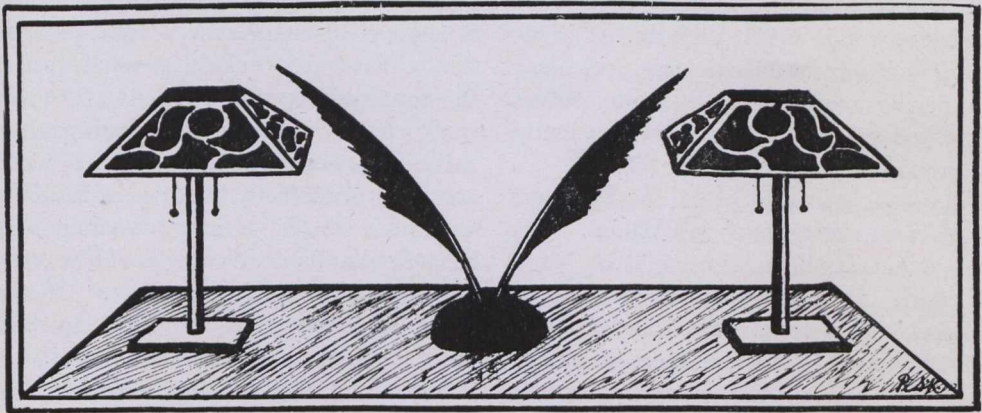
- Songs—
 (a) "Dawning"Cadman
 (b) "Down in the Forest"L. Ronald
 MASTER HERBERT RACE.
- Violin Solo—
 "Hejre Kati"Hubay
 MR. PHILIP PRESNER.
- Clarinet Solo—
 "Concertino"Weber
 MR. DEAN ROBINSON.
- Soprano Solo—
 "Sognai"Schira
 MISS LILIAN THOM.
- Selection—
 "Remick's Hits"Lampé
 ORCHESTRA.
- Flute Solo—
 "La Favorite de Vienne"Terschak
 MR. JULES AVNER.
- Overture—
 "Hungarian Lustspiel"Keler Bela
 ORCHESTRA.
- Selection of National Airs.....

GOD SAVE THE KING.

Although unforeseen circumstances prevented the attendance of the full number of players, the orchestra was able to give a very able account of itself, playing with a precision and untiring freshness which never failed. Miss Lilian Thom sang with artistic charm, being recalled on each appearance. Master Herbert Race, a boy soprano, received quite an ovation for his songs on account of his purity of tone and clear diction. The contributions of the instrumental soloists were all adequately rendered and enthusiastically received.

We wish the McGill Students' Orchestra, and its conductor, continued success, thank them for the great pleasure they gave us, and hope we may have them here again next season.

G. A. S.



Under the Desk Lamp.

THE MODEL DIPLOMA FOR STUDENTS IN AGRICULTURE.



It is over two years now since a teaching diploma for an Agricultural student was first mentioned in public. During those two years, after considerable discussion, the Agricultural Model Diploma as it stands now was arrived at. In the fall number of the MAGAZINE, on page 44, a description of the course is given. In the College Announcement of 1914-15, on page 68, a full account of the diploma, with regard to the necessary qualifications which an applicant must have and the time which must be put in, is carefully mapped out. Briefly the qualifications are: The applicant must have attained his school-leaving certificate or an equivalent. A restriction which is put on is that at least *five Quebec students* must apply before the course will be begun. Students from other provinces must pay a fee of \$75.00 on entering. This fee is returned at the end of one year's teaching. Quebec students are required to promise to teach one year in the Province

or as an alternative pay the fee of \$75.00.

During the summer of 1914 considerable time was spent by those who believed the course would be a benefit but very little success accompanied their efforts. Even as late as last July there seemed to be practically no applications to Agriculture from Quebec students who had their school-leaving certificates. Later in the season, when more applications came in, the College authorities sent a specially marked announcement and a letter to each such applicant calling his attention to the course (as discussed in the announcement). This did not seem to help things along any, for no one applied nor even inquired further about the course. The result is that at present there is no one making use of the opportunity of obtaining in five months a certificate which takes fully ten months time under all other circumstances.

Why is it that no one seems in the least interested? They cannot have spent much time in figuring out, either from a financial or an educational basis,

and a few words will show where the Diploma would aid financially. A great many of our students (if prevailing conditions are correct) find themselves none too well off for money, especially in the last two years of the course.

The course in the School for Teachers would cost not more than \$100.00. The time spent at the course could be made to count for much more than if spent in most other ways. The extra outlay, \$100.00, would be more than made up if at the end of the second year the student taught for a year. At the present rate of progress, a salary as principal of a Model School of \$800.00 could be assured. Out of this, \$400.00 could be laid aside without any difficulty. This means that in one year one could save, together with his summer savings, almost enough to put him through his two final years in Agriculture. Surely this is a strong inducement to those to whom shortage of money is a source of worry.

On the other hand, it would pay almost any student to teach for one year. The self-control, loss of self-consciousness, and the general improvement which even one year's teaching gives cannot be over-estimated, and it can be safely said that a person who has taught *successfully* will be more in demand as a lecturer than one who has not.

The work taken up would be of great advantage to anyone because it deals with practically the opposite side of education to that dealt with in our Agricultural course. An opportunity to study such subjects as Education, with Psychology and the effect which outside conditions have on the brain; History of Education; History; English; political Geography—must be considered important. A knowledge of these gives a

person a stronger hold on himself and broadens his horizon. The stipulation that three periods a week during the first year must be spent at this work should not frighten anyone, for those who could take up the work are exempted from lectures in English, and those who have taken up Chemistry in their Academical work could be very easily made exempt from it. If the course is entered in the right spirit a great deal of profit can be derived.

Incoming students may consider that the sooner they obtain the coveted B.S.A. the better for them, everyone and everything, including the country. The only thing to do with such a thought is to "Forget it," to use a College phrase. Do not be in too great a hurry to get through College, for once through one can never get back.

As a parting word of warning, we would like to have it understood that this course, from all sides, is well worth taking up; that a great many in the present first year who have not the necessary qualifications fervently wish they had (so that they see its value); and lastly, that applications must be made during the coming summer or the opportunity will be gone.

WELCOME TO MISS STEWART.

Who was there among us who did not feel that we had lost, by Miss Mac-Millan's death, one who possessed a strong character which had its effect on all those under her care? A great many times the thought was expressed that the College authorities would have a hard time to replace her, but to the surprise of the students in Agriculture, and others who have been fortunate enough to meet the new Superintendent of the Men's Residence, these fears were found groundless. Everyone who

has had the opportunity of meeting Miss Stewart has found in her a friend and a lady of great personality. As one whose first appearance was a welcome event to all and as one who has made a lasting impression on all,—Miss Stewart is cordially welcomed into the College by each and all of us. Her extremely capable care of those who happen to be ill and her kindness throughout have won for her a friend in everyone, but particularly in the School of Agriculture.

The men students in Residence extend to Miss Stewart a hearty welcome and realize that they have a person in their building whose presence they greatly appreciate.

ILLUSTRATIONS.

An appeal for illustrations was made in our last issue. We wanted pictures that would arouse a common interest, and as an inducement we offered a two years' subscription to the MAGAZINE to the person sending in the best three snapshots. How many persons tried to help us out by contributing? NONE. However, although we received no assistance from the direction we expected it, we have to thank Mr. J. M. Gibbon, General Publicity Agent of the C.P.R., very much for the help he gave us. The official photographer of the C.P.R., under his instructions, visited Macdonald and took several snapshots of the buildings, laboratories, and college life in general. Although under no obligation whatever, Mr. Gibbon gave to the MAGAZINE a dozen splendid cuts. We are sorry for our own sakes that we could not see our way clear to use all of these, but wherever we could, we have been only too glad to insert them. This generosity on the part of Mr. Gibbon has given us

just the pictures we wanted and has helped us considerably along financial lines. We again thank him very sincerely for his kindness.

EXCHANGES.

We find it impossible to do justice to the number of exchanges we receive. During the past two months we have had time to look through the monthly publications and one kind of writing runs through almost every magazine. It is originality.

The *Argosy*, in both its March and April issues, has considerable literary talent displayed. The articles actually hold the reader and are very entertaining. Everything in this magazine seems to be under good control.

The *A. S. A. Magazine* (Alberta Schools of Agriculture) is an addition to our list of exchanges. It contains by far the greatest number of cuts of any magazine received and is a credit to the board managing it.

The *Alumnus of Iowa State College* as usual leads all for the high standard of its cuts, quality of paper, and finish, but since it is the product of alumni it cannot rank with the others.

From various sources we have received bulletins, more especially those of agricultural intelligence, which contain a great deal of information. Each month the *Labour Gazette* and the *Agricultural Gazette* come to us. Both are filled with useful facts.

Among our other exchanges we wish to acknowledge with thanks: *King's College Record*, *O. A. C. Review*, *University Monthly*, *University of Ottawa Review*, *Acta Victoriana*, *The Sheaf*, *Conservation* (the report of the Commission of Conservation) and the *Connecticut Campus*.

MACDONALD WAR SONG.

When we're standing in the trenches with the
mud up to our knees
And the Germans firing at us all around,
When we think of old Macdonald and the girls
we used to tease,
It will cheer us up and help us hold our ground.

CHORUS:—

Then we'll hold the ground we've conquered,
—————over there.

When we think of all the milk, the bread, the
butter and the buns,
And the juicy beef and 'taters nicely browned,
Then compare them with the bully beef, God
help those murd'rous Huns,
For we'll turn them into corpses all round.

CHORUS:—

When we've scattered all their armies and we're
marching on Berlin,
When the Kaiser is retreating with his swine,
Then we'll give a good old "Fait ye " as we ram
our bayonets in,
And the German blood will run as red as wine.

CHORUS:—

When the sun once more arises on a field where
strife is o'er,
And the whining, writhing German swine are
stilled.

When we've washed our comrades' faces of their
final bloody gore,
Then with thoughts of coming home we'll all
be thrilled.

CHORUS:—

For we're proud to be Canadians
—————ever more.

We may never see again the friends that we have
loved and lost,
For their duty done they bravely faced their
death,

But the mem'ry of their brotherhood and all that
friendship cost,
We'll remember and we'll praise with every
breath.

CHORUS:—

We will praise our comrades' mem'ry,

And we'll make them live for aye who died
for us.

When we've proved our faith and loyalty to
country, home and you,
Then to Old Macdonald, girls, we will return,
When we've crowned you with our laurels, just
one thing we'll ask of you,
"Give us then the home and love for which we
yearn."

CHORUS:—

We'll be coming back again, girls,

—————
We are coming back again to be with you.

Sung to the music of "When the Roll is called up yonder."

Real Friends.

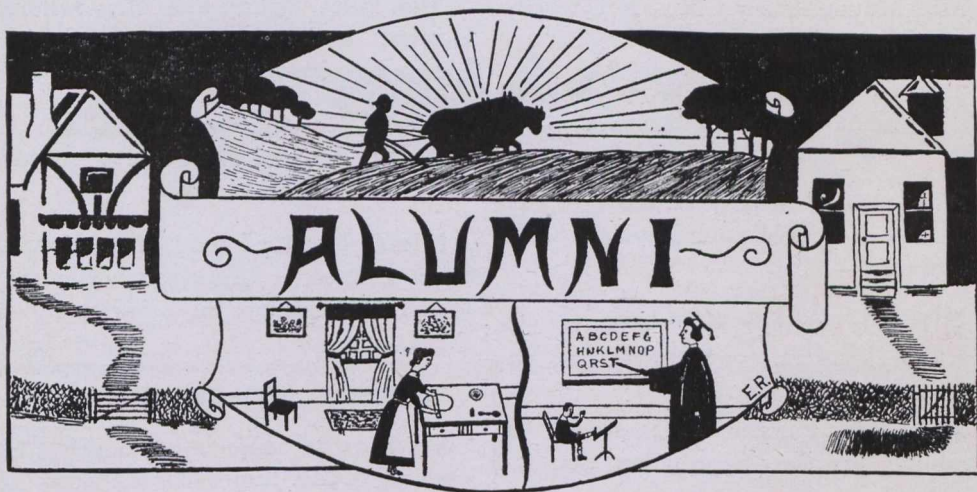
Call him my friend who seeks me in my den for quiet talks
Which light the weary day;

Call him twice friend who knows exactly when
To go away.

Call him my friend whose voice is always free
In my defence when critic's words are rough;

Call him twice friend who understands when he
Has said enough.

—EXCHANGE.



SCHOOL FOR TEACHERS.

Miss Marguerite Collins, Class '14, is teaching in the Riverside School, Montreal.

Miss C. Nicholson, Elem. Class '15, is teaching in Verdun this year.

Miss Edna McLeod, Class '14, is teaching in a school in Stanbridge East, Que.

Miss Lillian Dickson, Class '14, is teaching in the Berthelet School, Montreal.

Mr. G. Gibson, Class '14, is principal of the Sawyerville Model School.

Miss Myrtle Irwin, Elem. Class '15, is teaching in Shefford Vale, Que.

Miss Isabel Dettmers, Class '14, is teaching in the Dufferin School, Montreal.

Miss Winnifred Planche, Kdtn. '14, is teaching in the Edward VII. School, Montreal.

Miss Jennie Smith, Class '14, is teaching in a school in Compton, Que.

Miss L. R. Cavers, Model '11, and Miss Winnifred Cooke, Elem. '14, are teaching in the Model School at Ste. Agathe des Monts, of which Mr. W. H. Brady, Model '10, is the Principal.

Miss Nora Brownrigg, graduate of Class '14, is teaching in the Como School.

Miss Amy Moore, Class '14, is teaching in the Mount Royal School, Montreal.

Miss Mildred Goodfellow, Class '14, is teaching in a school in Athelstan, Que.

Miss Frances Joss, Class '14, is teaching in the Delorimier School, Montreal.

Miss Muriel Way, Class '14, is teaching in a school in Verdun.

Miss Ada Cornell, graduate of Class '14, is teaching in the Mount Royal School, Montreal.

Miss Evelyn Quigley, Class '14, is teaching in the Alexandra School, Montreal.

Miss Maude Fraser, Class '14, is teaching in Megantic, Que.

Miss A. Gilker, Class '13, is teaching in the William Dawson School, Montreal.

Miss Addie Schoff, Class '14, is teaching in the Mount Royal School, Montreal.

Miss K. Wilkinson, Class '11, is teaching in the Earl Grey School, Montreal.

Miss M. Parmelee, Class '11, is teaching in the Strathcona School, Montreal.

SCHOOL OF HOUSEHOLD SCIENCE.

We are pleased to announce the marriage of Miss Gertrude Norton, of Class '14, to Mr. Harold Bean.

Still another break has occurred in the ranks of Class '14, the latest deserter being Miss Edith Findlay, who was married on March the 7th to Mr. Austin Bunyan. We wish both our old class-mates all happiness.

Miss Norma Atkinson, of Class '14, is in Paisley, Ont., doing Settlement Work.

Miss Anna Stockwell, of Class '14, is assisting in Kindergarten Work in Yarmouth, Maine.

Miss Edith Reynolds, of the Autumn Short Course, was recently a week-end visitor at the College.

Miss Marjory Allan and Miss Ada Richardson, of Class '14, are doing Settlement Work in Ottawa, Ontario.

Miss Alice Pickup and Miss Mildred Dowler, both of Class '14, visited friends here recently.

Miss Kathleen Martin, of Class '14, is taking a special course in Dress-making.

Miss Helen Macdonald, of the Autumn Short Course, is lecturing at Women's Institute Meetings in Charlottetown, P.E.I.

SCHOOL OF AGRICULTURE.

We have pleasure in announcing the wedding of Mr. James Gordon Ross, '13, to Miss Minnie Kern, at Winnipeg, Manitoba.

Miss M. E. Kitchener, of Class '17, has completed a course in nursing at the General Hospital, Montreal. She left for England on April 3rd on the Lusitania from New York. On arrival in England she hopes to leave for the 'front,' where she is to help in relieving the sufferings of the wounded.

Mr. D. F. Hume, '17, has left College for his home at Ottawa.

"Fat" Lyster, we are glad to say, is progressing favourably after a severe attack of typhoid fever. He has now returned from the General Hospital to his home in Kirkdale, Que.

John R. Gaetz, '16, who has recently undergone a very serious operation for appendicitis, is reported as progressing favourably. His former classmates join in wishing him a sure and rapid recovery.





BASKETBALL.



BASKETBALL, we are extremely sorry to say, has not proved so encouraging to the students this year as formerly. This is, without doubt, due very largely to the fact that we had no intercollegiate meet this season with the Ontario Agricultural College at Guelph. Both our first and second teams showed a lack of practice and proved to be in poor physical condition in almost every game played this season.

On Feb. 8th, our first team played at the Central Y. M. C. A. where they were very badly defeated, the score being the highest of the season. Our team, however, was handicapped for two reasons, firstly because they were playing in a gym. to which they were unaccustomed, and secondly, because Evans, one of the best men on the team, was unable to play. The game, therefore, proved an easy victory for our opponents.

The return match between our first and second teams and the first and second teams from the North Branch Y.M.C.A. was played at Macdonald on Feb. 8th. Here Macdonald again proved itself inferior to North Branch in basketball, although the match between the first teams was considered in many respects the best of the season. This match was very much easier to referee than many of the preceding ones on account

of there being fewer fouls and a much friendlier feeling amongst the players. Owing to the fact that Aird was unable to play and that Roy was severely injured a few minutes after the game commenced, Macdonald was again at a disadvantage, with the result that the game ended with a score of 51-28 in favor of North Branch.

The game between the second teams was a very close contest, but when the players had still ten minutes to play, the score being about four points in favor of the visiting team, a very unwelcome report, that of Miss Mac-Millan's death, was brought in, which necessitated stopping the game.

On Feb. 27th we were again visited by the Central Y.M.C.A. and the game proved very interesting and exciting at times, as both teams were very evenly matched, but the visiting team had the advantage of having more men than necessary and could therefore replace their players at various intervals. Our men appeared to hold their own pretty well during the first part of the game but condition began to tell towards the end, and the game ended in favor of the visiting team, the score being 63-43.

The return match between Westmount and Macdonald, which was eagerly anticipated by everyone, was played in our gym. on March 6th. Both teams were very evenly matched in every way and neither one had any advantage over the other. The score increased



SENIOR BASKETBALL TEAM.

gradually on both sides until, when time was called, the teams were on even terms, with a score of 33 all. During the overtime period our men put forth an extra effort, on account of it being the last opportunity of redeeming themselves for some of the failures which they had had in the former part of the season. They managed during this period to win three more points, thus making the score 36-33.

In the first part of our account of the games we mentioned that our players did not show the same form as players of some former years. We do not wish to give a wrong impression. A large majority of our best men are obliged to play on and practice with two of the major sports, especially hockey and basketball. This not only takes up too much of their time but injures their physique and, in some cases, is responsible to a very large extent for the "poor condition" referred to above. We hope that another season will see a better balanced state of affairs.

W. D. H., '17.

HOCKEY.

MACDONALD vs. LACHINE.—2-3.

On February 13th, Macdonald met Lachine on the college rink in a very fast overtime game of six-man hockey. The game was closely contested throughout. At the end of the first period the score was 1-0 in favor of M.A.C., the second period changed it to 2-1 in favour of M.A.C. and in the last minute of play Bell, the Lachine center, tied the score. In the 10 minutes' overtime play Bell again got through our defence for a tally, making the final score 3-2. The scorers were Hyndman and Skinner for Macdonald and Bell for Lachine.

MACDONALD vs. ARTS, '18.—5-6.

On Feb. 17, M.A.C. lost to Arts '18 on our own ice which was rather soft. The game was very slow and rough, as

compared with the previous week's game, for the McGill boys did not show anything startling and M.A.C. was decidedly off color.

The game started with a rush and within two minutes Skinner and Hyndman had both scored for Macdonald. At the start of the last period the score stood 6-2 in favor of the visitors. Our team then seemed to realize that they must pull together again, but after a hard fight they were only able to bring the score up to 6-5 in favor of McGill when time was called.

The scorers for M.A.C. were Hyndman, 2; Skinner, 2; Aird, 1.

This game ended the season which, though it was not very successful from a winning standpoint, was very successful when one considers that the team could get very little practice owing to the weather and the fact that it was very hard to get teams to come out to play on an open rink.

□ □ □

The outlook for next year's team is very bright, for nearly all of this year's team expect to come back, and there are rumors of several good players coming in in the freshman class, though Macdonald can never hope to have a really good hockey team until she gets a covered rink and a little more college spirit among the students.

At a recent meeting of the team Hyndman was unanimously elected captain again and Aird manager for 1916. We wish them all possible luck, and hope that the students will aid in making it the most successful year that M.A.C. has ever known.

The men who played in 75% of the games and thereby won their M's are:—

- | | |
|----------------|-------------|
| Hyndman, Capt. | Wilson |
| Skinner | Todd |
| Aird | Hand |
| R. J. M. Reid | J. Buckland |

J. S. H., '17.



COLLEGE HOCKEY TEAM.

THE INTERCLASS GAMES.

The Interclass games are all finished now and the Championship decided. Throughout the year a great many changes in the schedule delayed the dates of the final games. At the beginning of the year, the wisecracs had the games figured out to suit themselves. This is how most of them figured it out: the Seniors would win all the baseball games and lose the basketball; the Juniors would win two basketball and two baseball with the chances of winning another basketball; the Sophs figured out to about the same as the Juniors and the Freshmen were allotted one baseball and one basketball as their possible wins. This figuring showed that the championship issue lay between the Juniors and Sophomores. This proved to be actually the case.

Some of the games went as predicted, but there was more than one surprise before the last game was played.

In the Soph-Freshmen basketball game, the Sophs had a walk-over, winning by the score 49-10. Skinner and Hand were the stars of the game, scoring from all positions on the floor. In the baseball game between these two classes, the Sophs easily defeated the Freshmen. The Sophs had all the luck and won 15-2.

The Junior-Soph game in basketball was noted for being the cleanest interclass game played here for a couple of years, the Juniors winning to the tune 30-16. The baseball game between these classes gave one of the surprises of the year. The game was even throughout till the last inning, when the Sophs had a string of good luck and won by scoring the needed run, the score ending 10-9.

The Junior-Freshmen game of basketball was noted for the aggressiveness of the Freshmen who played a hard game against a much heavier team.

The surprise of the season came on the

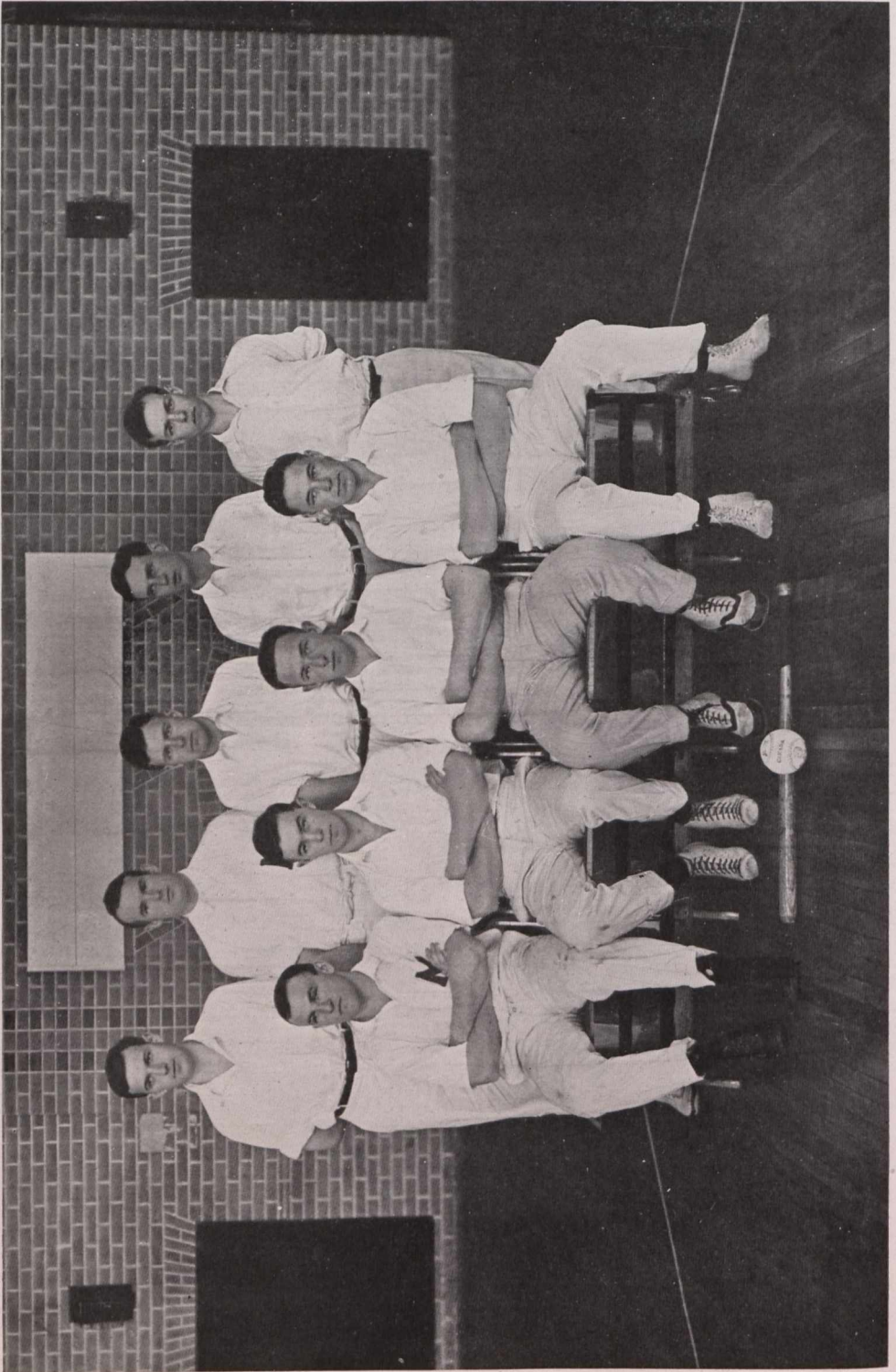
23rd of March, when the Juniors defeated the Seniors in baseball by the close score of 10-8. This game was very interesting for the spectators, as the game was close and without an error in the whole game. This game marked the last of the interclass games, for although the Seniors still had two basketball games to play, they forfeited these games, one to the Sophs and one to the Juniors.

The season ended with the Juniors winning five games, giving them the *Robertson Shield*, emblematic of the *Indoor Sports Championship*. The final standing of the classes was as follows:—

	Won	Lost
Class '16.....	5	1
Class '17.....	4	2
Class '15.....	2	4
Class '18.....	1	5

BASEBALL.

The Indoor baseball team has suffered more because of some of its members enlisting for the front than any other branch of sport at Macdonald. The outbreak of the war saw the disbanding of the Military League in Montreal, consequently we could not rely on games with outside teams, other than those the Faculty were kind enough to give us. A series of seven games was arranged with the Faculty team, the total number of runs to decide the winner. Shortly after the third game, the College team disbanded, owing to some of its members enlisting in the various units going to the front, so it was decided to cancel the remaining games of the series. Five members will be lost by graduation, but from the present material in the other years, a strong team can be counted on to represent Macdonald next term. Walter Sutton was the unanimous choice of those who won their M's for next year's captain.



COLLEGE BASEBALL TEAM.

Girls' Athletics.



INETEEN fifteen has been a banner year in the Athletics which have been upheld by the girls.

Basketball was the only game in which we played with a league, and although both the first and second

teams were unfortunate enough to lose the championship, still it was lost only by very little in both cases, and the work done was exceptionally good.

The first game, played against Victorias, took place out here in the men's gymnasium. This created considerable



FIRST BASKETBALL TEAM.

Back Row—P Leet, A. Reid, G. Armour, E. Binning.

Front Row—G. Cornell, Miss Roberts (Coach), J. Hodge (Capt.).

interest as it was the only home game played this season. The other two games were played in town, the first of which we won; the second, which meant the championship, was won by Phys. Ed.

The girls' hockey team of the past season has also done good work. Two games were played against R.V.C., the first of which was won, the second lost by our girls. In both cases the score

was 1-0. We were unable to arrange for another game, so it remains a tie.

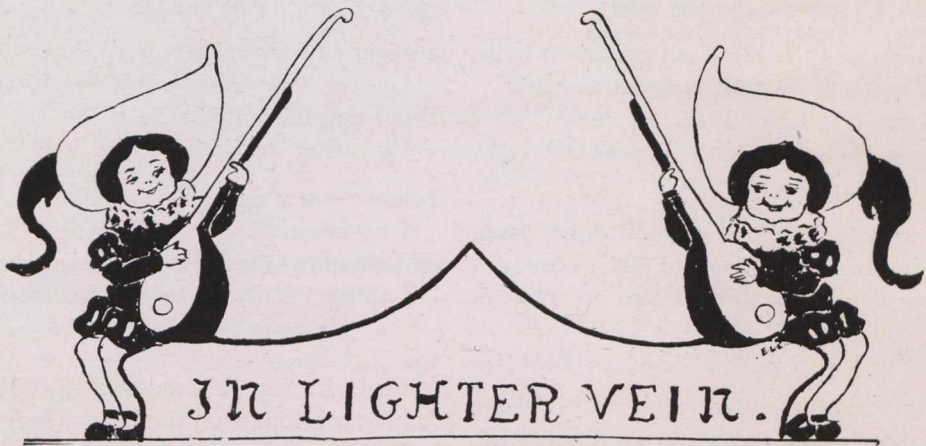
In indoor baseball this year we have not played any outside games, but there have been several very interesting practice games between Teachers and Science. On Monday, April 26th, there will be a game between these two teams which will decide for a trophy, given by the Athletic Association of 1914.

G. C.



SECOND BASKETBALL TEAM.

Back Row—M. Craven, M. Guthrie, S. Hodge, E. Stewart.
Front Row—A. Melon, Miss Roberts (Coach), B. Leach (Capt.)



HER WAY AROUND IT.

Lady (about to purchase military head gear) to her husband: "I know it's more expensive than the others, dear, but—well, you see, you're too old to enlist, and I really feel we ought to do something."—*London Punch.*

□ □ □

"Did you give the gold fish fresh water, Nora?"
 "No, mum, they ain't drunk what they had."—*Princeton Tiger.*

□ □ □

Mrs. Murphy: "The grocer has just told me that candles have gone up on account of the war."

Mrs. O'Reilly: "Well, fer the love o' Mike, phy on 'arth can't those Germans foight by daylight."

□ □ □

Prof. Stanton, lecturing in music: "Transition is a movement from one flat to another. It occurs frequently in music. . . . also in study hour."

□ □ □

D. H.: "Why cannot molecules be seen with the naked eye?"

Miss P.: "Because they are invisible."

AT THE MASQUERADE.

M. T-n-y.: "How do you like my costume, Mr. Presley? I'm a page."

Pres.: "You look more like a volume."

□ □ □

We notice that the Seniors are indulging in considerable extra liquid refreshments in the way of aqua pura. We presume this is due to the excess evaporation of moisture from the stomates of the leafy portion of their upper lip.

□ □ □

Prof. K.: "In the sentence 'Pants to the place from whence he flew,' what words are omitted?"

Miss H.: "He took the——"

□ □ □

Prof. K.: "We do not mix all kinds of things together but separate them into proper places. What would you say if a farmer put hay, oats, beans and corn all together?"

Ew-rt: "Chickenfeed."

□ □ □

Mitchell, laboring under the great load of pulling up the bob-sled: "Well, this is the great drawback of coasting."

RUFUS AN' DE FORD.

When dat lit'le ole Ford begins to balk,
An' stops in de road inclined to gawk,
Ah can't fix him lak ma ole mule,
Cause de whip don't furnish de right
kind of fuel.

So ah lets dat Ford sit right down dere,
An' opens up de hood to gib it some air.
Den ah oils up de gink pin an' puts in
de gas,
And gibs it a pink pill an' a cole water
bath.

For sore spots, raw spots an' differential,
Ah pours in de Lysol, it does mighty well.
Den ah takes a lit'le string an' bounds it
up new,
An' adds a lit'le mustard an' slaps on de
glue.

If de tires am bum ah use a mustard
plaster,
An' to blow dem up ah talks a lit'le
faster.
Den ah turns de crank an' de engine
sings a song,
An' we's an' de Ford goes rambling
right along.

□ □ □

Mr. Jull, in Poultry: "Mr. White,
how much food does the average fowl
consume in a year?"

Mr. Wh.: "2,000 lbs."

Mr. Jull: "You must be thinking of
that bird that was at the masquerade."

□ □ □

Miss McG.: "Mr. B., do you believe
clams have brains?"

George: "Certainly. They know
when to shut up."

□ □ □

Prof. Barton: "Meat has been chilled
for 12 years and at the end of that time
was used for consumption."

Fenoulhet: "Would you class that as
young beef?"

NONSENSE.

I never saw a purple cow,
I never hope to see one,
But I can tell you, anyhow,
I'd rather see than be one.

I never saw a molecule,
I never cared to see one,
But should things come by German rule,
I think I'd like to be one.

□ □ □

Prof. L. (in Entomology): "These
aphids are found on the beech (beach)."

Collingwood to Kelsall: "I wonder
what they find to eat in the sand?"

Kelsall: "They eat the sand which
is (sandwiches) there, of course."

□ □ □

Colonel, talking to an old Irish friend:
"Well, Pat, I'm at the head of the
Tipperary Militia."

Pat: "By gorry, I'd thought as much.
Ye've got such a foine malicious look."

□ □ □

She: "Have you noticed lately that
there seems to be a coolness between a
certain couple here?"

He: "Yes. The trouble is they're
both too hot-tempered."

□ □ □

Elsie McO., about to construct plans
for a horse barn: "Say, George, how
many feet does a horse stand on? Nine
or ten?"

Chorus of Horts, Generals and little
children in the rear: "Four, you *Boob*."

□ □ □

King, in dining-room: "Pass up the
grease."

Voice at end of table: "What's
King shouting about Greece for?"

Roy:—"He'd be more patriotic
if he shouted for his own country a
little."

Teacher in day school: "Willie, what would you value the world at?"

Willie: "One dollar."

Teacher: "And how is that?"

Willie: "Because it contains four quarters."

□ □ □

Dr. Savage: "Taylor, what is the temperature of the horse?"

Taylor: "101° centigrade."

Dr. S.: "We're not talking about boiled horse."

□ □ □



Will the Book Agents ever come up against it?

□ □ □

King: "Well, Robinson, are you growing a *mustache* too?"

Robinson: "Sure. I'm a B.A. now."

King: "How's that?"

Rob.: "Book Agent."

□ □ □

This rumpus stirred up by the Kaiser
Is making him sadder and wiser.

He's just like the goat,

Who keeps rocking the boat

And thinks it's a joke to capsizе her.

A LITTLE KNOWLEDGE IS A DANGEROUS THING.

Query.—What do you know of white corpuscles?

Answer.—There is only one white corpuscle in the body. The work of this corpuscle is to seize on bacilli which enter the body and destroy them.

Query.—What is the diaphragm?

Answer.—The diaphragm is situated on the back of the roof of the mouth.

Query.—What is the pulse? What causes it? What is normal pulse?

Answers.—The pulse is a tiny organ, in action much like the heart. There are many of them in the human body.

The cause of the pulse is breath of life and contraction of the muscles.

The normal pulse is 98° Fahr. or 160 times a minute or 18 times a second. A child's is 5 to 23 times a minute.

To be continued in our next.

□ □ □

WOMEN'S CAPES.

Cape of Good Hope—Sweet Sixteen.

Cape Flattery—Twenty.

Cape Lookout—Twenty-five.

Cape Fear—Thirty.

Cape Farewell—Forty.

□ □ □

Miss M.: "Is basketball a game of skill?"

Mr. K.: "Not the way the Freshmen play it."

□ □ □

Visitor: "Do you find it cheaper without a cook?"

Mrs. Newly-Wed: "Oh, yes. Why, Henry doesn't eat half as much now as he used to when we had the cook."

□ □ □

Who said Fraser ever thinks of Marryin' Ross!

In the Feb.-March number we offered a prize of a year's subscription to the MAGAZINE to the person giving us the best reasons why a college demonstrator represented a lamp-post, the old gas kind. The following answer was sent in anonymously: He thinks he is a shining light before the students, shows the way to success, has a "swelled" head, and stands alone in knowledge.

The above answer "stood alone." If the person wishes to send in his or her name, the prize is theirs. The correct answer is: He ought to have an iron constitution, be upright in character, be a light to the people, and be well supplied with gas.

□ □ □

"Mary, why did you not sound the dinner gong!" "Please, Miss, I couldn't find it." "Why, there it is on the hall table." "Oh, but you said this morning that was the breakfast gong."

□ □ □

Mrs. Grubb: "Have ye any more diggar like the last ye sent me!"

Grocer (briskly): "Yes, madam, plenty of it. How much do you want?"

Mrs. G.: "Don't want none."

□ □ □

Mr.— "You know I was bo'n with a silvah spoon in my mouth."

Miss—: "Really! Why, mother and I thought you talked that way on purpose."

It is rumored that "Bear" Reed, who has a regular hobby for seeing most of the trains in at the G.T.R. station, is to embark into the cab business so as to have a regular stand there and not miss any of the trains. The business might not prove very profitable to "Bear," seeing that he has so many lady friends who would be booked for free rides.

□ □ □

THE LATEST.

Miss H-w-d (to clerk): "I would like to buy some candles."

Clerk (politely): "Yes, what kind would you like—chocolate?"

□ □ □

WOULDN'T IT ELECTRIFY YOU.

"Watt hour you doing there!" asked the instructor.

"Eatin' currents," replied the student shamefacedly, "anode you'd catch me at it."

"Wire you insulate this morning, anyway," demanded the instructor

"Leyden bed," came the answer.

"Fuse goin' to do that every day, take your hat and go 'ohm," said the instructor. And the circuit was broken right there.

—EXCHANGE.



The End.

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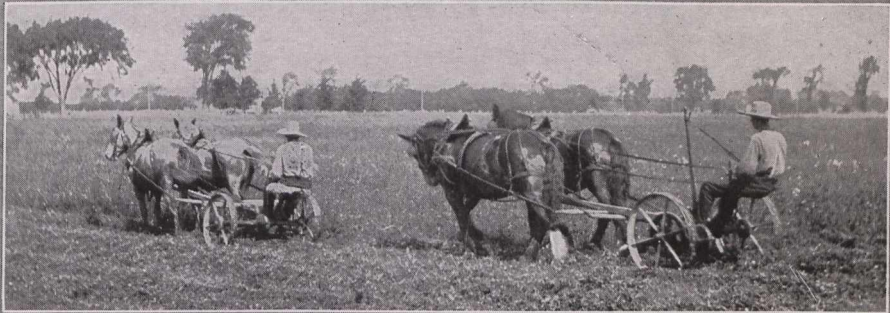
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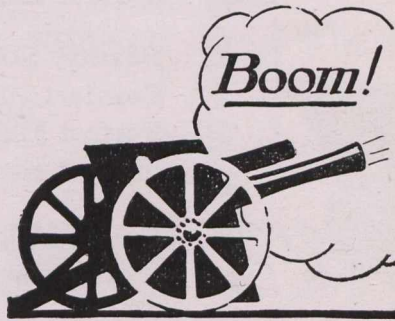
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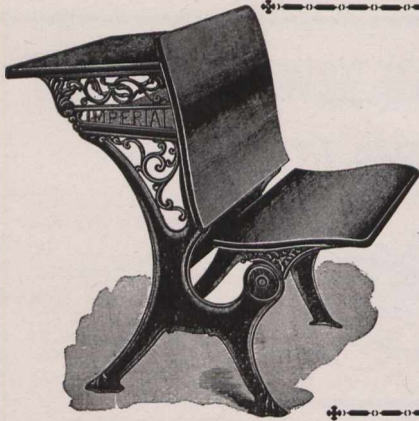
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Whilst the College is organized on a strictly military basis the cadets receive a practical and scientific training in subjects essential to a sound modern education.

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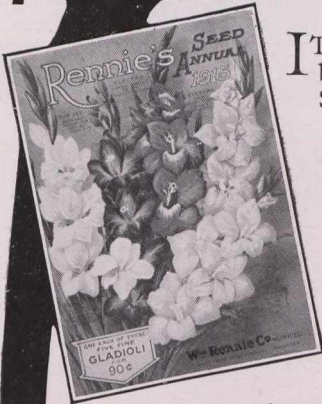
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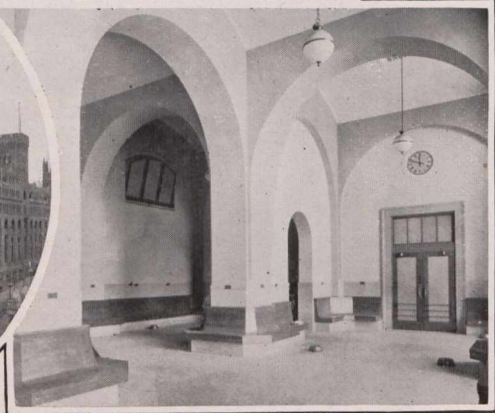




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The Prof.:

The Gluten—that's what holds the bread together. It is the elastic part of flour, the skeleton of the loaf, as it were. The more gluten in a flour, the more bread it makes and the bigger the loaf. Now, can any student explain why

FIVE ROSES FLOUR

"Not Bleached---Not Blended"

Always makes the finest bread?

Because it is milled from the most glutinous wheat grown in Canada—the finest under the sun. Then it is milled so fine and even that not only in bread, but in pastry-making as well, it yields uniform smoothness of texture and always "rises to the occasion."

When testing recipes or competing in class or kitchen, for prize or pleasure, use FIVE ROSES for best results.

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P.S.—Have you got your copy of the
FIVE ROSES Cook Book yet?