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MISSING

The O. A. C. Review

Published Monthly During the College Year
by the Students of the Ontario Agricultural College, Guelph, Canada.

THE DIGNITY OF A CALLING IS ITS UTILITY.

VOL. XIX.

ONTARIO AGRICULTURAL COLLEGE
DECEMBER, 1906.

No. 3

Address by President Greelman at Baton Rouge, Louisiana.



At the Conference of the American Association of Farmers' Institute Workers, President Greelman, who is also President of the Association, gave a magnificent address which we quote

in part below. After outlining briefly the history of the Association, its organization and its progress, the Chairman laid before the meeting his conception of Institute Work properly carried on.

Thus, from a few widely-separated Institutes systems, if they could be so called, the work has grown, until almost every State and Province is doing some kind of Institute work. As a rule, it starts with the Agricultural College or Experiment Station, and when it has

grown to be an institution by itself, it is taken over by the State or Provincial Department of Agriculture and managed as a separate division or bureau. Where they have been fairly tried, there is no longer any discussion as to their value to the farming community; but there are Institutes and Institutes, and as your Secretary for nearly eight years, I have been privileged to watch the progress of events in both the United States and Canada, and I beg leave to call your attention to some of the things that I have witnessed.

Farming Is Not a Money Making Proposition. I believe this to be true, and yet, consciously or unconsciously, most Institute campaigns are waged with the war cry, **How to make more money on the farm.** In one section of the country, I know of one Institute speaker who announced the subject of the address to be, "The Hog as a Money Maker," and in the very same delegation was another man with the topic, "The Money Maker as a Hog"; and much might be said on both sides. The

truth I wish to impress, however, is this, that there is a tendency on the part of the farmers in most sections of the country to favor discussions on the last or commercial end of farming. "The Hen as a Money Maker," "The Cow That Gives \$50 a Year, the Only Cow to Keep," "Horse Breeding for Profit," and so on and so forth. A speaker who can talk well on such subjects is universally well received and listened to with marked attention, and if he can offer a plausible plan for reducing the cost of production or increasing the market price, he is always welcome. Such talks may be necessary as a matter of policy, to entice to the meetings certain persons who will not leave the farm work at any time unless they feel that they are getting money value for their time, or another class that is constantly looking for a Get-Rich-Quick scheme; but aside from policy's sake, such talks should not be allowed to occupy but a very small part of the programme.

I make these statements, because I believe that Farmers' Institute work should be educational, not commercial. It should tend to develop among rural people a high intellectual and moral standard, and no effort is so inefficient in this direction as that which embraces the small details of farm practice, or with the buying and selling end of the business. How much valuable time have you seen wasted at meetings by discussions on "Which is the best breed of dairy cattle," "Should cows be watered once or twice a day in winter," "Which exhausts the soil most, a crop of wheat or a crop of corn."

Agriculture can only develop and progress as the men engaged in the business develop and progress; and so

long as only one per cent of the eligible farmers' sons of America come in personal touch with our Agricultural College and Experimental Station work, it is the duty of the Farmers' Institute to aid in developing intellectual power; to teach farmers on their farms to place facts in their right relation; to learn the why and the wherefore of the things they are doing; to reason from cause to effect.

You agree with me that after all is said and done, the man is the important factor in the whole scheme of creation; and so, as no two men can work or think just alike, no two men build a barn just alike, and copying verbatim another man's tables of rations may be poor economy; therefore, it is surely wiser to teach the principles of ventilation and constructions, than to advocate and distribute to an audience the detailed plan of some particular barn that suits your conditions. Better to teach the value of the constituent parts of a ration for feeding cattle than to offer a formula mixing certain foods which you have found profitable in your own stable. Each man's farmstead presents its own problems and difficulties, and these he must work out for himself. I admit that we can interest and entertain farmers' audiences in personal experiences and commercial discussions, but we cannot instruct, nor can we stimulate intellectual development. We sometimes forget that "money making on the farm, or elsewhere, is generally due to business genius, or to conditions that make it easily possible."

I remember once hearing Josh Billings say that to a man who came to him to ask, "How to make money in farming," he replied, "Rise early, work

hard and late, live on what you can't sell, give nothing away, and if you don't get rich and go to the devil, you may sue me for damages." The man of brains who does not live for money making should remain on the farm, and the Institute should be a factor in keeping him there, happy and contented.

In the early days of Institute work, my idea of a first-class Institute worker was one who had made a signal success in some branch of agricultural work, and could stand on his feet and tell how he did it. And this kind of man was always welcome at the meetings. Such a man usually always told his story from beginning to end and provoked very little discussion. The meeting was considered a success by those who attended it, and for some years I believed I was following the right lines. Then I began to see my mistake, for I found that when some thoughtful man in the audience asked for the reasons why certain causes produced certain effects, the speaker could not tell. He did not know. By certain inherited shrewdness and by virtue of hard work he had mastered many of the difficulties that presented themselves on his own farm, but he knew nothing of the principles underlying these results, and when others tried his method, they failed, because of the differences in their conditions or environments.

Under these circumstances, one of two things must be done with this kind of a worker. He must either be dropped from the list, or be properly instructed himself in the A. B. C. of Scientific Agriculture. I believe that the latter scheme will work in many cases. The man already knows two things well:

1. He can farm one farm as it should be farmed.

2. He can tell how he does it.

In addition, he has learned a great many things from the experience of others, as he has travelled all over the State or Province. If, then, he can be taught the simple principles underlying the processes he is endeavoring to teach, he will become, indeed, a most valuable instructor. I know of one Institute Director, at least, who is taking every one of his workers this year to an Agricultural College, there to remain until each in his special line is drilled in the "reason why" of things.

I have also changed my views somewhat in regard to permanent organization for Farmers' Institute work. In the beginning of any successful educational campaign it is necessary to create first a public sentiment in favor of the new movement. One means used to this end is the holding of public meetings, and for the success of the first gatherings, at least, it is essential that the speakers shall be men of no small oratorical ability. Real orators attract the crowd and strong addresses well delivered have always been potent factors in framing public opinion.

Most Farmers' Institutes started in this way, and some have gotten very little further. No permanent county organization has been effected, and yet the demands for meetings have been greater and greater each year, and to these meetings are sent men who have never been in the neighborhood before and probably never will be again. They make their talk, and arouse some enthusiasm, and go away, and the place settles back to its old ways of thinking, and its old ways of doing.

Surely every State in the Union and every Province in the Dominion has grown beyond this organizing stage in

Institute work. Surely in both countries the facts are well known and generally recognized that the tilling of the soil is, and must be, the principal industry. And yet that industry is more badly managed than any other business in the country. The difference between the average crop and the crop obtained by our best farmers is too great. Forty bushels of wheat per acre were harvested this year by some men in every wheat growing State of the Union, and yet the average wheat crop of the United States for the past ten years was, according to the report of the Secretary of Agriculture, only 13.4 bushels. During the same year the average in Germany was 27.2 bushels, and in Great Britain, 31.6; and yet we are not going to acknowledge that European countries are better adapted for wheat growing than are the countries in North America. I am thoroughly convinced that the crying need is for stronger organizations among the farmers themselves, calling for regular meetings every month or oftener, in each locality, conducted and managed entirely by local help, with an occasional outsider who knows the needs of the district. This state of things, in my opinion, can best be brought about by a permanent organization in each county, with committeemen or directors in every farming community.

The secretary of such local Institutes soon becomes a regular correspondent of the State Director. All communications are sure to come before the Board at the regular meetings; the localities themselves decide where the meetings are to be held, and hold themselves responsible for their success or failure.

Such an organization, wherever tried,

has brought about the following results:

1. More and better meetings in each county.
2. A feeling of responsibility for the success of the meetings, because they are "ours."
3. A closer touch with the State Department of Agriculture.
4. Through organization, an opportunity of visiting and studying the methods of work employed by the State Agricultural College and Experiment Station.
5. By virtue of the increased number and the regularity of the meetings, an opportunity is given and appreciated for carrying out a systematic study and discussion of the principles underlying the science and practice of agriculture.

I feel that I cannot speak too strongly on the absolute necessity of organized effort in this educational movement, if we are to raise the general standard of intelligence among our farming people. By this method alone between 35,000 and 40,000 farmers, each year during the month of June, visit the Ontario Agricultural College.

The excursions are arranged for entirely by the Institutes themselves, through their officers, with the railroad people. The college authorities set the dates and during one month this year forty-eight Farmers' Institutes conducted successful excursions to their own college. The far-reaching benefit of this sort of work cannot be estimated, and the fact that the average hundred acres in Ontario is producing more than it did when the virgin soil was first plowed, is proof of the fact that such farmers at least are, as a body, from county to county and from township to township, employing better methods of

cultivation, using up-to-date machinery, erecting better fences and buildings, using good judgment in the selection of live stock, and making a reputation for the Province along advanced agricultural lines. Secretary Wilson in his report for 1904 said: "There is also a growing movement for the establishment of the Institutes in the several States on a more permanent basis. The form of organization most approved is that a strong local permanent organization in each Institute district, combined with a system of oversight, and limited control by the central State authority, whose duties and powers are prescribed by law."

While Anglo-Saxon spirit exists, there will be much travelling done. Men will move from State to State and from ocean to ocean to learn and to teach; municipalities will always want to hear the noted preacher, or scientist, or lecturer, or author, or actor who comes from afar off, and whose name is familiar in the household, and whose face has oftentimes been seen in the best magazines. He comes and goes, and we look up our daily paper for the next attraction.

So it is in Institute work. The man or woman we bring in from some other part of the country can only, as the ducky exhorter expresses it, "Supply the rousements." Continue such practice, and we find the people clamoring for just such, and not willing to listen to good local men. The next year the local secretary writes you: "There is no use sending us an ordinary speaker. We have had Mr. Blank, of Ohio, and Mr. Blank, of New York, and Mr. Blank, of Canada, and we must have some one just as good or our people will not turn out to the meetings." All

know that this pace cannot be kept up, and when we have reached such a state of over stimulation, nothing but plain, ordinary home-grown and home-made food will save the patient's life, and this will have to be kept up for years and years before the body politic is entirely recovered.

On the other hand, by developing local talent, by encouraging college graduates and other good farmers to take an interest in their local meetings, by insisting upon outside speakers confining themselves largely to introducing pertinent questions and allowing the farmers themselves to thresh them out, by having some one make it his business to personally see and invite to the meetings men of good practice to discuss certain definite subjects, by having these men later get in direct touch with their Experiment Station, and so conduct experiments on their own farms, by having these same men give the results of their season's work next year at the meeting; by these methods I have seen Institute systems built up and become a power in the land.

If what I have said in this address applies generally to all Institute districts in the United States and Canada, then the reforms must start at the head and work downwards. If the importance of our work is as great and as far reaching as I believe it to be, then the brainiest men in the business should be secured for Institute directors. These men should be paid as the chief officials in the industrial world are paid, viz., just what they are worth. But above all things, it is surely not asking too much in this essentially agricultural country that every State director be so compensated that he will devote his entire time to this most important

work. What is \$10,000 a year to Alabama with her three and a half millions of acres of cotton, and yet she appropriated last year only \$600 for Farmers' Institutes.

The same departmental report that credits Kansas with 77,000,000 of bushels of wheat last year, also contains the announcement that \$2,000 were used for Farmers' Institute work. In the great Empire State the director gives only a portion of his time to the work, and is too busy with other things, at this time, to attend this meeting. In Wisconsin, where splendid work has been done for many years, the director is engaged in Institute work but half the year, and in New Jersey the director is also Secretary of the Board of Agriculture; while in Mississippi, the President of one of the largest Colleges of Agriculture in America is also called upon in his spare moments to select speakers and arrange and advertise meetings of Farmers' Institutes for his State.

I make a plea at this time for this most important work, that it should receive better recognition at the hands of our State authorities, and that at least one man, with a competent office staff,

should be assigned to Farmers' Institute work, and that alone.

In conclusion, let me say that I have tried to take up in this address just what is in my heart and mind in reference to this work. The good work you are all doing is bringing its reward every year. You must go on and on doing the best you can with the financial help you can get and the faithful services of your own workers, keeping always in mind the one fact, that for the farmers of the great countries here represented **nothing is too good**, and that every effort you can put forth towards the raising of their intellectual standard will be blessed by both God and man.

In the words of Benjamin Franklin: "There seem to be but three ways for a nation to acquire wealth. The first is by war, as the Romans did, in plundering their conquered neighbors—that is robbery; the second, by commerce, which is generally cheating; the third, by agriculture, the only honest way, wherein man receives a real increase of the seed thrown into the ground, in a kind of continual miracle, wrought by the hand of God in his favor, as a reward for his innocent life and his virtuous industry."



The Present Status of Food Control in Canada.

By R. HARCOURT, B. S. A.



AMONG the early settlers in this country, when each family raised their own food and made their clothing from the wool of their own sheep, adulteration of foods and commercial frauds were unknown and unpractised. As the population increased and towns and cities came into existence, it was no longer possible for each family to produce their own food, and they were compelled to look to the butcher, the baker and the grocer for their daily supplies. Furthermore, the accumulation of wealth has developed a demand for a more luxurious diet, and the more or less unnatural method of living has created a demand for more tempting and highly seasoned foods. Science, too, by furnishing us with a fuller knowledge of the component parts of food and their function in the body, has served to increase the number and variety of the articles of our daily diet. Business men have not been slow in catering to the demands of the market, and have made use of the facts supplied by science in preparing an almost endless list of foods for specific purposes. Competition in trade has still further augmented the number, and is largely responsible for the manner in which these are put on the market.

For these and many other reasons the list of foods and condiments now avail-

able is almost endless. Some of these foods may be better than the old-fashioned, simple materials; they may be more appetizing, more digestible and more easily prepared for the table; but, because of their great variety, their prepared condition, the keen competition in business, and the willingness of the people to be humbugged, there are greater possibilities of adulterating and more incentive to fraud in the making up of foods to-day than in the past.

None too soon the public is awakening to the need of legislation to compel merchants and manufacturers to supply pure foods, or to so label them that the buyer may understand what he is buying. In 1886 the Dominion Parliament passed an act dealing with the adulteration of foods, and ever since has seriously tried to regulate the character and quality of the food sold in our markets. The act has been amended from time to time, but as the Dominion Adulteration Act stands to-day, it defines adulterated food to be: "(1) Such as is diluted with any substance which lowers its quality or strength; (2) such as has inferior or cheaper substances mixed with it, even although these may not be injurious to health; (3) such as may be deprived of any of its valuable constituents in whole or in part; (4) such as is an imitation of or sold under the name of another article; (5) such as is wholly or in part diseased or de-

composed; (6) such as contains ingredients injurious to health; (7) if its strength or purity falls below the standard, or its constituents are not within the limit of variability fixed by the act or by the Governor-in-Council; (8) if it is colored or coated or made to appear of greater value than it really is."

The act, however, provides that these definitions as to the adulteration of food and drugs shall not apply: "(1) If any matter not injurious to health has been added in order that the article may be in a fit state for carriage or consumption, provided always it is conspicuously labeled as a mixture; (2) if the food or drug is a proprietary medicine, or is subject to a patent in force, and is supplied in the state required by the specifications of the patent; (3) if the food or drug is unavoidably mixed with some extraneous matter in its process of collection or preparation; (4) if any article of food not injurious to the health of the person consuming the same are mixed together and sold, or offered for sale as a compound, and if such articles are distinctly labeled as a mixture in conspicuous characters."

The claim is made by some manufacturers that the addition of a preservative to food does not properly constitute adulteration, because the preservatives added are of greater commercial value than the foods themselves. For instance, a preservative having a greater commercial value, weight for weight, than tomatoes, may be used in making tomato catsup. It may be claimed that its addition actually increases the cost of the production. As a matter of fact, however, it permits the tomato pulp to be prepared in large quantities and preserved in bar-

rels in a much less expensive way than can be done without its use. It is evident, therefore, that even though the preservative employed is more expensive than the substance to which it is added, the addition is really made for the purpose of cheapening the product. However, it is not for this reason that such a substance is properly called an adulterant, but because it is added foreign substance, and is neither a food nor a condiment, and that in the present state of knowledge of the subject these chemical preservatives cannot be said to be harmless.

There are now on the market a large number of brands of commercial preservatives. They are frequently sold with the statement that they comply with all pure food laws, that they are entirely wholesome, and the claim is sometimes made that they are new products. The commercial preservatives usually consist of common substances of well known antiseptic action. The literature regarding the wholesomeness of the so-called chemical preservatives is not by any means agreed, but it is almost universally conceded that formaldehyde and fluorides are injurious, and the weight of evidence is decidedly adverse to the use of sulphurous acid as a preservative of meat products. Authorities, however, are by no means agreed as to the effect of salicylic acid, benzoic acid, and boric acid in the system. As much as one-half per cent. of the latter substance is allowed in butter sold on the British market; but I think all will agree that so long as there is any doubt as to the wholesomeness of any of the chemical preservatives, every effort ought to be made to prevent their use in foods. This is especially true of milk, which forms such

a large part of the diet of infants and invalids. Furthermore, they are used only in foods likely to undergo decomposition, and their use obviates the necessity of strict care and cleanliness in handling, which is the only other way of keeping them in a normal condition.

Fortunately our staple foods, such as the cereal grains, fresh meats, and fresh vegetables are not adulterated. It is the higher-priced prepared foods and condiments that are the most likely to be tampered with.

The enforcement of the Food Adulteration Act is in the hands of the Dominion Inland Revenue Department. According to the provisions of the act, any officer of the department is empowered to procure samples of food from any person who has such in his possession for the purpose of sale, and may require such person to show him and allow him to inspect all such articles in his possession, and the place or places in which such articles are stored, and to furnish him such light or assistance as he requires, and to give him samples of such articles, on payment or tender of their value. This, the vendor is bound to do, or be liable to the same penalty as if he knowingly sold or exposed for sale adulterated articles, knowing them to be such. After the purchase has been completed, the officer must notify the seller or his agent of his intention to have the sample analysed by the Public Analyst, and shall divide the sample into three parts, and deliver one of these to the seller if he requires it. The other two are to be sent to the Public Analyst, and the Department of Inland Revenue, respectively.

In carrying out these directions the

officer, after purchasing an article of food and informing the vendor of his intention to have it analysed, is frequently asked as to who will suffer if it is found to be adulterated, and how the vendor is to protect himself if he sells the adulterated goods in the same condition as he received them. The answer is that all goods are supposed to be pure, unless otherwise labeled, and that the vendor must suffer if he sells an adulterated article which is not conspicuously labeled as a mixture, or if he fails to secure the warranty from the manufacturer or dealer, as provided by the act.

From time to time the department makes collections of foods which they have reason to believe are being adulterated, and, after making the examination, report in bulletin form. These bulletins are available to those interested in the work, and help to keep the public informed regarding the purity of the various classes of foods. During the present year bulletins have been issued on the following subjects: Canned meats, honey, whole milk, skim milk, butter and cream, maple syrup and sugar, fruit preserves, commercial extracts of lemon, and patent medicines and headache powders. These bulletins show that there is considerable adulteration of the nature previously mentioned practised in all these goods.

The question is sometimes asked: How can I have foods which I think are adulterated analysed? The best way of having suspected adulterations investigated is by notifying the Deputy Minister of Inland Revenue that stated classes of foods are believed to be impure. If satisfactory representations are thus made by responsible persons,

the matter will be taken up and thoroughly investigated. The department prefers to have all samples for analysis collected in a legal way by their own inspectors, since only in such cases can they institute legal proceedings when adulteration is found. The act, however, provides that individuals may have samples analysed at their own cost. The results of such analysis are available to the individual in case he decides to prosecute, but the department cannot in such a case be a party to the prosecution, except as a witness.

There is a growing demand for information in this important subject, and it is right that the public should be deeply interested in the nature of the substances placed in foods. Manufacturers should be compelled to label their goods in such a way that the consumer knows exactly what he is buying and can act accordingly. At the same time, there is an unfortunate tendency to exaggerate the amount and harmfulness of adulteration. There is an honest difference of opinion regarding the wholesomeness of preservatives and other substances added in the preparation of food, and the subject should be treated in a conservative manner. But,

certainly, all cases of pure fraud should be severely dealt with.

There is great need of more education along the lines of the value of pure foods. At present there is a desire on the part of the general public for prepared or semi-prepared foods of a tasty and attractive appearance, and an apparent indifference to the need of a pure, wholesome, and nutritious article. So long as this continues, we cannot be surprised if business men strive to supply this demand. It costs more to produce pure milk, pure jams, jellies, etc., than it does to produce the impure articles, and housekeepers should be willing to pay the price; but they have a perfect right to the full assurance that the food is what it is represented to be. The consumer must be led to look deeper into the nutritive value and nature of the food used, and to demand that it be pure and wholesome. Every possible means should be used to spread reliable information regarding our common foods, and thus help to inspire parents to see to it that the food placed before their children is the very best and purest that can be procured. Create the demand for nothing but the purest and best, and the trade will supply it.



Fables in Slang.

By R. J. DEACHMAN, B.S.A.

“CAN you concoct for us, on short notice, a mange proof, slough-drained, back-set, broad-gauge, double-barreled, barb-wire lie, or something to that effect? If you can have it here by Nov. 15, we shall refrain from thinking we are on the verge of the rinky-dink for another month.”

Some time ago a letter reached me which contained this startling appeal, and heeding always the command of my old-time friend, The Review, I set the shuttles of my imagination spinning in an effort to meet the request. On what subject should I write? The West and its Resources? That story has been often told. The east has heard too much of it, at least so say some people, and so from subject to subject I drifted until I stumbled back to those words which as a text I have placed at the head of this article.

Language is a product of evolution. It grows from life and life's associations and the less cramped are the conditions under which we live, the more liberties do we take with our mother tongue. The cowboy is a language-maker. He draws from the experience of everyday life and talks straight to the point. He "hits the trail" when he leaves for town and "hits the lumber" when the he gets there. Everything is a "round-up," and a "cut-out" with him, and it is related that on one occasion a typical Montana cowboy, when handed a bill-of-fare printed in French, said to the waitress, "Just run in the whole durn

bunch and I'll cut out what I don't want."

Language has its restrictions. In the west a ranch is a ranch and a farm is a farm. That is, we make a distinction. But once you cross the mountains everything is called a ranch. You may have only a few trees—perhaps six, and a pile of rocks backed by mountains, but you are a rancher. You may reach your "farm" by boat; the only live stock may be a hen; your horsepower may be a gasoline launch, but you are a rancher nevertheless. It isn't your work that makes you a rancher; it's the arbitrariness of language. In the west a slough is a slough; in some parts of the States it is a "dip"; in Illinois it becomes a "draw," and back in old Huron county we call it a frog pond. No wonder the foreigner finds English hard to learn. It is steadily growing more complex.

New settlers bring new forms of expression which had their birth under other skies. "Well, I reckon it's a right smart distance," remarked a Yankee, when asked how far he was from town, and a Southerner stated that since he had met with a certain accident he had a "powerful weak back"—rather a useful combination, wasn't it? I asked a foppish clerk in a book store the price of a certain quarterly publication. "Two bits a dose in dishabille," he replied, "but we sell it bound in half hide, full year, very bongswong, one buck."

Which being translated into English means: Twenty-five cents each, or bound in half leather, it costs one dollar for the complete year! Thus is old England outgrown. The English "bloke" brings with him many pretty ways and has a softer tone than his Yankee cousin. His presence tends to soften the grating asperity of the Canadian speech, and to break the strength of the American nasal twang. It is said that once upon a time some high-toned sons of the old land were playing polo at midnight on the streets of a western town—polo, you know, is hockey on horseback—and when the police, deeming the game too exciting for a city at midnight, interfered and threatened arrest, one of the Englishmen touched the policeman on the shoulder and said, in his soft, polite manner, "Ow-ah, I wish you would go away; you annoy me." This surely was the soft answer that turneth away wrath.

In the mining towns names are used that seem singularly appropriate. For instance, where could you find a better name for a whisky dive than "The No Place Inn," or "The Glue Pot Saloon." The name of the latter would surely hold you when you got inside if it did not induce you to go in. Then the

newspaper men were not to be outdone for appropriate names, and so the west has had "The Ledge," and "The Claim," and "The Grey Goose," and "The Badger." Strong and mighty fighters some of these newspaper men of the early days certainly were. One man made this statement about a contemporary: "The gushing idol-smasher on the local sheet is a piping pedler of putrescent platitudes." This would seem to be the limit, but a recent effusion goes still farther when reference is made to another newspaper man as a "greedy, gaping gobo, who gobbles to gumptionless galoots at so much a gob."

"How do you feel," said a Canadian to a German, who was studying English. "Smooth," was the reply, "feel me." It might be alright to feel the German, but who would venture to feel the irate pen-pusher who made such use of apt alliterations artful aid.

And so we are continually gazing down awe-inspiring vistas of rhetorical splendor that remind us of Shakespeare, Milton and Pope—remind us by difference—but the cowboy is almost a thing of the past; the new settler is becoming a genuine Canadian, and soon the only remaining trace of the old days will be a few new words in our dictionary of slang.



Agriculture.

Cultivate the Soil.



H. BARTON, '07
EDITOR



“MY broad acres,” as the expression of an idea, is a phrase that has vastly more attractions for man the world over than “my fertile little farm.” For, although the latter quite usually means more comforts and greater ease, yet imagination plays no small part in making up our happiness, the land lust of feudal days still finds a shelter in our hearts, and both these passions find fuller cope in “broader acres,” even that, or perhaps I had better say even because slough or rocky highland enter very largely in.

Man is usually imitative. Particularly is this true where the doing as others do has the spice of novelty, the lure of gaming and the added attraction of a probably less laborious life.

The average Canadian farmer is as intelligent as the average farmer in any part of the world, and is very certainly superior to most men of his calling, no matter where they may be met with. The highest form of intelligence is that

which thinks for itself, reasons, comes to conclusions, and then acts thereon.

Yet, when scarce a school section may be found in English-speaking Canada whence at least one family has not gone forth to tempt fortune in the West, and when certainly not a newspaper may be glanced through that has not either advertisements of, or articles on, or reports from our great Western Provinces, and all glowing with the promise expressed or understood, of great farms, great possibilities, great fortunes, and, last, but not least, great men—strong indeed must be the ties that hold us here spite of example, and high indeed the intelligence that enables us to start out on new lines on our old farms, lines apparently more laborious and certainly requiring greater mental effort.

It is thus not hard to understand why Canadians, with their hundreds of millions of acres of available, much vaunted, easily acquired, easily accessible uncultivated lands, treat with scant courtesy most efforts to direct attention to intensive farming.

In view, therefore, of the apparently hopeless case it is proposed to advocate, let me briefly plead the reasons for daring to ask space for such few remarks on the necessity of increasing returns from the farm as are herewith offered. Stated briefly, the pleas for more intensive cultivation are:

1. It is more profitable than the extensive system, positively and relatively.

2. It is necessary, if the Eastern Provinces hope to hold their own in agricultural progress and population.

3. It would necessitate a very much denser rural population, and therefore, ensure a more healthy, social and moral atmosphere in the country at large.

4. It will very materially, as well as comparatively, rapidly increase the nation's wealth.

Methods of farming in Eastern Ontario are as varied as can well be imagined, so one need not go far afield to find what method or lack of method he wishes to consider well exemplified. In the cases below discussed, because any one of them happens to be in a certain township or country, it does not follow that all farms in the neighborhood are similarly handled, for not infrequently antipodean methods are exemplified on adjoining farms. Let the unit in each case be the 100 acre farm, and let us begin with what might be called the most extensive of extensive farming in Ontario.

Case 1.—In the Township of Lobo, a township including, I am informed, some of the most fertile soil in Canada, a farm (one of the best and one of many) was rented last spring for \$250, the owner to pay the taxes (\$80)—net revenue, \$170. The reason the farm was rented was that the owner had run it, along with several others, the previous year, and made a net loss of some dollars per acre. This farm is all down in grass, and revenue depends upon the owner's skill as a buyer of stockers in the spring and a seller of fat (or lean) steers in the fall. The owner, in 1905, bought on a high market and

sold on a low. His tenant this year has been no more successful. Only the sharpest and shrewdest business man could make a living off 100 acres under such conditions, yet it is the one system where there is practically no labor required. No labor, no cultivation, no revenue, or at least very little revenue. Lobo Township is not alone, such cases may be found in almost any parts of Ontario.

Case 2.—In any township you like is to be found this farmer of Case 2. He has 100 acres of good land, follows no particular rotation and produces annually about 1,000 bushels oats, 800 bushels barley, 300 bushels wheat, and some hay. From all which he sells to the value of, say, \$1,000. Taxes and hired help reduce this to \$700 net revenue. He keeps no man in the winter, and somehow manages to make ends meet, or, as happens not infrequently, ends up with a mortgage on his farm.

Case 3.—In Nepean Township, on one of the best farms I have ever visited one man is employed. No particular rotation is followed, but grain, roots, corn and hay are produced. Steers are fed in winter. The gross revenue in 1905 was \$1,500. The owner is looked upon as a good farmer.

Case 4.—In Stanley Township, or the township adjoining, is a 100 acre farm. The soil is good. It is fairly well tilled. A rotation of four years is followed, thus, hay, pasture or hay, corn and roots, grain. Horses, beef and pork are produced. Two hired men are kept busy the year round, with the result that a gross revenue of about \$3,000 is shown each year.

Case 5.—In Ontario County, a 100 acre farm of fair soil is now run as a

dairy and pig farm. It was originally a grain farm, with a revenue, gross, of from \$700 to \$800 per annum. No particular rotation was followed. Part of the farm is broken land. This part is now used as permanent pasture land for cattle and swine. On the balance, about 65 acres, a three year rotation is followed, hay, corn and roots, grain. Revenue, gross, in 1905, about \$4,400. Three hired men employed.

Case 6.—For case 6 let me take the reader outside Canada. Not that such a case might not exist in Canada, but because I know of none such at present, and I would not mention cases other than such as are known to be authentic. Near a Pennsylvania town, a farm of fifteen acres fell into the hands of a preacher in 1881. There was a mortgage on it for \$7,200. The year it came into the preacher's possession it produced not enough to keep two cows and a horse. It now carries two horses and thirty cattle. The mortgage was paid off in six years. The gross revenue is now about \$3,000 per annum, that is, at the rate of say \$20,000 per 100 acres. A man and a boy are employed in addition to some help from the proprietor, say at the rate of twelve men per 100 acres. Soiling is practiced.

To summarize and compare:

Case 1.—1 man employed part of time; revenue per acre, \$2.50.

Case 2.—1½ men employed part of time; revenue per acre, \$10.

Case 3.—2 men employed part of time; revenue per acre, \$15.

Case 4.—3 men employed part of time; revenue per acre, \$30.

Case 5.—4 men employed part of time; revenue per acre, \$44.

Case 6.—12 men employed part of time; revenue per acre, \$200.

The comparison is so striking that one might easily be tempted to doubt the authenticity of the facts. In every case but one, however, proof positive could be given if necessary.

The reader will, I hope, admit the first plea, "Intensive farming is more profitable than extensive farming," substantiated.

The second plea, "Intensive farming is necessary if the Eastern Provinces are to hold their own in agricultural progress and population." Our land area is limited. In a few more years practically all land will be taken up. Then to increase our rural population and our agricultural output, it follows that more intensive farming will be the only recourse.

The third plea, that "It would necessitate a denser rural population, and hence a healthier moral and social tone" is most generally accepted, and to attempt to prove it would be merely to repeat almost hackneyed arguments.

No remarks are necessary, I am sure, so far as the fourth contention is concerned, merely consider the different cases cited in proof of the first contention and the thing is incontrovertible.

In conclusion; it is not hoped to persuade all who read to at once start in for intensive farming, but mayhap some few may be led to think a bit and then act, in which case, you who act will be rewarded, and amply rewarded, for your trouble.

"Thinker."

Farmers' Institutes.



IN the early years of Farmers' Institute work in Ontario, the larger proportion of the lecturing was done by the staff of the Agricultural College. Later on when a change was made in the college session, whereby the length of the winter vacation was shortened, the professors found it impossible to undertake Institute work in the winter months. The result has been that most of the work in recent years has been done by practical farmers, who have made a success in one or more lines of agriculture. The Institute work has not, therefore, been quite so closely identified with the college as in former years, although lecturers have, of course, kept themselves informed from year to year upon the work carried on at the college. The time has arrived when the farmers of Ontario are asking that Institute speakers have a most thorough knowledge regarding their particular branch of agriculture; and they must be able to give not only the results of their own practical experience, but the conclusions of other successful practical men. They must be prepared to go more or less thoroughly into the underlying principles of cultivation, seed selection, breeding, feeding, etc. It is with pleasure that I make a few statements through the columns of the student and ex-student paper, regarding the the work of the Institutes, more specially as we shall require to look more and more to the graduate body for additional speakers who are competent to give instruction as indicated

above. It must be remembered that for the most part the graduate shall be required to have had somewhat broad experience in practical work, either before or after graduation, before he can utilize his theoretical knowledge to the best advantage for the instruction of the farmers at Institute meetings. The Minister of Agriculture fully realizes the necessity for giving the present staff of Institute lecturers every opportunity for equipping themselves in the subjects with which they are entrusted at Farmers' Institute meetings, and gave his hearty support in making provision for a conference of Farmers' Institute workers at Guelph. The main advantages to be derived from such a conference are that the speakers may become thoroughly familiar with methods of presenting the various subjects, as approved of by experienced workers, and that there may be uniformity in the work undertaken. A consultation as to the requirements of the various districts of the Province, between the lecturers who visited a district last year and those announced for this season, should result in much more efficient work being done during the coming campaign.

While but little specific information can be given on any one subject at a four-day conference, attention can be directed to the underlying principles, and results of some of the latest investigation can be presented.

THE COMING WINTER'S WORK.

To my mind there are two or three lines of work which should receive special attention by Institute officers

and lecturers during the coming months.

Farmers' Clubs.—Why should not the farmers and their sons in each community form themselves into a club for discussing topics which are of interest to them as tillers of the soil and producers of grain, roots, fruit, beef, milk, etc. With but one meeting a year, and the time at such meeting almost wholly taken up by the delegates, we can hardly hope for any great advance in agricultural practice. If the farmers, especially the young men, would meet together once or twice a month and discuss the possibilities of the locality and decide upon uniformity in the production of fruit, grain, roots, live stock, etc., and turn out large quantities of uniform quality, they would find themselves placed in a much better position to buy and sell to advantage. The establishment of such clubs would naturally lead to the forming of co-operative associations of one kind and another. Much has already been accomplished in the interests of fruitgrowers by the establishment of co-operative associations. Most of these have been the outcome of the holding of meetings for the special purpose of discussing the question of co-operation. It is to be hoped that the officers of Institutes will make an effort to establish Farmers' Institute clubs. There is no call for any cast iron or elaborate rules regarding the work. The chief essential is that at each meeting definite arrangements be made for the succeeding meetings and the responsibility for the programme placed upon certain persons.

Farmers should co-operate not only along fruit lines, but in other branches. While much benefit would result to the farmers by uniformity of action in the

purchasing of materials and in the sale of produce, we do not wish to be understood as favoring a combine in the ordinary sense of that term. but when wholesale men learn that farmers are producing a certain line in large quantities, of uniform quality, the result will certainly be enhanced prices for the same, and these additional returns to the farmer do not mean that the prices charged the consumer need be advanced. The margin between what the farmer receives and the consumer pays is, in most cases, altogether greater than it should be. When goods are bought in small quantities in a great many different places, resold to larger dealers, and probably sent by these dealers to still larger centers, it can be easily understood that the margin between what the farmer receives and the consumer pays is necessarily out of proportion. It is high time that the farmers of the Province received their just proportion of margin between actual cost of production and the amount paid by the consumer for products of the farm.

Illustrative Material.—It is quite evident that in order to make Institute work effective we must, as far as possible, use illustrative material. Much of this may be furnished in the form of charts, showing clearly the results of experiments, indicating the desirable types of animals, etc. There is nothing which takes the place of the live animal in giving instruction in this subject. This, however, cannot be arranged for in a great many places where meetings are held in the winter, and the speakers are required to resort to charts. It is to be hoped that Institute officers will, as far as possible arrange for live stock to be brought to the places of meeting

to be used by the regular delegates in demonstrating their talks.

It would be well for members of Institutes and others who are interested in the work to take to the meetings, samples of vegetables, roots, fruit, grain, etc., which have been produced locally. These will be found of use to the lecturers in giving instruction, and will also be examined with interest and profit by those who may be in attendance at the meetings. A farmer in the vicinity of Fergus was not aware that his nearby neighbor was growing a superior variety of grain until he learned of it at the winter fair at Ottawa. This is an illustration of the information which might be gleaned from one neighbor by another at the local Institute meeting.

To summarize, we are fully convinced that if the greatest good is to result to the farmers of Ontario through Insti-

tute work, they must be students of their particular lines throughout the whole of the year, and not depend upon an isolated meeting for receiving information along agricultural lines. It is well, of course, to have special speakers sent by the department once or twice a year, but the greatest benefit will probably be derived by a systematic study of the reports, bulletins and agricultural press from month to month. Study the information given therein as applied to local conditions. The possibilities of Institute work are as great, if not greater, than in past years, and it is to be hoped that the farmers of Ontario will take advantage of the opportunities afforded for increasing their knowledge of agriculture, and thus bettering their conditions as farmers.

Geo. A. Putnam,
Supt. Farmers' Institutes for Ontario.



SNOWFALL.

Down drops the snow, the fleecy looking snow,
On town, and wood, and haggard wind-blown space,
And hushes the storms, and all weird winds that blow
Upon the world's dead face.

Like the great rest that cometh after pain,
The calm that follows storm, the great surcease,
This folding slumber comforts wood and plain,
In one white mantling peace.

So when His winter comes, His folding dream;
His calm for tempest-tost and autumn-lorn;
'Twill gently fall, as falls by wood and stream
His snows this winter morn.

—Wilfred Campbell.

Experimental.

The Re-moulding of Useful Plants.



A. E. SLATER, DR.
EDITOR



THE science of plant improvement or plant breeding has a history more ancient than is generally believed. Its underlying principle — selection — was foreshadowed by Aristotle in his "Physicæ Auscultationes," written during the third century, B. C. To what extent this principle was employed by the Greeks in the improvement of things natural, can be conjectured only, but the Roman poet Virgil records the use of selection by his countrymen in the first century, A. D.

Vidi lecta diu, et multo spectata labore,
Degenerare tamen, ni vis humana
quotannis,

Maxima quaeque manu legeret.

—Georgic I., l. 197.

(The chosen seed, through years and labor improved

Was seen to run back, unless yearly
Man selected by hand the largest and fullest ears.)

The principle which dawned upon men's minds through the dim light of

early centuries, found ardent devotees in the nineteenth century in the persons of Thomas Andrew Knight, an English physiologist, and Van Mons, a Belgian scientist. These investigators worked upon horticultural fruits. DeVries cites valuable work having been done as early as 1810-1830, by the French scientist LeCouteur, which resulted in the isolation of the valuable variety of wheat called "Talavera de Bellevue." In the early twenties of the past century Patrick Sheriff, of Haddington, Scotland, decided that better crops were grown from well-chosen seed than from seed of promiscuous quality and parentage. Hence he carried on a well-defined system of selection, and succeeded in producing the famous "Mungoswell's Wheat" and "Hopetown Oats."

The latter part of the nineteenth century saw great activity in plant work. Plant improvement became the aim of many institutions, both private and public. Among the prominent men of this period are Burbank, Hays and Bailey. The world owes much to the patient, persistent labors of Luther Burbank. Through his efforts the seedless orange has been bred up to its present degree of excellence. Not a few of the popular varieties of plums owe their excellency of flavor and lusciousness to the thoughtful labors of this worker. Hon. W. M. Hays is best

known for his valuable work on wheats at Minnesota Experiment Station. From a plot of 400 plants of Blue Stem wheat he selected a single plant which became the first parent of the famed "Minnesota No. 169" wheat. At most of the experiment stations where this wheat has been tested, it has given good results, and promises to raise the average yield of wheat one or two bushels per acre. Professor L. H. Bailey, of Cornell University, has gained an enviable reputation for his valuable work with fruits.



O. A. C. Experimental Department—H. G. Bell, B.S.A., crossing Red Fife wheat and Herison Bearded, in order to make the head of the Red Fife more compact, and thus to overcome the "shelling-out" habit of the Red Fife variety.

A survey of the present status of this department of work shows the activity of investigation to be increasing. Out of the fifty-six agricultural experiment stations of United States, thirty-three

stations are mentioned as carrying on definite work in plant breeding; fourteen stations mention special work being done in wheat; thirteen stations are improving corn, and twenty-one stations are striving to improve such crops as cotton, cow peas, tobacco, legumes, sugar beets, potatoes, vegetables and horticultural crops; eight stations do not specify their special line of plant work. In Canada the Dominion Experimental Station has improved the hardness and other qualities in certain fruits and ornamental trees. At the Ontario Agricultural College the Experimental Department, under the able direction of Professor C. A. Zavitz, has been carrying on some valuable work in plant breeding. During the past summer many thousands of plants were under careful test and study. The outlook is very encouraging, and the department hopes to have some valuable new varieties for the Ontario farmer, in the near future.

The work of plant improvement or breeding falls under two heads, viz., improvement by selection, and improvement by hybridization and selection. The use of pure selection, as we have noted, dates back to ancient times. It was through this principle Van Mons produced excellent results in fruits.

Many experiment stations have confined their efforts in plant breeding to this method of improvement, and great good is resulting from its inculcation in many lines of agricultural pursuits. The work of breeding by pure selection may be outlined as follows: On a plot of ground—known as nursery plot—a definite number of chosen seed are planted. When the plants have grown to maturity, a dozen or more superior plants are chosen; plants, superior for

their stooling, for their yield, for their strength of straw, etc.

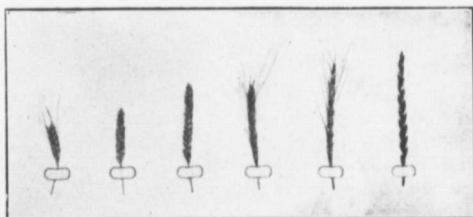
The following year the seed of these excellent plants are planted in rows, side by side; and these rows are compared throughout the season as to relative worth in the qualities cited above. The third season the products of the two or three best rows are planted in equal area plots, and from these areas, grown side by side, the best strain is selected. Thus, in time a superior strain of grain is bred up from a known

parentage, just as some of our prize-winning cattle, horses or sheep are bred from recorded parents. The Experimental Department, O. A. C., this year sent out an improved strain of the already famous Mandscheuri Barley, known as Barley No. 21. Very encouraging reports of this strain are being received daily,

and will be presented at the annual meeting of the Experimental Union this month. But with all the excellent results which are being produced by continuous and wise selection, this method of improvement falls short of the best in that its possible attainments are limited. Selection may increase the yield—may increase the weight per bushel—may increase the general vigor of the crop, but as Virgil said 1,800 years ago, if this choosing is not kept up from year to year, the crop, grown under old conditions, will recede to its former yield, etc. Moreover, certain racial characteristics, such as beards on barley or wheat, cannot be removed, or lessened even, by the most careful

selection. A new method was imperative.

In 1691 Camerarius announced his belief in the sexuality of plants. He believed that there was male and female among plants just as in animals. This announcement suggested a new method of improvement. The farmer knew if he bred a race of horned cattle with a race of hornless, or "mooley" cattle, he would get some offspring horned, and some hornless. He observed also that some of the hornless



O. A. C. Experimental Department—Emmer crossed on Spelt. Emmer is on extreme left. New breeds are shown in following four heads. Spelt is at the extreme-right. Nos. 2 and 3 are desirable types.

cattle possessed the qualities of their parent, the horned race, but did not have horns. In view of his fact the question that arose in the plant breeder's mind was: "If I have a beardless race of wheat, and a bearded race, why cannot I breed these two races, and choose from among their offspring a race possessing the desirable quality of beardlessness along with the other good qualities?" The philosophy of the problem appealed to Thos. Fairchild, an English biologist, who, in 1719, produced the first hybrid seed, by transferring the pollen of one flower to the pistil of another flower of the same family. Many hybrids in fruits, flowers, grains and other crops have been

produced by this means since, and valuable varieties of such have been isolated and developed by wise selection of the offspring of such crosses.

The method of combining the qualities of individual races of plants had been discovered, but the fact remained that the succeeding generations of plants grown from seed showed all kinds of variations in the combination of the qualities of their parents. This set scientists thinking. The method of bringing about a combination of qualities was known, but who knew how these qualities were held in the plant? Who knew when a race possessing a desirable quality, such as beardlessness, could be depended on to come true to type? Toward the end of the nineteenth century many minds were busy trying to solve the problems of heredity. Almost simultaneously, in the year 1900, Hugo de Vries, Holland; Correns, Germany; Tschermack, Austria, and Bateson, of England, presented reports of investigations to their respective scientific societies, and these several reports concurred in one very important point, viz., the unit character-content of the plant germ cell. Now, this simply means that each pollen cell of a bearded wheat contains the character of beardness, and not the character of baldness at the same time; each ovary or egg cell, or female cell of the plant, likewise contains only one of the character pair, and not both. The law might read: The germ cell of a plant—be it pollen grain or ovary cell—contains one, and not both of a "character pair" of qualities possessed by its grandparents. Having consulted over these findings, and having reviewed former work on this problem, the scientists discovered that an Austrian monk—Johann Greg-

ory Mendel (b. 1822, d. 1884)—had, in 1866, published a paper setting forth the same law, which he had deduced from a great fund of data. Consequently the honor of the discovery was accorded to Mendel, and the law along with its elaboration forms what is known as Mendel's Law, and Mendel's Theory of Heredity. This law has furnished an explanation to many puzzling phenomena of plant breeding, and has set the work on a scientific basis.

Mendel found that when two races of plants possessing opposite characters were crossed, one character dominated over the other, e.g., when a bald wheat is crossed with a bearded wheat, bald wheat forms 75 per cent and bearded wheat 25 per cent of the product of the second generation. He called the more powerful character the dominant, and the weaker character the recessive. Of the 75 per cent obviously possessing the dominant character of beardlessness, 25 per cent is pure dominant and 50 per cent is of hybrid character. Now, the significance of the characters being divided into pure dominant, pure recessive and hybrid classes is this: When a crop is grown from seed belonging to each of the above classes, that, chosen from plants possessing the pure dominant character (e.g. baldness), will come true to type in successive generations. That seed chosen from the pure recessive (e.g. bearded) will also come true to type. However, that seed chosen from the hybrid class continues to break up in the next generation into 25 per cent dominant, 50 per cent hybrid, and 25 per cent recessive. So far we have been considering the action of only one character pair, but in crossing two races of plants the breeder has in view the blending of many characters,

hence the problem of heredity becomes complicated. Without going further into the theory of heredity, let us consider a specific case. The characters possessed by two well known wheats are as follows:

I.	II.
Bald	Bearded
Strong in Straw	Weak in Straw
Red Chaff	White Chaff
Heavy Yields	Medium to Small Yields
White Grain	Red Grain
Soft Grain	Very Hard Grain

The defect in variety No. I. is that the grain is very soft; otherwise it approaches an ideal wheat. The strong point of variety No. II. is that it is very

wheat plants. If he is fortunate in selecting a plant possessing the desirable characteristics as pure dominants or pure recessives, he will be sure of obtaining a crop that will reproduce true to type. However, if any of these characteristics be hybrid in the plant, they will continue breaking up as indicated above. The ultimate aim of crossing two varieties is to obtain a new race that shall have the good qualities of one parent race combined with the good qualities of the other parent, in a pure state. The constancy with which a new race will transmit its new combination of characters is determined only by a series of tests carried on for several years.

Thus the plant breeder finds in this law an explanation for many of the phenomena that arise during the production of a new race of plants.

Through a knowledge of the laws of heredity he is able to make wise selections from the successive generations of plants whose parentage he has determined; and thus to isolate his new variety. However, in the process of variety production many circumstances arise to upset the anticipated trend of events. Perhaps our reader, with a complacent smile will weave fair dreams of the well ordered precision with which a new variety can be produced. Many a time has the plant breeder seemed "to see the future in the instant" when developing a new race, and having assured himself of the wisdom of his selection, has left it to nature to unfold the tale. But alas! for his dreams. Just at the time when he feels convinced that he is at peace with the world, the flesh and the devil, he awakens to find that one or more of the aforesaid agents has forgotten the truce. His new crop of wheat—whose seed was selected with such great care from plants which he thought were constant—his crop is full of variations!



O. A. C. Experimental Department--
Crop of new breed produced by crossing
Red Fife on Herison Bearded,
showing constancy of form of head.

hard, but with this good quality it possesses some undesirable qualities. Now, the breeder has in mind a wheat that possesses all the good qualities of No. I. combined with the hardness of No. II. To this end he crosses these two varieties. In the second and third generations or crops from this cross, the breeder finds numerous forms of new

Stability of form and other qualities seem as far removed as ever. Thus the labor of three or four years seems fruitless. But there are phenomena in nature—in heredity—whose explanation is yet a matter of debate among scientists. When certain varieties of plants are grown for the purpose of breeding, frequently the soil receives better cultivation around them than did the field on which their parents grew. Frequently, too, they receive increased plant-food in the shape of fertilizers or by virtue of the greater space in which they have to grow, than that accorded the single plant in the general crop. All these abnormal conditions have been found to produce abnormal de-

fruit, cereals and other forms of plant life exist. Many varieties of each class show desirable characteristics, and undesirable characteristics. Certain other varieties of the same class show desirable characteristics where the former showed undesirable. Then, it is obvious that an ideal blending of the desirable characters of each, and the elimination of the undesirable characters in plants opens a great field to plant improvers. Think, reader, of the cherry without the pit; of the onion without the aroma that is all its own; of the barley without the annoying beards; of the increase in hardness in wheat, so that much more of it will grade No. 1 hard; of the cereal crops



O. A. C. Experimental Department—Hybrids grown in plots in winter wheat range, 1906.

velopments, and by exciting latent characteristics in a race, have given rise to entirely new forms of plants. This phenomena forms part of the basis of the latest theory of the origin of species and varieties. Moreover, the very act of crossing two varieties, and thus upsetting their normal course of heredity, sometimes excites variation and produces mutations. Hence, it is of fundamental importance, in choosing varieties for crossing, that he select those showing a constancy of character transmission for many years. Pure cultures are essential.

The opportunities for plant breeding are innumerable. Varieties of flowers,

yielding twenty-one bushels to the acre, where they now yield twenty bushels per acre; of the fruits, vegetables and grains bred up so that they will mature in the rigorous climate of Northern Canada, and say whether or not plant breeding has an important place among modern sciences. The work demands constant and untiring attention. Great numbers of plants must be grown, and studied carefully. Apparent defeats must not discourage the plant breeder. Hugo de Vries says: "Accuracy, perseverance and a warm love for Nature's children are chief requirements in these investigations."

—H. G. Bell.

Horticulture.

The Growing of Vegetables Under Glass.



T.G. BUNTING '07
EDITOR



ONE of the branches of horticulture that is now attracting considerable attention, especially from those engaged in gardening and fruit-growing, is vegetable gardening under glass. This consists in the forcing of certain vegetables in greenhouses in the winter season, when otherwise these vegetables could not be obtained.

Forcing vegetables in greenhouses is a business of comparatively recent origin, and as yet is very little understood. Few varieties of vegetables are naturally adapted to forcing, and as the conditions under which they are grown are changed, the methods of handling them must also be changed.

To anyone contemplating going into the forcing of vegetables, I would say that the measure of success will depend largely on the man. He should first of all consider the cost and the risks which must be run. Greenhouse construction is costly, and heating is an expensive item; then there is the amount of experience and the knowl-

edge of ventilating, heating, watering and the care of each crop to be taken into consideration.

It is not my purpose to enter into any discussion in regard to heating, as much will depend on the size of the plant. The situation of the houses is very important. The old idea was to run them north and south, thus permitting each side of the house to get an equal amount of sunshine, but the tendency of the present day is to place them east and west, with the east end of the house eight or ten degrees further north than the west end, thus catching the first rays of the morning sun. You will find that in the house running north and south, the sash bar or rafter obstructs the light far more than in the house running east and west. If possible, secure a sheltered situation, protected especially from the north and west winds. I would advise planning your house so that it can be extended as your business increases.

The next point to consider is the style of house. The present day tendency is towards the equal instead of the three-quarter span. In the interior arrangement I would by all means advise the use of ground beds. In commercial establishments they mean a saving of room on account of narrower paths, a saving of lumber in construction and a superior product.

The beginner should be well informed

on greenhouse construction before he commences to build. If you have had some experience with hotbeds, I would advise you to use the sash from these for roofing the greenhouse, making it nine feet wide and forty feet long, inside measurements, or should you use sash bars, build a house sixteen feet by sixty feet, inside measurements, and heat with hot water.

We now come to the choice of crops and the temperature required for each.

	Night tem.	Day temp.
Lettuce	40°—50°	50°—60°
Radish	45°—55°	55°—70°
Tomato	60°—65°	65°—80°
Cucumber	65°—70°	70°—80°

The temperature may be allowed to run much higher than the above, provided plenty of ventilation be given.

There are other crops, such as beets, carrots, beans cauliflower, spinach, celery, peppers, egg plant and melons which may be forced, but the demand is not sufficient at present to make it advisable to grow them on a commercial scale.

Lettuce requires a rich, loamy soil, with considerable sand in it, especially for heading varieties. The Grand Rapids is the variety most largely grown in Ontario, and will thrive on most soils, but better results will follow the use of soil of the above character. I have secured the best results by using a layer of horse manure, an inch in depth, covered with about four inches of soil. By placing the manure at that depth, the plant, when of good size, will readily assimilate the plant food contained in it.

Sow the seed in flats, and cover with about one-quarter inch of good soil. Three weeks after sowing the seed, transplant the young seedlings two or

three inches apart each way into flats or beds; then in two or three more weeks you will have nice, well-rooted, stocky plants, ready to transplant about six inches apart each way into the permanent beds.

The watering should be done in the morning so that the house will warm up and the plants become dry before night. As much damage can be done through improper watering, great care is necessary. Better results will be obtained by thoroughly wetting the ground rather than by sprinkling lightly and often. The final watering should be given just before the plants cover all the soil. Take the hose without the nozzle, and with a gentle stream, thoroughly water, taking care to wet the lettuce as little as possible. If ground beds are used, it will not be necessary to water again.

For the aphid, or green fly, fumigate with tobacco stems, or sprinkle with tobacco dust, taking care not to use it just previous to marketing.

Radishes will not be a paying crop if sown before the middle of February in most localities, and should, therefore, follow a crop such as lettuce. The soil should be made light and should have plenty of humus in it. Screen the seed, using a screen with a one-twelfth inch mesh. Wire fly screen will do if you rub your hand over the seed, shoving some of the seed through. Discard the small seed. Mark the rows about three inches apart with a thin lath, and press the lath into the soil so that the seed will have a good half inch of covering. Sow the seed about one inch apart in the row. Some like to sow more thickly and then thin the plants in the row. By discarding the small seed you will find

that the crop matures evenly and can be pulled clean as required for sale. The Ne Plus Ultra, Rosy Gem, Scarlet Globe and Scarlet Conical will be found to be good varieties for forcing. Either lettuce or radish can be grown between rows of tomatoes or cucumbers.

For tomatoes a rich garden loam is required. Seeds are sown in flats and transplanted into pots. Five-inch pots will give the best results. Plants started the latter part of July and transplanted into beds the middle of September will be in bearing in December. Those started early in December should be in full bearing in June.

The plants should be placed two feet apart, and must be trained upright. I know of nothing better for this purpose than stakes about an inch square and five to six feet in length. Put one end in the soil near the plant and the top end can be fastened to a wire running lengthwise of the house so that the plant can then be tied to the stake with soft twine or raffia. All side or lateral shoots must be removed until the desired height is reached, when the leader should be pinched off. Some train to two or more stems, but it is claimed that their crop will be later coming into bearing.

To produce tomatoes successfully in winter, they must be pollinated by hand. Some use a camel's hair brush for this purpose, but the method adopted by most growers is to use a small spoon, fastened to a small stick a foot or more in length. The spoon is held under the blossom while another light stick of about the same length and the diameter of a lead pencil, is used to tap the blossom. This serves a two-fold purpose, first shaking out the pollen, and then pressing the end of the

pistil into the pollen already in the spoon. Care must be taken not to let the soil dry out. It is a good plan to use a mulch of manure, as this will help to hold moisture. The green fly, or aphid, can be held in check by fumigation with tobacco. For white fly, the different experiment stations recommend the use of hydrocyanic acid gas. The varieties Frogmore and Lorillard have given good results in forcing.

There are two distinct types of cucumber used for forcing. The White Spine type is largely grown in the vicinity of Boston. It is the usual practice with growers there to take off two crops of lettuce and then plant to cucumbers. The seed is sown about six weeks before the plant is required, and it is generally sown in a bed with bottom heat, which is supplied either by steam, hot water or fermenting manure. The plants are transplanted once or twice into flats or pots, as this gives a tendency to root development.

When the crop of lettuce is removed, a trench about eighteen inches wide and of the same depth is dug. Into this is placed about ten inches of well-rotted manure, which is then firmly tramped after the manner of making a hot bed. Then the soil is replaced, and the plants set about three feet apart and trained on a sloping trellis. Double rows eight feet apart are grown on a V-shaped trellis.

Some steps must be taken to secure fertilization of the blossoms in the house. For this a pane of glass is removed from one end, and a hive of bees is placed on a stand on the outside with the front of the hive occupying the space from which the glass is removed. Arlington White Spine or a select type

of this strain is the variety generally used.

There seems to be an increased tendency to grow the other or English type of cucumber for forcing. These are generally grown on benches, and the plants are shaded as soon as the sun's rays begin to get warm. The long fruits should not be allowed to rest on the soil, but must be held up by tying with raffia. Pollination is generally done by hand, either with a camel's hair brush or in the following manner: Pick off a staminate flower, strip back the corolla and insert the anthers into a pistillate flower. These cucumbers have been developed in the humid climate of England, and we should, there-

fore, keep our houses moist by wetting down the walks in the middle of the day. The Telegraph, Covent Garden and Rockford's Market are favorite varieties of this type.

It must be borne in mind that to make a success of gardening under glass you must pay strict attention to detail. It is fully worth your while to visit some of the large growers in the vicinity of Boston and New York, and notice how thoroughly they do their work. No obstacle seems to be too great to be overcome; no detail is too small to neglect. Even should you not learn much, it will give you the inspiration to "go thou and do likewise."

A. McMeans.



BE TRUE.

"But above all, to thine own self be true,"
 No worldly gain, or power, or pride, or pelf,
 Cures that deep pang which makes the traitor rue,
 False to his conscience and his better self.

Hast thou a friend? Then let no lust of gains,
 Urge thee to wrong him in life's fevered race;
 Not e'en betrayal fear, that worst of pains;
 'Tis pain, but not disgrace.

Fear not the scoff of coward and cheat;
 Shun false success, by guile or treachery marred;
 Be sure at last thy truth with truth will meet,
 And thou have thy reward.

—Reginald Gourlay.

The O. A. C. Review



Editorial.

Before the next number of this volume shall have reached its gentle readers, another holly season shall have cheered the

The Glad Christmas Time. Christian world. The Christmas present shall

have been exchanged, and the Christmas carol sung. The light of the New Year shall have dawned, and the first pages of 1907 shall have been turned. To-day there is no land under the broad canopy of Heaven where the hearts of the people should be uplifted and where hosannas might appropriately be sung, if it is not here.

From East to West and from North to South come tidings of God's bounty. The voice of prosperity resounds o'er mountain and plain. Valley, river,

stream and lake join in the theme. Every village, every town, every city, every Province is smiling with complacency. Throughout the land the moan of complaint has been changed to a hymn of satisfaction.

But is it not disheartening, to those who think at all, that history must repeat itself when success befriends a nation! Is it not sad to know that nature cannot produce a people that can stand prosperity! Not long ago the times were harder, the outlook not so bright, and the prospects not so dazzling, and we pledged ourselves to be true if good fortune would return again.

Many times our prayers are answered indirectly; less frequently do we re-

ceive a direct response; and often, fortunately for ourselves, there is no reply at all. This time, however, for better or for worse, we have gotten what we asked for in the way we asked it. Unparalleled prosperity is ours. Trade and commerce, we have that. Increase in population, we have had astoundingly. The soil has produced extravagant yields. But what about our pledge? Even if Christmas is approaching a little wholesome reflection may not spoil the festival. Perhaps the good God will love us more if He detects a note of sadness in our praise on this glad day.

At this time last year we outlined very clearly our policy regarding what was formerly known as our

Not a Christmas number, and Special what is now merely an ordinary December Number. Number

Notwithstanding our explanation at that time, we are at present continually receiving requests for extra copies of our Xmas Number. In order that no disappointment or misunderstanding may arise in this connection, we feel compelled to once again explain the situation.

The majority of monthly publications, including college magazines, aim to celebrate the holiday season by converting their December issue into a special number. In itself this ambition is a laudable one, and was formerly shared by us. Moreover, the retirement of the Editor-in-Chief of the Review always takes place at the end of the year, and it is but natural that he should wish his last number to form a grand climax to the progress and achievement of his term of office. Each editor in turn fell a prey to this desire,

but as years went by its fulfillment became a much more serious proposition.

In order to give a final proof of his ability as a journalist, and to demonstrate the general progress of the Review, he felt that he must eclipse not only his own previous efforts, but also those of his predecessors. The result was, without exception, a production which reflected the greatest credit upon the Editor and his staff, and which advertised the college as perhaps nothing else could. But as the task of accomplishing this became more difficult, more time had to be devoted to it. The Editor could ill afford to spend so much time upon the Review during the fall term of his fourth year, nor could those of the staff, with Christmas exams. to face, afford to spend all their spare time in December in drawing special features and working out details.

More important, however, from the standpoint of the Review, was the expenditure of money required. While the time could ill be spared, the money could not be spared. It was manifestly unfair to the staff of the spring term to severely handicap effort and progress by eating into the finances so far that after the middle of February the more pressing invariably became "Where will the money come from."

In order that all these troubles might be avoided, it was decided last year to give up all idea of a special Christmas Number. This year we take the same stand, and to those who follow our endeavor with interest, we again briefly outline our policy—steady and uninterrupted progress in interest and attractiveness from month to month, in so far as changing conditions will allow, with no climaxes and corresponding anti-climaxes.

College.



G. M. FRIER, '08

EDITOR



LIFE in a college residence! It has its advantages, and its disadvantages. One does not need to reside here long to become aware of that fact. Probably, however, every set of circumstances in which a person is from time to time placed, is attended by advantages, mingled with disadvantages. Yet one has it in his power, ordinarily, to do much to minimize the one, and magnify the other, or vice versa; so it is quite safe to say that life here, as elsewhere, in these days, is pretty much what one makes it. The more sane and normal the individual is, and the more fully he sees things in their right relations, the more adaptable he becomes, and the better he harmonizes with the aggregation of which he forms a part.

A body of students is suggestive of a mixture of dissimilar chemical substances. They come together in a promiscuous mass, a mechanical mixture, as it were. Natural forces begin to act with greater or less activity. A process of rearrangement and adjustment begins. This process goes on for

some time. A sort of equilibrium ensues, which is maintained until something intervenes to disturb the harmony of the whole, some new force acts on the mass or some part of it, some element is added or removed. A more or less extensive readjustment process again takes place, and a uniform vibration is resumed, and so on to the end.

A brief reference to some of the outstanding advantages and disadvantages of life in residence would be in order here. First, the advantages: (1) The benefits of association from a social and disciplinary point of view of a body of students with similar hopes and ambitions, and with equal rights and privileges. (2) Convenience in regard to use of opportunities for development. (3) Benefits of co-operation, and concentration of energy. Secondly, the disadvantages: (1) Friction between members of the body corporate and consequences thereof. (2) Hindrances placed in the way of industrious and well-meaning students by others of idle and vicious habits. (3) Narrowness of sphere of action, and limitations arising from inequality in regard to social and intellectual attainments. (4) The tendency of students to go to harsh and unjustifiable extremes in regard to dealings with other students.

It is a recognized fact that as a general rule, the advantages of residential life far outweigh the disadvantages. It is the duty of each student of this college to do his utmost to advance the

best interests of the college and of the student body, and to establish and maintain for the college a reputation that will win for it the good opinion of everyone, far and near.

Addition to Physics Building.

When the present physics-biology building was erected, an appropriation was made for a building to be used in connection with those departments for experimental work in biology and physics, a building in which conditions of temperature, moisture and light could be controlled. Owing to the tenders for a building which was deemed suitable being higher than the appropriation, the work was not commenced at that time. Recently, however, the financial part of the scheme has been adjusted, and work on this much-needed adjunct to the physical and biological departments has been begun.

The structure is to be 50x72. It is divided into four compartments, two for physics, and two for biology. One of the physics compartments will be devoted chiefly to demonstrations and student work in drainage; the other to investigation work carried on by the departments along the line of physical problems in regard to the soil. These two rooms are separate, and conditions can be controlled, so that growth under various conditions can be tested. It is proposed to lay particular stress on drainage, on account of the active interest farmers have taken in this branch of the work of the department, and the appreciation they have expressed of the direct assistance rendered them by the department.

The other two compartments which are for biological work are divided into three sections. One of these latter is fitted especially for work in micro-

photography. The other two will be used for studying various phases of life under conditions that may be controlled to suit the problems under investigation. The whole space in the building is about equally divided between the two departments. Each department has an entrance to the basement, which will be used for storage of apparatus and supplies.

The second monthly meeting of the Union Literary Society for the current college year was held in Massey Hall, on Nov. 10th. In many respects this meeting was a unique one. The hall was filled to its utmost permanent seating capacity. It is certainly neither exaggerating nor boasting to say that every number on the programme was both well rendered and much appreciated. Every number that could be encored, was encored most heartily, but owing to the length of the programme these encores could not be responded to.

Professor H. S. Arkell, honorary president of the Union Literary Society, gave an address on "College and Country," which was listened to with rapt attention. Very rarely is there delivered from any of our college platforms an address characterized by such masterful eloquence, inspiration and helpfulness as that of Professor Arkell. The piano solo by Miss Hill, and the vocal solos by Miss Gillespie and Mr. Howell, were artistically and pleasingly executed. The debate, a constant feature at our literary society meetings, was on this occasion a strong one. The resolution was, "That the Yellow Race is Destined to Become the Leading Race of the World." The affirmative was supported by Messrs. L. Caesar and L. A. Bowes, and the negative by

Messrs. J. M. Lewis and F. E. Millen. The decision was given in favor of the negative. After the regular programme had been disposed of, the prizes for the cross-country run were presented.

College Organizations.

In this, the last issue for the year 1906, we take the opportunity of publishing a short resume of the work accomplished during the past twelve months by the different college societies. Next term sees the appointment of a new president to the Y. M. C. A. in the place of Mr. Crow, and the end of December also marks the end of Mr. Barton's term as president of the Literary Society. Both of these men have won unstinted praise for the untiring efforts they have put forth in the development and organization of their respective societies, and in retiring they have the assurance that their efforts have been crowned with success, since the influence of a competent guiding hand is reflected in the present prosperous condition, and in the enterprise, of both the Y. M. and the "Lit." The Athletic has still five months under the able leadership of Mr. Mills.

Literary Society.

On Sept. 20th a committee was appointed to divide up the second, third and fourth year students between the Alpha and Delphic Societies. The Freshmen constitute the MapleLeaf Society. Regular meetings of each of the three societies were held every Saturday evening in Massey Hall. Joint meetings of the three societies, together with the Macdonald Institute Literary Society, were held once a month. At these meetings the best talent of the O. A. C. and the Institute, together with

good outside talent, appear on the programme. This term an effort was made to arrange inter-collegiate debates with Victoria College, Toronto, and Woodstock College. Victoria had already entered an inter-collegiate union, and felt that they had all they could attend to in the debating line. A debate was arranged, however, with Woodstock, which took place at Woodstock on Nov. 23rd. The subject discussed was, "Resolved, that the Partition of Turkey would be in the Best Interests of Mankind." The O. A. C. was represented by J. W. Crow and D. M. Rose.

A liberal appropriation has been made for magazines for Massey Hall Reading-room.

The work of the Literary Society, so ably presided over by Mr. Barton, has proven to be of great value to those who gave themselves enthusiastically to the work. It is not too much to say that every man who has taken advantage of the opportunities for public speaking, etc., afforded by the literary societies, has made marked improvement, improvement which will be of value in after life.

Athletic Association.

The work of the Athletic Association, presided over by R. W. Mills, has gone forward in a very systematic and highly beneficial way. The student body, as a whole, does not yet estimate athletics at their true value. There is not space here to enumerate the advantages of athletics to the student. The work has been so comprehensive (and yet everything undertaken seemed necessary, in accordance with the excellent policy of the executive), that only a brief summary of the work can be given here:

1. Formation of Western Inter-Collegiate Athletic Union, embracing St. Jeromes, Woodstock and the O. A. C. The advantages of such a union are, (a) a saving in expense; (b) playing college men; (c) more gentlemanly sport.

2. Football systematized, first and second teams with captains, and third



R. W. MILLS, '07.
President of Athletic Association.

team organized gives a nucleus for next year.

3. Sports Day carefully studied, and its defects, and suggested improvements recorded in writing for next year.

4. Special effort made to arouse united college spirit by organizing rooters, taking supporters to matches, and having inter-year matches in football.

5. Kerr entered to represent college in G. R. R. A.

6. Paper chases inaugurated to increase competition in cross country running next year.

7. Indoor baseball and basketball or-

ganized on inter-year footing, to increase competition.

8. First-year meet to prepare for and interest men in the final indoor sports to come off next term.

9. Rink improvements.

10. Western Hockey League to be organized, with probably four teams.

Objects of Executive:

1. To improve and systematize all college sport.

2. To increase interest in thorough college sport.

3. To provide sport for all classes.

4. To arouse a strong college spirit.

5. To go ahead in every line.

Y. M. C. A.

There is great need in our college today of influential Christian men. The conditions under which Christian work in college is carried on are essentially different from those under which other lines of Christian activity are conducted. The city Young Men's Christian Associations have excellent gymnasiums with athletic organizations of various kinds. They have debating and musical clubs, social departments and educational features adapted to the needs of their large number of members. Although these departments are entirely separate and distinct from the religious aspect of the work, they undoubtedly serve to bring many men into more or less close touch with the association and with Christian influence.

Our work is purely religious. Our association attracts only those men who are interested in it for its own sake. College men may identify themselves with any of the phases of student life without in any way connecting themselves with the work of the Young

Men's Christian Association. The drawing power of the city association places a man in the center of a great sphere of usefulness, while in college a

directly and personally, and not through the medium of an organization. Hence the great need of personal power and influence! Men are intelligent and observant, and are continually forming character and life-long ideals from the best with which they come in contact, and nowhere does a manly life count for more than in college.

The Young Men's Christian Association aims to develop wholesome, honest manliness, and we believe that the past year has seen progress toward this end. Much still remains to be done, and we trust that succeeding executives will take full advantage of their golden opportunity to influence men for good.

J. W. C.



J. W. CROW, '07.
President of Y. M. C. A.

Christian man must create his own sphere. In college a man comes into touch with all classes of his fellows,

A meeting of the Provincial Entomological Society was held in the biology class-room on Wednesday, the 14th of November. In the absence of the president, T. D. Jarvis, Professor McCready occupied the chair.

The programme consisted of "Notes and Observations by Members"; "Jugatae Entomological Club of Cornell University," by Mr. Howitt; "Exhibition of Cases of very Beautiful Butterflies from Japan and the slopes of the Himalayas," by Dr. Bethune; an address on "Winter Collecting of Forest Insects," by Professor E. J. Zavitz.



Athletics.



G. B. CURRAN, '08
EDITOR



Football.

THE pennant's ours. This concisely expresses the whole football situation. Berlin, by its untimely, but altogether unretarded withdrawal, forfeited all its rights in the W.I.-C. A. U., so that O. A. C. does not have to play off what otherwise would have been a tie. O. A. C. has walloped Woodstock twice, so the pennant will winter in Guelph.

Our college football team has had a most successful season. Starting the season crippled by the loss of nearly all last year's regular players, the team had to be built up and developed from what talent there was available. What success has attended the persistent training of Coach Hibberd and Manager Fairbairn may be seen by looking at the record of the team for this season. They lost but one game, and that away from home, and during the season have scored 79 points to their opponents' 34, or more than twice as many. Surely a good record for a new team. Much of the team's success is due to Norman Foster, our football captain.

Always cool and nervy, ready to take advantage of any chance presenting itself, he handles the team well, and distributes the work among all. Each player thus gets a chance to distinguish himself, and the result is the best team we have ever had. Next year most of this year's players intend to return, and with the material that has been developed in the second team this year, we will then have a team that will be able to take care of itself in much faster company than we have had this year.

O. A. C. Wins From Victoria College.

To get the team in shape for their game with Berlin Manager Fairbairn brought the strong Victoria College team up from Toronto on Oct. 2nd to give our boys some real hard practice. Unfortunately the rain fell in torrents all day, and part of the game was played in a heavy shower. The slippery ground and greasy ball rendered much passing too risky, and the game resolved itself into line-bucking and kicking almost entirely, very few runs being attempted after the first quarter.

For the very first time this year O. A. C. were on their metal from the start, and they played the Victorias completely off their feet during the first ten minutes. Almost at the start Zavitz kicked a nice drop goal. Next was seen some of the nicest passing done by O. A. C. this year, the backs tearing off big chunks of territory on each run. On a fumble of Curtiss, Vics

downed him just outside our line, and O. A. C. could not gain an inch on two bucks, but Zavitz relieved on a long kick to center. After much close play in center, Murray secured the ball and crossed the line. Treherne converted. Half time, score, O. A. C., 10; Victorias, 0.

Hoy made a pretty run of 25 yards, and O. A. C. threatened always. Their full back made a pretty save, but lost the ball to Murray when downed, and Zavitz kicked for a rouge. Both teams were playing hard now, and were quite evenly matched, but Curtiss made another long run for another touchdown, which was not kicked. Vics played desperately to avoid a whitewash, and when Curtiss muffed the greasy ball were on him like a flash for their only score of the game, a rouge. O. A. C. had all the better of the rest of the game, which ended with a nice 25-yard run by Curtiss, the final score being, O. A. C., 16; Victorias, 1.

O. A. C. supporters were naturally elated over the result, as Victoria is considered a strong team. Hoy and Curtiss did good work in the back division, Foster was ever reliable, and Cutler and Lewis made some spectacular plays. The O. A. C. team lined up in the following order:

Full, Hodson; halves, Hoy, Zavitz, Curtiss; quarter, Foster; snap, Coglon; guards, Cutler, Treherne; tackles, Sirrett, Lewis; wings, Mackenzie, Murray.

O. A. C. Trims St. Jerome's.

By the score of 12 to 6 O. A. C. defeated St. Jerome's College, Berlin, on the college campus on Nov. 3rd. And the score above indicates the relative merits of the two teams, as our boys beat them in all departments of the

game. Berlin came down to win by fair means or foul, for they wanted that pennant, but the trouble was that we had a wee bit the better team, who out-pushed, out-kicked, out-run and out-tricked theirs, so that naturally Berlin had to console themselves with small end of the score. Berlin were up against a far stronger team than the one they played in Berlin, and soon found out that the tactics they used in that game were utterly useless here. The weather was fine and cool, making a grand football day.

Foster kicked off, but Berlin brought back to center. Both lines were evenly matched at this stage, and O. A. C. lost the ball on three bucks. Berlin nearly scored on a muff, but Squirrel made a grand save. Mackenzie secured the ball on a fast follow up, and Berlin's line was in danger, but they managed to kick the ball out to center, where Squirrel made a spectacular catch. No score in this quarter.

The second quarter was disastrous for the college. Berlin seemed to have more spirit now, and rushed matters. Somebody muffed behind the line and Berlin's wings were on them for a rouge. Shortly after this Squirrel caught the ball behind the touch line and attempted to carry it out, but was tackled heavily and the ball slipped from his hands in falling. Berlin secured for a touch down, but could not convert. Then followed some close, hard playing but the quarter ended with Berlin leading 6-0, although their touchdown was the veriest kind of a fluke.

After half time, O. A. C. played much better. Curtiss made a 20-yard run, and Hoy did some very effective bucking. It was at this stage of the game the O. A. C. team was seen at its best.

Our line broke through on every buck, and the backs handled the ball to perfection. Curtiss ran 25 yards on a long pass from Foster, and Squirrel was enabled to make a drop kick. Squirrel was easily the best man on the field, and kept dropping the ball around Berlin's goal-post, resulting in two more rouges before half time. Score now, O. A. C., 6; St. Jerome's, 6.

In the last quarter Curtiss made another 20-yard run, and Squirrel kept up his effective kicking. O. A. C. had all the best of the play, our wings breaking through time and again and intercept-

of the game showed clearly that the O. A. C. line was too strong for their opponents, while our back division, strengthened by the redoubtable "Billy" Squirrel, was equal to all occasions. Squirrel was the star of the back division, but was ably assisted by his three halves. Mackenzie and Murray followed up fast, and were very effective. Cutler helped the backs in their bucking, and Coglon and Lewis worked hard and had their men going long before time was up.

The O. A. C. team was: Full, Squirrel; halves, Hoy, Zavitz, Curtiss; quar-



The Rugby Team of 1906.

ing the ball. Berlin were forced back steadily but surely, and Hoy bucked for a touchdown. Treherne kicked quite easily. St. Jerome's were never dangerous again, and the call of time alone prevented O. A. C. from running up a score. The full time score was, O. A. C., 12; Berlin, 6.

On call of time the pent-up enthusiasm of the students burst forth, and the whole football team was carried off the field on the shoulders of cheering students. Everybody wore a happy smile, and walked around looking for the team to shake hands with. The result

ter, Foster; snap, Coglon; guards, Cutler, Treherne; tackles, Sirrett, Lewis; ends, Mackenzie Murray.

O. A. C. Again Trounces Woodstock.

On Nov. 17th, the college team travelled up to Woodstock and undisputably showed that they are Woodstock's masters in the art of Rugby. The score was 22—3 for O. A. C., and Woodstock were lucky to get off with that. Rain had fallen all day, and the field was greasy with mud. No runs or passing could be effectively worked, and muffs on both sides were of alarm-

ing frequency. But three supporters accompanied the O. A. C. team, and their faint chirps were altogether drowned in the mighty roar of the Baby City "Babes" when Woodstock led at quarter time. Our boys were met at the station and escorted to Woodstock College, where they were first dined and then courteously shown through every department of the college. No more decent treatment could have been received, and the boys wish to express their thanks and promise to return the compliment when Woodstock again visits here.

O. A. C. expected an easy win, and did not exert themselves, but Woodstock played with lots of ginger, and forced a rouge on McCrimmon's long kick. O. A. C. tried a passing and running game, but could not hang on to the ball, and on muff after muff Woodstock secured, and by snappy work scored two more rouges. College worked a fake end, and Cutler went around the end for a run of 75 yards and made the first touchdown of the game. Half time was now up, with O. A. C. in the lead 5-3.

The third quarter was a disastrous one for Woodstock. The superior condition of the Guelph boys now told, and O. A. C. bucked the line time and again for single gains of ten yards. Almost at once after play was resumed, Foster passed to Curtiss, who went over for five points. Treherne kicked another point. College kept plunging through the Woodstock line, and Hoy bucked over for another touchdown, but this was not converted. Curtiss was on the spot when needed, and nailing Foster's pass, crossed the line for still another touch, and this was converted. O. A. C. let up in the last half and held their

opponents safe. In this quarter Curtiss did some great defense work, and his running and dodging was of the most brilliant character. The game ended with O. A. C. in the lead with 22 and Woodstock with their lone 3.

Hoy did some great bucking during the game; Bowes led many bucks for long gains, while Cutler made the longest and finest runs of the season. The team was considerably changed about for this game, and lined up as follows:

O. A. C. team: Full, Curtiss; halves, Hoy, Zavitz, Lewis; quarter, Foster; snap, Coglon; guards, Cutler, Treherne; tackles, Bowes, Sirrett; ends, Hodson, Murray; spare, MacLennan.

Five-Mile Cross Country Run.

On Nov. 3rd, the annual race for the Doherty-Dryden cup took place. Continued cold and wintry weather for a week previous to the race caused the track to be in very bad condition, one field in particular being so deep in mud that the competitors sank to the ankles in many places. As a result of the heavy track, the time made was slow, the winner remarking it was the hardest race he had ever run.

The competitors, six in number, toed the line at 1:30 o'clock, and posed for their pictures. At the start, Walter Kerr jumped into the lead and kept up the same pace throughout the whole race. He gradually distanced the rest, and led a long way on the first half, with Bray a good second, and Strong, Manton and Brownridge in a bunch. Great excitement was caused by the report that Kerr was in sight after running only 22 minutes, but it was only Dennis on the first round. Kerr did not exert himself after he had gained his lead, and maintained his position to the

finish; time, 35 minutes. Alf Davidson paced Kerr the last 25 yards, and Kerr responded with a spurt that would have beaten many a fresh sprinter. Bray finished an easy second, and Strong, Brownridge and Manton produced the closest race of the day, they sprinting just at the finish and winning in the order named.

The prizes were presented at the Union Literary Society on Nov. 10th, and Walter Kerr received the cup for good as he has fulfilled the condition of winning it three times in succession. All the other competitors were presented with ribbons.

The cup is gone now, and we must look about us in order to see where we may procure another. The race is too good to do away with. Whether the winner of this year's race or some of the men foremost in the ranks of the agricultural interests at Toronto, or some of the old students who wish to have their name fondly remembered during succeeding years by the students of this college, will give a cup for future competition, is not known, but rumor has it that more than one man is ready to step out and present us with one. 'Twould be a delicate compliment to our Alma Mater and a lasting memorial to his name if the present Minister of Agriculture would take the liberty of donating a cup, to be won on somewhat similar conditions to the last. At the worst, President Creelman would liberally help the boys out in supplying one for next year's race. We earnestly hope that someone will be kind enough to donate a cup so that by no possibility will the grand old sport of cross-country running become dormant through lack of an incentive to train.

The Hockey Outlook.

From the events that have transpired during the last few days, it is extremely unlikely that we will play hockey with the Western Ontario colleges. The disruption of the Inter-Collegiate League is imminent, and it behooves us to be up and doing to find games for our hockey team. A few games here with some of the strong college teams from Toronto would be a great drawing card, and it is altogether likely that our manager will be able to induce some of them to come. Of course, we can always have an exhibition match with our old rivals, the Bankers, but they are reported weak this winter, so there would not be overmuch glory gained by defeating them. Some of the other city teams would no doubt give us matches, but something more than exhibition games is required to produce interest and induce men to turn out and make the hockey team. A good series of inter-year games would, without doubt, create tremendous interest in the college, and would serve to keep the noble sport of hockey green and flourishing. Many good players would be developed this winter, and if we get in a league next winter the team would be materially strengthened by such recruits.

Every man that can play hockey or intends to play hockey, should get out to practise at the first of the season. There is no favoritism shown here; the best man gets the position on the team, and a man has to work to keep his position on the team. There are several vacancies to be filled on this year's team, so every man must get out on the start if he intends making the team. And every man wishes that.

Our Old Boys.



W. S. JACOBS, '07
EDITOR



To Our Alumni.

A GAIN another Christmas time approaches, and again we grasp the opportunity of extending the joyous palm to all our friends, students and ex-students. Another year has slid by with all its varied and various sorrows and joys, its surprises and disappointments and good resolves, which were made and almost as quickly forgotten. At this season of the year,

"When the bees are in the hive
And the honey's in the comb,"

the thoughts of our old boys will travel back reminiscently to the time when they meandered around the corridors, dodging the resident master and others, whose presence seemed at that time to be more or less of a necessary nuisance, or the time when the breezy call of "Farm Cattle" vexed the drowsy ear of morn. Those times are past, but they are, we do not doubt, still fondly cherished in the recollections of our graduates and associates wherever their lots may be cast. Just now, when rejoicing is so universal, we desire to extend to

all "Our Old Boys" our best wishes for a joyous and merry Christmas season, and an exceeding bright, happy and prosperous New Year.

G. H. Hutton, B.S.A., who has been recently appointed to take charge of the new Experimental Farm at Lacombe, Alta., graduated from the O. A. C. in 1900. While at college he took a very active part in the life of the institution, and was considered one of the ablest speakers of his time. On graduating, Mr. Hutton returned to his farm, where he specialized in the breeding of dairy cattle and bacon hogs. He has had considerable experience as a live stock judge and Farmers' Institute worker, and is well equipped for the work he is about to take up.

Fred. J. Boyd entered the Ontario Agricultural College as a member of the class of '01-'02. Probably no man in his class was more popular than he during his college course. His broad, general knowledge of facts, combined with a natural sunny disposition, made him a general favorite with students and staff alike. Owing to the pressure of work on his father's farm, which is situated at Merrickville, Ont., he was unable to return after completing his Associate course. At the old homestead, "Ted" is making his mark, and success is attending his efforts. We predict continued success, for, as the old saying goes, "You can't keep a good man down."

It will be of considerable interest to

those who attended the college during '02-'03 to know that their old classmate, Joe Laird, is now among those who have had their eyes opened. "Joe" entered the O. A. C. fresh from his father's farm at Blenheim, Ont., and made good progress as a student. Thoughts of the "Girl he left behind him," so influenced his career that his stay at college was limited to the two years' course. That he made good use of his time while here is exemplified by the success as an agriculturist with which he has met since leaving us, and we look forward to hearing much of him in the near future. The Review joins their many friends in wishing Mr. and Mrs. Laird all kinds of happiness, prosperity and success.

The following is a clipping taken from the Iowa State College Journal:

"T. Herbert Lund, who was taking special work with the junior dairy students last winter, is now in charge of the George Creamery, Lyon County, and reports a very busy summer. He expects to be in for the short course again this winter."

Lund will be remembered as a member of the '06 class. His present good success is due, no doubt, to his natural ability which he so clearly demonstrated as a student of the O. A. C.

Students who attended the college when Professor Doherty was a member of the staff will not soon forget him. Professor Doherty was engaged in the Entomological Department at the O. A. C. during the years '00-'02, leaving at the end of that time to manage the Guelph Stove Foundry Company. Last spring, upon receiving a good offer from the Sussex Manufacturing Company, a large establishment situated at

Sussex, N. B., he accepted it, and is now engaged in the management of it. Although he was not connected with the college in any official capacity during the past two years, he always took an active interest in the happenings, especially the indoor sports. Hardly a year has passed that he has not acted as referee at the indoor meet, and needless to say his decisions were always met with popular approval. We trust Mr. and Mrs. Doherty will enjoy life in their new home as much as they were enjoyed by friends around Guelph and the College.

An ex-student who is becoming well known throughout some parts of the United States is Alex. Irvine, B.S.A., '05. As a student Alex. was not as well known as some others, partly on account of his not residing in the residence during his college course, and partly on account of his naturally modest disposition. He took the freshman, sophomore and junior years with the class of '04, dropping out at the end of that time to take the Dairy School course, in order to qualify for specializing in dairying in his senior year. His work in his fourth year was marked by quiet, assiduous attention to his studies, resulting in his attaining a standing considerably above the average. He left shortly after receiving his degree, and has been engaged in managing a creamery and ice cream establishment in Dakota. Quite recently he left this position in order to become promoter and solicitor of the Central Produce Company of Alma, Mich.

Not often do we hear of an ex-student making himself so much a worker for public good as has W. H. Owen, '84-'85. As a student, Owen was in-

clined to be of a rather retiring disposition, but his rubbing up against the world has revealed the fact that not only is he a man of ideas, but also he has the ability of making other people think according to his ideas. After leaving the O. A. C. he returned to England and took a course at an English university, graduating with a very creditable standing. At present he is endeavoring to found a University College at his home city, that of Hull, and indications point to his final success. His efforts in such a worthy cause are highly commendable and the Review joins his old friends in wishing him every success in his endeavors.

When "Wif" Lennox entered the O. A. C. in the fall of '01, little did he think that his college career was to be the brilliant success that it was. During his freshman and sophomore days he served on different committees, and in his junior year not only won the five mile cross country run, but was very close to the grand champion on sports day. In his senior year he warmed a place on the stock judging team and also filled the position of President of the Union Literary Society. In this capacity he presided over literary meetings, which for enthusiasm, enjoyment and general good derived by the student body, have never been surpassed. He was a born organizer and worker, and had the knack of inspiring his helpers with some of the enthusiasm which he possessed. "Wif" graduated in '05, with a very creditable showing, and since then has been "solving the science of the soil" on his farm at Newton Robinson, Simcoe County.

One by one ripples pass over the

somewhat placid existence of our ex-students, and one by one they loose from their secure moorings of single life and embark upon the broad and sometimes tempestuous sea of matrimony. The latest recruit to the ranks of the benedicts among our ex-students is J. D. McLaurin, who attended the college during '99-'00. "Mac." came to the O. A. C. from Glengarry, Ont., but is now



W. J. LENNOX, B.S.A., '05.

farming at Springbank, Alta. The simple life, as it is lived in single blessedness on the "Pa-rairie," did not conform to "Mac's" ideal of true happiness, and as a consequence this fall he turned his face eastward again, and returned with Miss Susan McLaurin, of Vankleek Hill, to aid him in the development of his portion of the wide and glorious

west. The ceremony took place on Thanksgiving Day, Oct. 18th. To have long continued success, and blessings large and great is the wish the Review and friends extend to Mr. and Mrs. McLaurin.

W. T. McDonald, B.S.A., came to the O. A. C. from Teeswater, Ont. As a member of the year of '03, he graduated after a very successful college career. "Mac." had but two weaknesses (or rather were they strong points), viz., an inability to keep from loving all ladies, and a fondness for Limburger cheese. These two weaknesses often got him into some very embarrassing and amusing situations. That they have interfered in any way with his progress is quite evident by the way he has forged ahead since leaving the O. A. C. For some time after graduating he was at Farmington, Minn., but has just completed the course for the M. S. degree at Ames, Iowa. He is now stationed at Oklahoma State College, Stillwater, Okla., as Professor of Animal Husbandry.

C. G. Montgomery, during his time one of the best known and most popular men in the class of '97, is now farming in the west. "Montie" came to the O. A. C. from New Richmond, Quebec, but owing to the matriculation standing being required at that time, did not return for his two senior years. On an excursion to the west, he was so taken with the country that he decided to settle there, and selected a place at Ranfurly, Alta., near Edmonton. Judging by previous performances we will

now expect to hear of "Montie" showing the natives how to do things.

It came as a surprise to the many friends of Dr. Judson F. Clark to hear that he had resigned his position as Provincial Forester for Ontario. The past career of Dr. Clark has indeed been a changing one, but always changing for the better. We first hear of him as a member of the class of '96. For the two succeeding years he was resident master, leaving at the end of that time to enter Cornell University in order to further pursue his studies. In 1899 he was appointed Assistant Botanist, and in 1900 was advanced to Fellow in Botany in that institution. Dr. Clark graduated from Cornell in 1901 with his Ph. D., and was offered the position of Professor of Forestry by the New York State College, with a year's leave of absence for study in Europe. On his return in 1902, he assumed control of the Forestry Department at Ithaca, N. Y., and remained there until transferred to the staff of the Department of Forestry at Washington. In 1904 he was appointed Provincial Forester in connection with the Crown Lands Department, Toronto. His resignation from this position to take charge of a large lumbering concern in British Columbia, is but another step upward in his ladder of success.

Note.—Through an oversight we gave in a previous issue the address of R. W. Wade, '05, as Lafayette, Ark. Mr. Wade is now at the Arkansas State College, which is situated at Fayetteville, Ark.

Macdonald.



Miss K. MacLELLAN
EDITOR



A Country Wedding.

THE "gym," Macdonald Hall, was the scene of a very pretty but quiet (?) wedding on Hallowe'en, when Miss Henrietta Theodora Williams-Williams, daughter of Mr. Peter ditto-ditto, and niece of Mr. Josiah and Mrs. Samantha Allen, became the blushing bride of Mr. Thos. Thumb, the Vicar of Wakefield, officiating.

The willowy beauty of the bride was set off to advantage by a stunning costume of borrowed finery with a court train of lacy curtains, held in place by a chrysanthemum of great size and beauty. She carried an Easter lily in her hand. The Geisha Girl made a sweet bridesmaid, and Mr. Algernon Sidney, an effective Summer Man, supported the trembling groom, who, in the absence of a stepladder, was obliged to refrain from whispering sweet nothings in the ear of his bride.

The wedding party entered the spacious and handsomely-decorated hall to the familiar strains of "Auld Lang

Syne," played by the Duchess of Devonshire, assisted by Kubelik on his violin. A touch of warm local coloring was added by a telescope valise in the skilful hands of an Italian organ grinder.

The bridal party, headed by four charming Parisian artists, wound its majestic way around the room. The sorrowing mamma, portly in black satin and miscellaneous trimming, carried a "worth" creation in the form of an "invert" sunshade, and leaned on the arm of a resigned and perspiring spouse. The ring was borne on a Macdonald dinner tray by a sweet little middy—a nephew of the bride's cousin. This part of the ceremony was interesting, especially to those who knew that the said tray was an heirloom in the bride's family.

The ceremony itself was most impressive, the stentorian "you bet" of the groom contrasting vigorously with the gentle assent of the bride, as the voices sounded through the intense silence of the room.

After the agonized and heart-broken parents had been removed from the room and the congratulations received, the party descended to the dining-room, where an elaborate dejeuner was served.

Promptly at 10 o'clock the wheelbarrow arrived and the happy pair departed, amid showers of pumpkins, raisins and good wishes. After a short honeymoon at Guelph Junction and "points east," Mr. and Mrs. Thumb

will take up their residence at their pretty new home on Scratch Alley.

The rest of the evening was spent by the guests in dancing and other frolicsome revelry.

Among the guests from a distance were Mephistopheles and Marguerite, Sis. Hopkins, Queen Elizabeth and Tommy Atkins, Buster Brown and Mary Jane, The Gold Dust Twins and their maternal grandmother, Uncle John and Old Mother Hubbard, Rolanda, the Gypsy and the Virginian, Tena and Tim, Topsy, Sir Harlequin and Columbine, Sister Nonica, Donna Onizote, Sister Nonica, Jack and Jill, The Queen of Hearts, An O. A. C. Football Man and a Lady of Galicia, Two Fishwives From Normandy Coast, Mr. and Mrs. Jack Hayseed and their sweet infant daughter Grace, a body of Red Cross Nurses, Jack the Sailor and a Wattean Shepherdess, Two Colonial Ladies, Priscilla, a Fife Princess, Uncle Tom, Canada, The Flower Girl and Milk Maid, Red Riding Hood, Alice in Wonderland, The Babes in the Woods, The Auto Girl, Pompadour, and last, but not least, numerous Spooks.

Notes Too Late for the Press.

Sis arrived somewhat late, and was somewhat dazed by the brilliant jewels and conversation of the assembled ladies. William's catering was insufficient, but she afterwards found solace in a quiet corner and a home-made biscuit rescued from the depths of a green carpet bag.

Resolved, That Hallowe'en parties, even under the protective care of Mary Jane, are a delusion and a snare, and a pitfall to the feet of the unwary. Still I had a good time, as a bandaged ankle

bears witness even unto the present day, and that baby and Mephistophele's tail certainly were interesting.—Buster Brown.

\$500 Reward—To anyone discovering the whereabouts of the Virginian and Rolanda, Queen of the Gypsies, who were last seen spooning in the postoffice alcove. The finders will please return the elopers dead or alive and oblige the heartbroken friends.

Algernon Sidney, to his partner—Modern fuels certainly seem incapable of keeping some of the occupants of this place in a comfortable condition of warmth.

Among the abrupt atmospheric changes noticeable during the evening were repeated squalls from the infant portion of the assembly.

On Friday, Oct. 26th, Miss Watson and her staff entertained the senior class of the O. A. C. and the senior Normals of Macdonald.

All the guests arrived in a body sharp at 8 o'clock, and after the usual introductions and a few minutes' social chat, all barriers were broken and the fun of the evening commenced.

A library-guessing contest proved a most successful form of entertainment. The girls were called from the room and by the magic of small suggestive cards were converted into "books," and carefully placed in the stack-room, over which Miss Given presided, as librarian. The ringing of the gong announced the opening of the library, and the men who had been given library cards in the meantime, flocked to the desk, the more earnest students demanding a text book "Soil," by King, while those in search of entertainment asked for such books as "Wild Animals I Have

Known," "Pickwick Papers," etc. All, however, sought some quiet nook and spent the next three minutes striving to read the title of their "books," which had to be returned to the librarian and changed every three minutes. During the last ten minutes the "books" were put into general circulation and the cardholders were given an opportunity to choose their partners for supper.

When this was announced the men were informed that they must prepare the first course, and were forthwith enveloped in huge (?) white aprons, which gave them the appearance of real French cooks, and then all proceeded to the south kitchen.

Here, although the cooks knew little of the value of level measurements or the virtues of the wooden spoon, yet, under the skilful direction of Miss Watson, many successful dishes of "English monkey" were prepared.

The supper was most informal. The tables, which were daintily decorated with candles and mums, were laid in the upper hall and presented a very attractive picture. The dress of the gentlemen at supper was unique in that they all wore aprons.

Mr. Hamer, on behalf of Miss Carlyle, president of the Senior Normals, proposed the toast to Miss Watson and her staff, and this was gracefully acknowledged by Miss Watson in a few well-chosen words.

The last half hour of the evening was spent around the piano singing the much-loved college songs, and the time came all too soon when "Auld Lang Syne" had to be sung, and the party broke up, everyone agreeing that it was one of the happiest, brightest and most original evenings they had ever enjoyed.

A Pleasant Memory.

By the kind arrangement of Professor Harcourt, Miss Watson, Mrs. Harcourt, a number of the staff and the seniors of Macdonald Institute, spent Wednesday, Nov. 14th, visiting some of the manufactories of Berlin. Mr. Tytler, P.S.I., Wellington County, joined the party, and a most enjoyable and profitable day was spent by all.

On arriving at the stirring little town, we proceeded at once to the sugar factory, where Dr. Shuttleworth took the utmost pains to show us the process of sugar-making and to explain the different stages. We watched, with great interest, the transforming of the unsightly beet into the beautifully white crystals of sugar, packed, ready for transportation, into barrels, or into bags sewed up by experts with the needle. We were told by Dr. Shuttleworth that about 5,000 acres of land are under contract for the production of beets, and about 2,000 farmers are engaged in raising the beets necessary to satisfy the demands of the factory. As many as 600 tons are brought in in one day, and 400 barrels of sugar turned out.

From there we went to the button factory, where we saw the ivory nuts from South America, clam shells and shells from India, made into the useful button. We marked here the great interest which the employees took in their work, and the readiness with which each explained his part of the process.

By this time the sun had reached the meridian, and we were quite willing to rest.

After having dinner, we proceeded to the rubber factory, where we observed the process of converting the raw rubber into boots and goloshes and the dexterity with which the different parts

of the work was carried on. We were informed that the third day after receiving the raw rubber the finished product is ready for the market.

The next place of interest was the shirt factory. Here were evidences of the thoughtful care of the employer, Mr. Williams, for the welfare of the employees. "To advance" seems to be the watchword of all. The employees have a library, reading-room, bowling green and tennis court for recreation outside of business hours, also a lunch room, and are about to begin the study of Domestic Science and Art. The work done in the factory is of a very high order.

Just before leaving, a very appetizing lunch was served in the lunch room. Professor Harcourt, in a few well-chosen words, expressed our appreciation of Mr. Williams' efforts to make our visit pleasant, to which Mr. Williams made a suitable reply; after which we took leave, arriving home at 6 o'clock, the day a pleasant memory.

The meetings of the Y. W. C. A. of Macdonald Hall still continue to be interesting as usual. On Sunday evening, Nov. 4th, Mr. Baker, of the O. A. C., gave a very interesting talk on missions and our duty to missions. Special prayers were asked for special missions. At the meeting held on Sunday, Nov. 11th, it was decided to observe the week of prayer as observed by the Y. W. C. A. Associations throughout the world. These meetings were held in the drawing-room, immediately after dinner, and were largely attended, showing their interest in the work being carried on in other countries.

On Nov. 2nd, 1906, the Literary Society was held in the Macdonald gymnasium. The minutes of the previous meeting were read and approved, and the following programme rendered: A paper on "Home Events," by Miss Lewis; an instrumental solo, by Miss Luriff. Professor Reynolds then gave a very instructive and interesting address on Browning. Browning is an author whose works, with the exception of his minor ones, are not read by the majority of the people because they are too deep for the average intelligence. Professor Reynolds, by means of reading a few short poems and "My Last Duchess," copies of which were distributed, gave a general idea of Browning's style. Any of us who have been fortunate enough to have studied Browning, feel a deeper appreciation of him, and those of us who have not, have some of the difficulties removed in beginning a study of him. The President, on behalf of the society, thanked Professor Reynolds, and after singing the National Anthem, the meeting was adjourned.

The bi-weekly meeting of the Literary Society was held in Macdonald Hall on Nov. 16th, 1906. After the reading of the minutes, Miss Jessie Ross read a paper on "Current Home Events," and Miss Murdock one on "Current Foreign Events," and Miss Robertson gave a violin solo. Captain Clarke then gave a very interesting address on "The Crimean War." The climax of his address was the vivid description of the charge of the Light Brigade and the siege of Sebastapol. After the critic's report, "God Save the King" was sung, and the meeting formally adjourned.

Miss L. L. Ross and Miss Rath, two members of the class of '05, are at present in Calgary, Alberta, taking up normal work. Mr. J. E. Runions, who took the Nature Study course during the year '05, is also at Calgary teaching in the Collegiate Institute of that place.

Miss Mattie Prennie, of the '06 Home-Maker Class, gave us a short call, on her way from her home in Fergus, to spend the winter in Pittsburg, Pa., with her brother.

Miss Edna Greening, of the same class, brightened the hall up one day when she and a party of friends motored up from Hamilton, and spent a couple of hours greeting old friends.

The girls had a very successful paper chase Nov. 14th. Three hares and about sixteen hounds took part. Four of the hounds followed the entire course, about three miles, coming in a very few minutes behind the hares. All of the girls did some very good running, and are looking for another bright day to have another chase.

Worth While.

It is easy enough to be pleasant
When life flows by like a song,
But the man worth while is the one
who will smile

When everything goes dead wrong,
For the test of the heart is trouble,
And it always comes with the years,
And the smile that is worth the praises
of earth,
Is the smile that shines through the
tears.

It is easy enough to be prudent
When nothing tempts you to stray,
When without or within no voice of
sin
Is luring your soul away;
But it's only a negative virtue,
Until it is tried by fire,
And the life that is worth the honor of
earth,
Is the one that resists desire.

By the cynic, the sad, the fallen,
Who had no strength for the strife,
The world's highway is cumbered to-
day,
They make up the sum of life,
But the virtue that conquers passion,
And the sorrow that hides in a smile,
It is these that are worth the homage
of earth,
For we find them but once in awhile.
—Ella Wheeler Wilcox.



Locals.



THE half-back seized the ball and made a superb rush down the field. The crowd went wild, but, when the cheers of applause had subsided, it was apparent that the ball had not been in play.

"Oh, dear, what does he have to bring the ball back for?" asked the Macdonald girl of her escort.

"I'm sure I don't know," replied the Freshman, "unless he's got an encore."

Teacher in French—Mr. Winslow, translate this sentence, "Nous donnons les autres aux animaux."

Winslow—We give the others to our friends.

While masticating some college steak the other day, Slater mentioned the fact that Gladstone used to masticate each bite 292 times. "By this means," he continued, "the food is digested at the table and not in the class-room."

At last the secret is out! We have now discovered how Slater has developed the faculty of "masticating the fabric," or in other words, "chewing the rag." If Slater does not look out he will have "lint on the lung."

Cutler, after being "out for a night with the boys," was judging cheese. He was asked by Professor Dean whether he had "cut" the cheese on any point. He said, "Yes, in flavor. It leaves a bad taste in my mouth."

Professor Dean—How much did you cut it?

Cutler—To 38 points instead of 40.

Professor Dean—Only two points! It can scarcely have been the fault of the cheese then.

Bunting—I wish I had a book of "cinnamons." Could any of you fellows tell me a word with the same meaning as Ignoramus.

Crowe—Yes, "Bunting" is a good one.

Mary had a little lamb,
And when she saw it sicken,
She shipped it to Chicago,
And now it's labeled "chicken."

Sharman (to Farmer, who is whistling)—How much a yard for that whistle, old man?

Farmer—If you would keep quiet, no one would know you were crazy.

Messrs. Angle, Macrae, McEwen and Irwin have lately been the recipients of many distinguished orders. We understand that they have now all joined the band of "The All-Day Suckers."

If the prime movers in this token of respect shown towards these gentlemen will apply to either of them they will hear of something to their benefit (?)

Through "rubbering" too much, Revel had a kink in his neck, which made him look like a giraffe looking round a corner. However, by dint of perseverance and manipulation, he is now able to look his classmates straight in the face.

"How do they heat public buildings in the Old Country, Treherne?"

Treherne—Oh, they heat them with refrigerators.

Extract from minutes of Freshmen Tapping Committee meetings:

An assembly of all representatives of the above committee was convened in one of the Freshman's rooms. As the meeting was very important a large gathering took place. A subject of grave importance, involving the name and reputation of Mr. Millen, was considered. After undue deliberation on the part of the committee men, Mr. Millen was exonerated from all blame in the case. According to constitution, the secretary was requested to send Mr. Millen notice as follows:

"Whereas you wilfully, and with malice aforethought, did try to obstruct the committee in their duty of relieving a member of your class of his hirsute adornment, and whereas, by the said obstruction you did call down upon your head the wrath of the powers that be, therefore, be it known unto you that, after sitting in solemn conclave, and having duly considered all the 'pros' and 'cons' of the case, the aforesaid committee have decided that they will take no further steps in this case, but we wish to hereby warn you that any further misdeameanor will not be so lightly passed over.

"(Signed) Reek, Chairman.

"(Signed) Lelacheur, Secretary."

Diaz (to Crowe)—If you give me another piece of pie I'll go to church this afternoon.

Scott—This is no time to be getting "pious."

Treherne, at athletic meeting—I take much "trouble" in nominating Mr. McEwen.

English Dude's Version of "Everybody Works But Father."

Everybody labors but our paternal progenitor,

And he reclines in a recumbent position
With his feet on the bronze of the radiator,

Extracting nebulous fumes from his pipe of clay.

Mother takes in soiled linen for the purpose of cleansing,

And with this connection I might mention Ophelia Ann,

In fact, everybody labors at our domestic domicile

But our paternal progenitor.

Poor Uncle Ned.

Hang up the violin and its agitator,
Lay down the agricultural implements,
There's no more work for poor Uncle Edward,

He's retired to where all the ancient Ethiopians migrate.

Music and Drama.

Mr. Coke is now studying to take a leading part in "Love's Labor Lost." Judging from his primary trials, we are justified in predicting a glorious future for him.

James is said to be very fond of that lovely song called "Paddle Your Own Canoe."

Packard will shortly produce a new play entitled, "A Stitch in Time Saves Nine," or "How I Repaired the Glove."

A male quartette entitled "We'll Go No More A-Roving," will be rendered by Messrs. Sharman, Leslie, Mackenzie and Sproat.

Ryan never tires of singing "Oh, Tell Me Pretty Maiden, Are There Any More at Home Like You?"

Mr. Wheaton will render that touching song "Tramp! Tramp! Tramp! the Boys Are Marching." He will also give demonstrations at the same time.

It has been said "union is strength." Then let us put the butter in the tea. Why should the strong not help the weak.

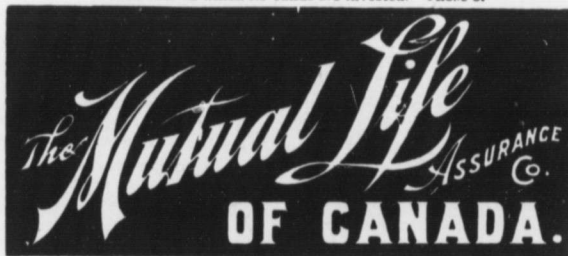
Hodgins says that when he hangs from the horizontal bar by his knees, he feels lost.

Angle says that Macaulay mentioned Hastings' love affairs to excuse him for falling in love. If that is the case, we ought to be able to keep a Macaulay busy excusing Angle.

The Ontario Wind Engine & Pump Company are about to ship to Cairo, Egypt, two 16-foot Airmotor Outfits, complete with Irrigation Pumps. This order follows a large one shipped a few weeks ago. It is interesting to note that Canadians are pushing their wares even to the land of the Pharaoh. This company are also making a good exhibit in New Zealand, which will still tend to spread the virtue of Canadian goods. This company also received lately an order for a 40-foot "Halladay" Windmill (largest size made in wooden wheels) for shipment to Chili, South America, via England.

100 Per Cent. = 100 Per Cent.

The stability of a Company may be gauged by the class of securities in which its funds are invested. Those of



are all gilt-edged, as may be seen from the following list :

LEDGER ASSETS	PER CENTAGE	
Mortgages.....	\$4,265,533 86	48.22
Debentures and First Mortgage		
Bonds.....	3,245,401 89	36.68
Loans on Policies.....	1,017,480 99	11.50
Cash on Hand and in Banks.....	261,960 60	2.96
Real Estate.....	56,281 08	.64
Total Ledger Assets.	\$8,846,658 42	100 p. c.

*This item does not include stocks of any kind.

R. Melvin, **Geo. Wegenast,**
President Manager

W. H. Riddell,
Secretary

Geo. Chapman
General Agent - - McLean's Block
GUELPH

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