

Volume XXV.

Number 7.

O.A.C REVIEW

APRIL



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1913

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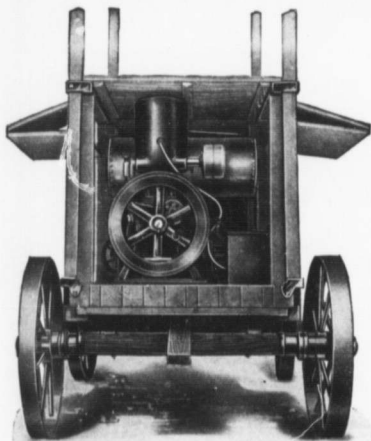
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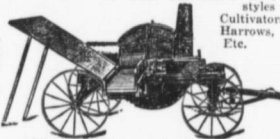
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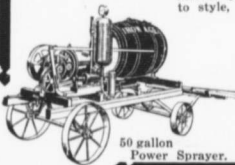


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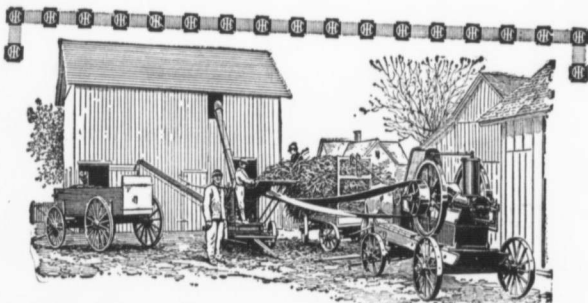
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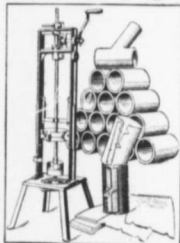


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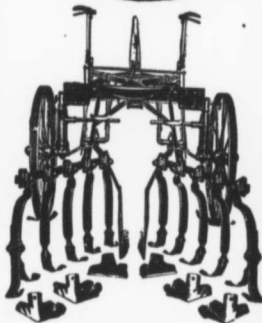
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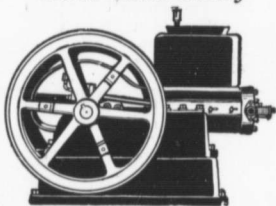
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HON. J. S. DUFF,
Minister of Agriculture, Toronto, Ont.

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Director of Colonization, Toronto, Ont.

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

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THE O. A. C. REVIEW

THE DIGNITY OF A CALLING IS ITS UTILITY

VOL. XXV.

APRIL, 1913.

NO. 7

Eugenics

A comprehensive introduction to a most important branch of Modern Science

IN common with many social and political movements, inventions, and sciences which have had far-reaching effects on the world's history, the science of eugenics originated in comparative obscurity, but has gradually made headway, until the subject is now receiving world-wide recognition. It promises to be so extensive and comprehensive in its influence that leaders of the world's thought of to-day assert that no nation having at heart the welfare of her country and her people can afford to neglect its teachings. Moreover, the true measure of a nation's greatness will ultimately depend upon the degree to which she has carried into practice the fundamental principles and doctrines upon which eugenics is based.

As defined by its founder, the late "Sir Francis Galton, "Eugenics is the science which deals with all the influences that improve the inborn qualities of a race."

In its application eugenics aims at the segregation of those individuals who are physically, mentally and morally depraved, and the adoption of measures to prevent them reproducing their kind and at the same time fostering the propagation of those persons possessing a preponderance of the best qualities found in the human family.

*Before his death Sir Francis endowed the Eugenics Laboratory, London, England, where researches are now being conducted by Professor Pearson and staff of trained workers.

It was only after a long and exhaustive study of heredity that the science of eugenics was formulated. Galton's researches involved a minute statistical enquiry into the history of persons found in family records from the study of which he was led to believe that in general "Like begets like" and "Pedigree counts," for example, tall children are usually born to tall parents, and children are more likely to be tall if grandparents were also tall. And, broadly speaking, the direct heredity influence of both parents on the offspring is one-half; that of the grand parents, one-fourth, and that of the great grand parents, one-eighth, and so on, each earlier generation of ancestors extending only half as much influence as the next one later. This general law is known as "Galton's Law of Ancestral Inheritance," and while it is not by any means mathematically exact, yet it forms the basis of a useful working scheme.

In addition to enquiring into the inheritance of stature in human beings, the work was extended to include mental capacity, temper and various other traits.

It should be borne in mind that Galton's system is based upon a statistical study of the relation between offspring and ancestors when a population is considered as a whole; such a method does not attempt and should not be expected to supply any biological explanation of this relationship.

The theory of heredity as elaborated by Weismann, and known as "Continuity of the Germ Plasm," attacks the problem of heredity from the biological side.

Without attempting a full account of this theory, it may be briefly stated: it assumes that in the animal certain specialized cells are set apart for the purpose of reproduction; these cells are quite different from those forming the general body of the animal, and though dependent on the animal body cells for support and nutrition, they are quite distinct from them in their functions.

The relationship between the reproductive germ cells and the rest of the animal body has been likened by Professor Cossar Ewart to the relation between a crop of potatoes growing on a particular field and the field itself. The crop remains constant as regards its kind or variety, but is greatly influenced by the treatment the field receives in the shape of general cultivation and management. In the same way the germ cells in the animal, though the main characteristics cannot be changed, yet the body in which the cells are contained may be so reduced in vitality by various forms of excess which react indirectly upon the germ plasm that its vigor is impaired and by repeated indulgence in succeeding generations degeneration follows.

On the other hand, by strict obedience to the laws of nature, sound, healthy germ cells may be maintained in a healthy, vigorous condition and transmitted as such from parent to offspring, and so on from generation to generation.

Thus it will be seen that Galton, by his statistical study of heredity, and Weismann, by his researches on

the continuity of the germ plasm, arrive (substantially) at the same fundamental law that in general "Like begets like." Hence there is a sound reason for the well-known phrase, "A chip off the old block."

Concerning the question of heredity and its influence upon the human family, there appears to be a great amount of misunderstanding, and a discussion of the subject usually resolves itself into making a comparison of the relative importance of heredity and environment.

In order to produce a race which shall have the highest physical and mental attainments, the foundation on which these qualities rest and the capacity to develop them must first of all be transmitted from parent to child, and the child by being placed in suitable environment is allowed to develop the faculty of body and mind to the fullest possible extent. No amount of education will produce brains, though a good training enables one to make the best use of those which he has inherited. On the other hand, a man may be endowed with unusual mental abilities and yet owing to improper environment they may never be given an opportunity to develop. Consequently, they remain dormant, and, so far as he is concerned, his superior talents are lost to the world.

If such a man had been taken in youth and given suitable opportunities for the development of his faculties he might ultimately have risen to fill one of the highest positions in the land. Such cases of men of lowly birth having lifted themselves to honored positions are not rare in actual life, and these examples have led sociologists and others into the error of supposing that we are all

born practically equal as regards mental endowments and the differences observable in mature age are merely due to differences in education and environment. A more correct view would be to look upon every one as being the product of interaction between inheritance and environment; both are essentials and therefore should not be compared.

Nurture and nature are very closely related and the eugenist seeks to combine forces with the sociologist for the purpose of uplifting the physical and mental capacity of the human race, thus raising the culture and intelligence of the human family to a higher plane of excellence than has even been attained in the past.

The same fundamental laws of nature lie at the basis of all life; why then should not the same principles adopted in the production of high quality in domestic animals apply to man himself. Is it reasonable to suppose that in rearing live stock man is bound to closely observe the laws of heredity, but in the reproduction of his own kind can violate these laws with impunity?

We may meet persons who, having no reply to the above argument, take up a position of "laissez faire" and say "Why interfere. Why not let well alone?" This is assuming that the present condition of the human race is quite satisfactory. But is this so?

Surely anyone who keeps himself acquainted with the present condition of affairs cannot be blind to the increase in insanity, idiocy, feeble-mindedness and other heredity diseases, and it is only prudery to shut our eyes to the revolting conditions brought about by so-called

social diseases so prevalent in our centres of population.

In the United States it is estimated that one-third of the male adults under thirty years of age are suffering from diseases of this nature on their *seculae*; and of the total blind persons in the States, twenty-five per cent owe their condition to similar causes, while in France seven per cent of the children die annually from these contagious and hereditary diseases.

The effect of such diseases in causing weakened constitutions, sterility and the mental and physical anguish entailed is appalling.

There is overwhelming proof that the disease indicated and other forms of disease on a predisposition to contract these diseases may be traced from ancestor to offspring. As an example, take insanity: There is not a single authentic case on record of a normal child having been born to feeble-minded parents, and when it is remembered that parents so affected, usually have much larger families than normally healthy persons. The proportional increase of those suffering from various forms of insanity follows as a natural consequence.

At the present day, owing to the complexities of society and the various charitable means adopted for the protection of the weak, they are fostered and allowed to reproduce their kind. Hence, it would appear to be an important function of science to show that for the benefit of the human race it is necessary to adopt suitable measures for the gradual elimination of the unfit.*

*Dr. Jordan, of the University of Minnesota, in a recent address on this subject, remarked: "I do not want to rob the hu-

In the ancient civilization of Greece and Rome no extraordinary care was given to the weaklings, and they died off naturally, leaving the strong and vigorous to reproduce the race, which resulted in the production of a vigorous, virile people, equal to any emergency.

This was exemplified in the rapid rise of the Roman Empire to such unwonted power that she ultimately dominated the whole of the known world. But this unparalleled success carried within itself the germs of decline.

The power of Rome was purchased at the price of the lives of her best sons who perished in foreign wars; at home advancing civilization brought additional comforts which enabled the less vigorous and weaklings to survive. These spending their lives in ease and debauchery did not possess sufficient bodily vigor or mental capacity to uphold the Empire built up by their more virile and robust ancestors and the whole fabric of Roman power and prestige perished.

As a contrast to the causes which led to the decline and fall of the Roman Empire consider the main factors which have been responsible for the present position of the British Empire.

Notice the fundamental differences in the contemporary history of the two nations: Rome, in order to make

conquests and maintain her conquered territory, sapped the best life blood of the nation. Britain, on the other hand, was absorbing the best blood and traditions of the races which came to conquer. The Scandinavians, Saxons and Normans did not bring their weaklings and degenerates to fight, but rather the best types of manhood they possessed, picked men, born fighters and born leaders. These men and their progeny were gradually absorbed and assimilated and ultimately the various races fused into one homogeneous nation, having common sympathies and common aims—thus was the foundation of the British Empire laid on a substantial basis of healthy virile germ plasm, which indeed is the only basis on which lasting power can rest.

The influences which were effective in bringing about the decay of the Roman Empire furnish a fitting proof that a nation's wealth does not consist in the abundance of her natural resources or in the extent of her territorial possessions, but upon the number of her healthy, happy, capable and contented citizens. Such a condition it is obvious must depend upon the abundance and fitness of her potential fathers and mothers.

These considerations are of vital importance to every nation and especially to we Canadians who are engaged in the process of nation-building; let us profit by avoiding the mistakes made in the older countries, and take care that in adopting similar social customs we do not unconsciously contract the same social vice which will inevitably lead to physical and mental degeneration with the consequent loss of prestige and power and relegation to an in-

man heart of the commendable virtues of pity, sympathy and charity. I do not want to see done anything less than we are now doing for the comfort and happiness of our defectives of various types. But for the sake of the future race, for the sake of the light entrusted to our civilization, out of respect and honor to our intelligence and good sense, let us have the courage to recognize our duty and forbid parenthood to the proved and universally admitted unfit."

ferior position amongst the nations of the world.

Much is heard at the present day concerning the conservation of our natural resources, such as forests, minerals, water-power, etc., and the development of agriculture in all its phases. This care and foresight is of immense importance to the future welfare of the country, yet it sinks into insignificance when compared with the question of rearing and developing a vigorous, robust and contented race of people having high ideals and lofty aspirations.

It is not to be expected that this much to be desired condition can be obtained quickly or by any great revolutionary changes in statutory laws and social restrictions, but rather by a slow and gradual growth; and it would appear that of all agencies which the eugenist can call to his aid, the first and foremost and probably the most potent is a propaganda of education in eugenics.

A great amount of the disease and misery brought about by social vices is due largely to ignorance. We refuse to believe that men as a rule are wilfully vicious and have sufficient confidence in the chivalry and good sense of the average man to believe that sound instructions in the principles of heredity, sex hygiene and kindred subjects would have the effects of developing the higher side of his nature and would enable him to see life in its true perspective and give him an incentive to aspire to its noblest and loftiest ideals.

Space will not allow of an adequate treatment of the work in practical eugenics which might be profitably considered; such as the establishment of bureaus, staffed by trained workers, for the purpose of record-

ing family history and family traits until ultimately the record of each person's ancestry would be as readily available as a birth certificate.

In this way many families having records noted for physical and mental fitness would be recognized and looked up to and held in high esteem by the community in general; marriageable members of such families would be at a premium, and ultimately pride of family and ancestry would come to have a meaning of real value.

Information would also be obtained concerning those physically or mentally degenerate, e.g.: insane, epileptic, criminal, and by segregation of these and taking precautions to prevent them reproducing their kind, they would gradually become weeded out, leaving the healthy and fit for the propagation of the race. This would result in a general uplift of the physical and mental condition of the whole nation.

In this connection attention should be directed to the framing of immigration laws, with a view to prevent the landing of undesirable aliens.

Compare the stringent measures taken at our ports to prevent the introduction of foreign diseases of crops and live stock with the lax manners in which diseased and morally vicious aliens are allowed to land and become centres of contamination to Canadian citizens. It is the same old story: we are far more solicitous and careful concerning the well-being of our crops and stock than we are about the people who are to form the foundation of our future generation.

In the United States many of the leading scientists and medical men have taken up the eugenics movement with characteristic enthusiasm

and energy. A permanent office has been established with a staff of trained workers who are engaged in collecting and tabulating records of family traits.

Several of the leading universities have formed eugenic clubs so that facilities may be obtained for study and discussion, so that those desirous of information may be enabled to become more conversant with the subject in its various phases and practical applications.

Up to the present time, we in Canada have not been greatly influenced by the spread of eugenics, but there

seems to be no valid reason why at least an educational propaganda should not be commenced.

We are a young nation with a very meagre history, but are engaged in making history, and each individual member of the community has a voice in saying what that history shall be. Let us lay the foundations aright and there will be no need to worry about the superstructure; in so far as we do this then can we rest assured that not only our children, but our children's children will rise up and call us blessed.

—W. M. Southworth.

Pear Blight Investigation

AT present the area devoted to pear growing in this province is very small. Burlington is perhaps the largest centre, and orchards are scattered through the Niagara district, around Simcoe and along Lake Ontario, but nowhere does the industry reach large proportions. The reason for this is not hard to find. Going into almost any pear orchard in the province traces will be found of bacterial blight which may be and usually are of a very serious nature.

This disease, as its name signifies, is of bacterial origin, and is very widespread, being found with equal severity on the Atlantic and Pacific coasts. The bacilli live and feed in the combium layer of the host, which may be either an apple or a pear tree. While in the apple we find that the injury is chiefly confined to the twigs, in pears the most serious damage is done to the main limbs and trunk where cankers are formed which generally spread until the tree dies as a result of the injury.

These body cankers are generally more or less oblong, and are separated from the healthy tissue by a distinct crack. The surface will be slightly sunken below the level of the surrounding tissue, and of a darker color. The disease will sometimes live in the succulent tissue of the bark without penetrating to the combium, but in most cases it will be noted that the disease will spread until the combium of even the largest branches will be affected.

On the twigs the disease will be identified by the shrinking of the bark which becomes reddish and then black, and by the blackening of the leaves and blossoms which remain on the tree. The name of fire blight which is often applied to the disease is well understood when an orchard which has been blighted badly is seen.

The disease is spread by means of small insects, such as bees, aphids and jassids, and by mechanical means, as pruning knives, accidental injuries by whiffletrees, etc.

Before any effect can be made to estimate the chances of controlling blight, and before any means of action can be taken, a study of the life history of the disease is necessary.

In the spring when the tree is rousing itself for another season's activities, a milky white substance will be found appearing as drops over the surface of many of the old cankers, especially those in the trunk and lower limbs of the tree. On microscopic examination this exudation will be found to be full of the disease bacilli. This exudation

place very rapidly or several years may elapse with the disease steadily working before any very serious damage is done.

It will thus be seen that the real sources of each season's infection are the cankers of the last year, and also that any remedial measures which are taken should aim at the removal as far as possible of these hold-over cankers.

In California the united efforts of the growers of a large region has proved very successful. Thoroughness and patience were the watch-



A Heavy Crop of Bartletts.

adheres to the mouth parts and legs of insects and is thus spread from tree to tree and from orchard to orchard. The bees are largely responsible for blossom infection, as the nectaries of the flowers are very tender and provide a favorable medium for the multiplication of the bacilli. From the blossoms, which the disease causes to turn black, the bacilli spreads down the crevice to the tender shoots and thus, in favorable seasons, down the twigs to the larger limbs. This may take

words, for permanent control is not the work of a single season.

In the early spring all the cankers which can be recognized should be removed, with the saw, knife or chisel, which implements should be disinfected continually with corrosive sublimate (1-1000) or formalin. This is to prevent the germs from being carried from place to place on the implements and thus causing infections where cuts were made. Then as the season advances regular and thorough examinations should be

made of the orchard, and as blight appears, the diseased twigs should be removed as well as the canker from which the infection started.

To many growers this seems a very radical treatment and one which it would be almost impossible to conquer, but success can only be obtained by the most radical of methods and the most careful work.

This, then, is the disease which has swept through orchard after orchard and caused very pessimistic views to be held by many fruit growers as to the commercial value of pears when this big risk of blight is considered.

Pears are an easy crop to grow, and there are few serious pests, except the slugs and psyllas, both of which can be controlled by proper spraying at the right time. An arsenical spray will soon give the slugs their last meal, and lime sulphur applied as the nymphs of the psylla are emerging from the eggs and before they become covered with honey dew will prove satisfactory.

That pears would be profitable if blight could be controlled, is the opinion of most orchardists, and it remains for careful men to grow young orchards, keeping a strict watch over them and removing all signs of blight in its early stages, before any serious damage has been done.

The market for pears is good if only proper care is taken in packing and grading. The box has been tried and where the fruit was strictly graded, has met with good success, but the packing of inferior fruit in boxes is anything but satisfactory.

The prevalent opinion has been

that a heavy soil should be chosen in locating a pear orchard. Fruit-growers have seen orchards planted on lighter soils blight very much more rapidly than those on heavy soils, and have supposed the slow growth was necessary to in any way decrease the rapid spread of the disease. There is no doubt that larger crops and better fruit can be produced on a good loam, and if efforts are made to control blight, there is no reason for not using the lighter soil.

The question of fertilizing has also hinged on blight. That heavily fertilized orchards blighted rapidly has been commonly observed and sod culture was tried to check the growth of the trees and so check, for a short time at least, blight. However the trouble has been that under sod a poor crop of inferior fruit is harvested and in many cases the orchard becomes unprofitable. With the control of blight, the orchard can be given better cultivation and fertilization, and as a result better returns will be received.

Pruning, which has been altogether too much neglected with pears, on account of its stimulating action, has given most satisfactory results where it has been done, especially if the trees are kept in hand from the time they were planted.

Blight can be almost if not quite controlled, and the man who plants with a full knowledge of the risk his trees run, and with the necessary information as to the means of controlling blight, should receive good returns on his investment.

Alan G. Bland, '13.

Clover Seed Growing vs. Pasturing the Second Crop

BY JOHN FIXTER

Of the Commission of Conservation.

MUCH money is lost each year on many farms by not taking advantage of harvesting the clover seed. It is thought that the after-grass is worth more for feeding purposes than to keep the cattle off and harvest the seed. The following will prove conclusively that it is more profitable in many instances to harvest the seed than to pasture or cut the second crop for hay only.

Twenty-four acres of mixed clover and grasses cut for hay about June 20th gave a yield of over three tons of well-cured hay per acre. This same field was allowed to produce a second crop in the same year and gave an average yield of clean clover seed of 116 lbs. per acre, which had a market value at that time of \$29.00 per acre, or a total of \$696.00; besides the seed, there were twenty-three tons of straw and chaff, from which the seed was taken, which, valued at \$6.00 per ton, would bring the total up to \$834.00. The clover straw valued at \$6.00 per ton may seem high, but from analysis, clover straw is found to be worth \$8.00 per ton, when used as a fertilizer.

The value of good pasture is usually placed at \$2.00 per acre, but supposing we allow \$20.00 per acre, we have the value of the twenty-four acres of clover as pasture at \$48.00 at the lower price, and \$480.00 at the higher. According to the lower estimate, clover seed growing gives a profit of \$786, and according to the

higher estimate there would be a profit of \$354.00.

It must be granted that the fertility of the land is not so high after the clover seed is removed as it is when stock is feed on the land. If, however, the clover is harvested for fodder and the manure not returned to the land, there is little difference so far as fertility is concerned. One special feature of these results is that nine acres of the twenty-four would have appeared to the average farmer not to be worth cutting on account of the very light thin crop. This, however, was not the case. The nine acres produced only four and one-quarter tons of clover as a second cutting, which yielded 1,270 lbs. of seed, or 141 lbs. per acre, which goes to show it is not the heavy growth which is to be looked for in the production of big yields of clover seed.

When farmers get to know more about this money-making crop, instead of pasturing it they will cut the thin crop that so many imagine is valueless for seed and much will be added to the revenue of the country.

The Production of Red Clover Seed

At the present time there is a general awakening amongst our farmers in the matter of production of clover seed. Owing to the prevailing high price and the constant growing demands for seed, farmers realize that they are compelled to go into this money-making business. Those

who are engaged in this profitable business openly testify there is as much, if not more, money made growing clover seed and from the other benefits of the crop than most other crops grown on the farm.

It is thought by many that to grow clover seed it requires a special soil and machinery, and that it can be grown in certain districts only. This, however, is not the case, as we find some kinds of clover seed can be grown in almost any part of Canada, and on almost any kind of soil.

Soils.

From personal experience, the soils giving best results are in the following order: clay loam, sandy loam and sandy and peaty soil. Clay loam appears to be the most suitable, giving a brighter and plumper seed, although good seed can be produced on the other soils mentioned.

Clover Hay as a Fodder.

Clover as a fodder for all kinds of live stock cannot be surpassed. It has been the general belief that timothy has had more feeding value than clover, especially when fed to horses. It may be a surprise to many to find that chemical analysis shows conclusively the superiority of clover in feeding value. Clover contains over twice as much digestible protein and considerably more digestible fat and carbo-hydrates than timothy hay; or, to put it in another way, from eighty-six to eighty-eight pounds of clover hay are equal in feeding value to one hundred pounds of timothy hay.

Clover as a Fertilizer.

A vigorous crop of clover at a moderate estimate, as given by Prof. Shutt, contains in its roots:

Nitrogen—100 to 150 lbs. per acre.

Phosphoric acid—30 to 45 lbs. per acre.

Potash—85 to 115 lbs. per acre.

It is evident, therefore, that by the use of clover we can, with a single crop, furnish the soil with as large a quantity of nitrogen as would be supplied by a dressing of ten tons of manure per acre. The greater part of the nitrogen is gathered by the clover from the air, a source not otherwise available, and is therefore a distinct addition to the soil. The amounts of phosphoric acid, potash and lime in the clover have, it is true, been obtained from the soil, but these have largely been drawn from depths beyond the reach of roots of ordinary crops. The decay of the clover roots, moreover, liberates these important fertilizing elements in soluble and available form, so that they can be readily utilized by the crops which follow. As a result of field tests on the fertilizing value of clover, from eleven to fifteen additional bushels of grain, six to eight tons of corn, and fifty to sixty bushels of potatoes have been secured from the turning under of a good clover sod. These figures are a distinct gain over and above the yields secured on adjoining land where no clover sod has been turned under.

Place in Rotation.

Clover does best when it follows a cultivated crop, such as corn, roots or potatoes. By the thorough manuring and preparation of the land for the hoed crop and, in addition, by the thorough cultivation of the crop during the growing season, the soil is pulverized and mixed and loosened up to hold moisture; the weeds are killed, and ideal conditions are formed for a good clover catch the following season.

Should the farmer be so unfortunate as to have insufficient cultivated crops to follow by clover, after-harvest cultivation should be put into practice. Just as soon as the crop is harvested, which clover is to follow, put on the cultivator, or plow very shallow, and keep the cultivator going at short intervals until autumn, each time cultivating a little deeper, for the deeper the cultivation, the deeper will be the feeding ground, and more moisture will be conserved for the clover seeding. In both cases I would advise plowing the land thoroughly and very early in the autumn, so that it will be well firmed for spring seeding.

In spring time allow the soil to get in perfect condition, as much is often lost by getting on the land too early as too late. The land roller will be found the best machine to pack the corn stubble firm and level the soil. Then the disc or smoothing harrow should be used to make a fine surface before sowing, and the second rolling should be done when the grain is four to six inches high.

Drainage.

To be successful in producing good clover seed, the water line should be kept two or three feet below the surface. If tile drainage is necessary and cannot be installed, then there is no excuse for not having open ditches. Clover requires a deep feeding ground; it also requires moisture and a thoroughly pulverized soil. Drainage provides a free, loose soil that will hold more moisture than undrained land. It also warms the soil, allows the air to enter, prevents plants from heaving by frost in spring time, allows plants a longer growing season; and with

drainage a good crop of clover and seed can be produced that will more than pay for the drainage in the one season.

Seeding.

Clovers may be sown with either barley, wheat or oats. Barley is preferred on account of it being an early ripener and less liable to lodge. The growing of clovers will not lessen the yield of grain per acre and will be found a great benefit in smothering many weeds. When seeding with grain, sow: barley, $1\frac{3}{4}$ to two bushels, or, wheat, $1\frac{1}{2}$ to $1\frac{3}{4}$ bushels, or, oats, 2 to $2\frac{1}{2}$ bushels per acre. Along with the grain chosen sow: clover, common red, 8 lbs.; timothy, 6 lbs., and orchard grass, 6 lbs. If the land is heavy, sow Alsike, 2 lbs. extra. Why all this seed? Big crops are what we are after. If, however, the soil is rich in plant food, the total may be cut to four lbs. less. If not intended to pasture the second year, it might be well, in some instances, to omit the orchard grass and sow more clovers and timothy.

Red Clover Seed.

For the first year the heavy seeding of clover takes almost full possession of the land. The clover crop being harvested very early, gives a chance for the second crop to mature its seed. In the case of timothy alsike and orchard grass, the seed is taken from the first crop and, therefore, is not ripe when the clover is harvested.

Time of Harvesting.

This is one of the most particular points in growing seed. The first crop of hay must be cut before July 1st, to give the second crop of the same year time to mature the seed. As to the time for harvesting the

second or seed crop, no special date can be set, as so much depends on the season.

Weeds.

Weeds are a pest in all crops, especially in clover seed. While it is true that many weed seeds may be removed with the fanning mill, the best and cheapest plan is to go over the field and hand pick them out before cutting. One or two small boys will very soon go over the field and pick out the weeds, which should be destroyed afterwards.

Time to Cut for Seed.

As a rule, it is time to cut when the majority of the heads are well browned. It is a good plan to go over the field and rub a head here and there, and if the seed will shell in the palm of the hand, I would advise cutting. If the seed is soft and not properly filled, let it stand, even at the loss of a few ripe heads. Many mistakes are made on this particular point—cutting before the seed is ripe.

Cutting or Harvesting.

This was thought to be a tedious job, but after experimenting with the mower with a table on, with the self-rake reaper, and with the self-binder, I have come to the conclusion that the binder is the best machine to use. In cutting with the binder, remove the cord and slacken the spring, so that the binder will trip continuously. There are usually two boards that hold the sheaf; these should also be slackened so as to allow the clover a free course to the ground. The clover in dropping to the ground will not shell and will be light, so that the wind and sun can easily dry it out. The windrow will

be out of the way of the horses and machine and can easily be gathered with the barley fork.

As to the length of time to allow the clover to remain in the windrow all depends on the weather, and the condition in which it is cut. It sometimes happens it takes two or three weeks. It is not wise, however, to allow the fodder to get black and ruined for feed. Just as soon as the forage will keep in the mow it should be gathered in.

Threshing appears to be the problem to solve. Farmers who have threshers of any kind can overcome this difficulty to a certain extent. I have threshed clover seed with the two-horse tread power, with the large steam grain thresher, and also with the clover huller. With the grain thresher it takes considerable time, as the short material has to be put through twice to get the seed all out of the hull. There are also some slight adjustments to be made. If it is desired to save the fodder for feeding, it is best to run the clover through the machine in the same way as the grain is put through. The first run through will separate all the heads from the stalks without breaking up the fodder too much, every particle of the heads and chaff to be saved and run through the machine the second time, and sometimes the third time. Before running the short material through, it is necessary to fasten very firmly a plate of sheet iron directly behind the cylinder, closing up all of the back, except about nine inches on the left end of the cylinder, and also to close up all except one foot of the right end of the front of the cylinder. It will also be necessary to close up the small holes in the concaves. The ob-

ject is to make all of the material pass directly from one end of the cylinder to the other, so as to have the seed hulled perfectly in passing through. If the farmer has to hire his threshing done, I would advise putting in the boards and threshing the seed out with the one operation. With the clover huller, which has the regular tooth cylinder and a large drum covered with rasps

and two fanning mills, the threshing is complete, and the seed is almost clean enough for sowing.

If there are enough enterprising farmers in one district to grow two hundred acres of clover seed, it would pay them to join and purchase a huller, for by so doing they would save the price of it, through the extra quantity of seed they would get, in two years.

A Newspaper Story

By O. HENRY

AT 8 a.m. it lay on Guiseppi's news-stand, still damp from the presses. Guiseppi, with the cunning of his ilk, philandered on the opposite corner, no doubt on the theory related to the hypothesis of the watched pot.

This particular newspaper was, according to its custom and design, an educator, a guide, a monitor, a champion and a household counsellor and vade vecum.

From its many excellencies may be selected three editorials. One was in simple and chaste but illuminating language directed to parents and teachers, deprecating corporal punishment for children.

Another was an accusive and significant warning addressed to the notorious labor leader who was on the point of instigating his clients to a troublesome strike.

The third was an elegant demand that the police force be sustained and aided in everything that tended to increase its efficiency as public guardians and servants.

Besides these more important chidings and requisitions upon the store of good citizenship was a wise

prescription or form of procedure laid out by the editor of the heart-to-heart column in the specific case of a young man who had complained of the obduracy of his lady love, teaching him how he might win her.

Again there was on the beauty page a complete answer to a young lady inquirer who desired admonition towards the securing of bright eyes, rosy cheeks and a beautiful countenance.

One other article requiring special cognizance was a brief "personal," running thus: Dear Jack—Forgive me; you were right. Meet me at the corner of Madison and —th at 8:30 this morning. We leave at noon.— Penitent.

At eight o'clock a young man with a haggard look and a feverish gleam of unrest in his eye dropped a penny and picked up the top newspaper as he passed Guiseppi's stand. A sleepless night had left him a late riser. There was an office to be reached by nine, and a shave and a hasty cup of coffee to be crowded into the interval.

He visited his barber shop and then hurried on his way. He pocket-

ed his paper, meditating a belated persual of it at the luncheon hour. At the next corner it fell from his pocket, carrying with it his new pair of gloves. Three blocks he walked, missed the gloves and turned back fuming.

Just at the half hour he reached the corner where lay the gloves and paper. But he strangely ignored that which he had come to seek. He was holding two little hands as tightly as ever he could and looking into two penitent brown eyes, while joy rioted in his heart.

"Dear Jack," she said, "I knew you would be here on time."

"I wonder what she means by that," he was saying to himself; "but it's all right; it's all right."

A big brown wind puffed out of the west, picked up the paper from the sidewalk, opened it out and sent it flying and whirling down a side-street. Up that street was driving a skittish bay to a spider-wheel buggy the young man who had written to the heart-to-heart editor for a recipe that he might win her for whom he sighed.

The wind, with a prankish flurry, flapped the flying newspaper against the face of the skittish bay. There was a lengthened streak of bay mingled with the red of running gear that stretched itself out for four blocks. Then a water hydrant played its part in the cosmogony; the buggy became match-wood as fore-ordained, and the driver rested very quietly where he had been flung on the asphalt in front of a certain brownstone mansion.

They came out and had him inside very promptly. And there was one who made herself a pillow for his head, and cared for no curious eyes,

bending over and saying, "Oh, it was you; it was you all the time, Bobby. Couldn't you see it? And if you die, why, so must I, and—"

But in all this wind we must hurry to keep in touch with our paper.

Policeman O'Brien arrested it as a character dangerous to traffic. Straightening its dishevelled leaves with his big, slow fingers, he stood a few feet from the family entrance of the Shandon Bells Cafe. One headline he spelled out ponderously: "The Papers to the Front in a Move to Help the Police."

But, whish, the voice of Danny, the head bartender, through the crack of the door: "Here's a nip for ye, Mike, ould man."

Behind the widespread, amicable columns of the press, Policeman O'Brien received swiftly his nip of the real stuff. He moves away, stalwart, refreshed, fortified, to his duties. Might not the editor man view with pride the early, the spiritual, the literal fruit that had blessed his labors.

Policeman O'Brien folded the paper and poked it playfully under the arm of a small boy that was passing. That boy was named Johnny, and he took the paper home with him. His sister was named Gladys, and she had written to the beauty editor of the paper, asking for the practicable touchstone of beauty. That was weeks ago, and she had ceased to look for an answer. Gladys was a pale girl, with dull eyes and a discontented expression. She was dressing to go up the avenue to get some braid. Beneath her skirt she pinned two leaves of the paper Johnny had brought. When she walked the rustling sound was an exact imitation of the real thing.

On the street she met the Brown girl from the flat below and stopped to talk. The brown girl turned green. Only silk at \$5 a yard could make the sound that she heard when Gladys moved. The Brown girl, consumed by jealousy, said something spiteful and went her way, with pinched lips.

Gladys proceeded towards the avenue. Her eyes now sparkled like jagerfontains. A rosy bloom visited her cheeks; a triumphant, subtle, vivifying smile transfigured her face. She was beautiful. Could the beauty editor have seen her then. There was something in her answer in the paper, I believe, about cultivating kind feelings towards others in order to make plain features attractive.

The labor leader, against whom the paper's solemn and weighty editorial injunction was laid was the father of Gladys and Johnny. He picked up the remains of the journal from which Gladys had ravished a cosmetic of silken sound. The editorial did not come under his eye, but instead it was greeted by one of those ingenious and specious puzzle problems that enthrall alike the simpleton and the sage.

The labor leader tore off half the

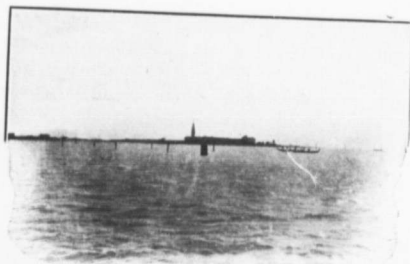
page, provided himself with a table, pencil and paper, and glued himself to the puzzle.

Three hours later, after waiting vainly for him at an appointed place, other more conservative leaders declared and ruled in favor of arbitration, and the strike, with its attendant danger, was averted. Subsequent additions of the paper referred, in colored inks, to the clarion note of its successful denunciation of the labor leader's intended designs.

The remaining leaves of the active journal also went loyally to the providing of its potency.

When Johnny returned from school, he sought a secluded spot and removed the missing columns from the inside of his clothing, where they had been artfully distributed so as to successfully defend such areas as are generally attacked during scholastic castigations. Johnny attended a private school and had had trouble with his teacher. As has been said, there was an excellent editorial against corporal punishment in that morning's issue, and no doubt it had its effect.

After this, can any one doubt the power of the press?



The Hog Industry

E. C. FOX, OF THE WILLIAM DAVIES CO.

THERE have been so many supposed bones of contention between hog raisers and packers in recent years that one naturally hesitates to write on the above subject, but a dispassionate but critical review of the parts played by the various component activities of the hog industry may perhaps serve a useful purpose to those interested.

Failure in all walks of human activities, industrial, financial of political, more often results from lack of proper co-ordination and co-operation of all the various activities necessary to make the enterprise successful than from any other cause. There is such an interdependence of parts that each part must not only perform its specific duties efficiently and as cheaply as possible compatible with efficiency, but must in broader issues dovetail in with every other part of the whole organization, treating differences as secondary only to the welfare of the general industry.

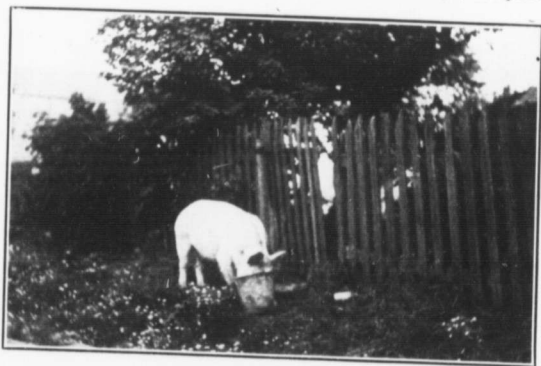
Broadly speaking, there are three important components in the hog industry—the breeder, the raiser and the packer. Each has many important problems to solve distinctive to his group, and each has important problems common to the three groups, but, unfortunately, the lack of steady co-operation jointly between the three groups has prevented a discussion of these questions, resulting in great measure in Canada's taking an unimportant position in the great bacon market of the world—Great Britain. In such a short article, only some of the outstanding features of each group can be touched upon.

The Breeder.

The professional breeder of hogs in this province has sustained well the standards set in the active days of the late Hon. John Dryden and Mr. F. W. Hodson. The increase in the number of pedigreed hogs is highly creditable, considering the decrease in the quantity of hogs in the province in the last few years. The broad basis of original selection of stock for breeding was its ultimate value for bacon purposes, particularly as suitable for the English trade. In the main, the original selections was wise, and standards then set have been closely adhered to. The hog marketed in Ontario today—and again one can only speak broadly—is a very good type of bacon hog. Danger lurks right here, for just as soon as effort for further improvement ceases, retrogression sets in. Improvement can still be made along the lines of selecting for final adaptability to trade requirements. Earnest and real effort on the part of the breeder and raiser, with co-operation from the packer, to intelligently select and breed hogs producing in bacon a minimum weight of the undesirable or cheap, and as a maximum weight of the desirable or more expensive cuts, and maintaining as a whole a high meat yield, would result in great commercial advantage to the whole industry, particularly to breeder and farmer. Breeders play a most important part in this great industry, for entrusted to them is the responsibility of maintaining and improving standards of selection and breed. That the im-

portance of this is not magnified is indicated by the fact that in Denmark, which nation, for its size and population, is the leading hog country in the world, the Government is virtually the breeder, and under its specific guidance, authority, and with its financial support, high standards of selection are maintained, resulting in wonderful stimulation of the industry, with consequent benefit to all identified with it. Our Canadian Commission, which visited Denmark a few years ago, failed to grasp the importance of this feature, its visit

dition, methods of agricultural production have not adjusted themselves to the new conditions to any very appreciable extent. While this is more or less of a general statement, we must confine ourselves to the hog situation. There has been no real study of hog raising as a business. Farmers have spent much time in abusing packers which would have been spent more profitably to themselves by staying in hog raising year in and year out, taking the bad along with the good, instead of alternating in and out of hogs, frequently miss-



HOG INDUSTRY.

producing very little of real value to the hog raising industry.

The Raiser, or Farmer.

The conditions under which hogs are grown today as against ten years ago are much more difficult. The rapid developments of our cities and of the West has taken from rural Ontario much of its best and youngest manhood. This depletion, while serious, presents at least to those who are left, added opportunities for progress and material advancement. The disappointment is that, in spite of this revolutionary change of con-

ing the market when good and only having plenty of hogs when market conditions the world over were bad. Here again we can take a leaf from the book of Denmark. Today, amid world-wide scarcity of hogs, farmers in Denmark are marketing large numbers weekly at great profit to themselves. The farmer who stays in hog raising as a business, keeping his pens reasonably full all the time, will make more money and be better satisfied than the farmer who tries to hit the market right.

There is a great opportunity for

improvement in the condition under which hogs are raised. Tremendous loss is sustained by farmers due to unsanitary and uncomfortable housing of their stock. This is indicated by the high percentage of disease among hogs, the imperfect development of young pigs, weak litters and unprolific brood sows. The packer has some idea of this loss, for he has unjustly to stand the loss due to disease on all hogs slaughtered in his packing house. It amounts up in the hundreds of thousands annually throughout the country. This loss, and as much more, which the farmer now loses himself, can be practically stopped when it is realized how much stronger and more prolific stock is when living under sanitary and comfortable conditions.

The Packer.

The packer makes no virtue of having kept his business up to date in methods, equipment and the use of by-products. He did it for selfish purposes, as competition compelled him. Nobody can force people to eat bacon if they don't like it; therefore, a prime duty of the packer must be to carefully cure his meat to suit the public's palate. The lack of scientific care in handling and curing meats not only hurts the packer who is guilty of it, but adversely affects the whole hog industry, for it is to the best interests of the breeder, raiser and packer to have bacon products as popular as possible. Some packers, not all of them, have not furthered the cause of Canadian bacon on the English market because they have not stayed consistently in the market, taking the bad along with the good, and have failed to give our bacon the reputation it should have as far as cure and quality are con-

cerned. This is not good. Apart from this, however, the packer, in spite of all attacks upon him, has acted well in his part of the hog industry, and has rendered meat products cheaper than they otherwise would have been had there been no packing industry on a large and economic basis. Of all the factors making up the industry, he has shown it more confidence, as indicated by the heavy fixed investments in packing houses, which, built to suit their purposes, cannot be turned into manufactories for ordinary imperishable commodities.

The danger of this province today is in the continued decrease of agricultural productions, especially live stock. Many, no doubt, think this an advantage, because they secure a higher price for their stock. For twenty years past the Ontario farmer has received a higher average price for hogs than has the American farmer, and by care and attention to selection, breed and feed, he should continue to do so. For the past fifteen months he has received the highest price paid in the world for hogs. This latter is not due to superior quality, but to scarcity. Should this scarcity become permanent, this premium he now makes over world-wide hogs would cease, as the packing industry, like any other, must finally shrink or shrivel to the size of its normal supply. There would then vanish one of the staple agricultural industries of the province, which has been worth millions to Ontario farmers. A vital and immediate danger to the hog industry is the decreased supply of hogs in the country, which, if not very soon increased, will make Canadian bacon an unimportant factor on competitive markets.

The Rothschild Estate

DURING our stay in England this summer we had the opportunity of visiting some of the best farms in the country, especially those where world-famed stock is being produced, and I would like here to give an outline of one of the most important, namely, Lord Rothschild's estate at Tring. This one is especially interesting, not only on account of its magnitude, but to the high state of

ly as the association has just equipped a very fine inn for the convenience of travellers.

The land that is farmed personally by the owner amounts to about fifteen hundred acres, and each department must show a profit or it is not continued, and can therefore be called a hobby on a sound business basis. We found in the course of our visit eight departments as follows: two dairy shorthorn farms, a Jersey



The Dairy at Tring.

organization in its various departments.

This estate is about 30 miles from London and covers some tens of thousands of acres of one of the prettiest parts of the country. The headquarters is Tring, a town of about 1,500 people, most of whom are in the direct employ of Lord Rothschild. It is away from the railroad about three or four miles, but being on the main road from London to Birmingham it is quite lively on account of the motor traffic, especial-

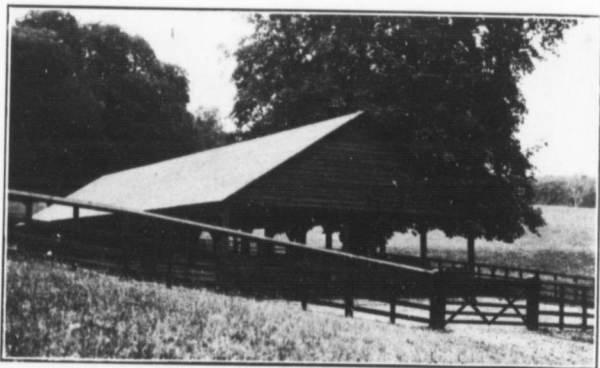
farm, shire stud, sheep, turkey and poultry farms, a fattening plant. Each of these is carried on as a separate business, but all are under the head of one manager. We did not have time to go over them all, although we rushed our utmost the whole day.

We arrived at the nearest station about 9:30 in the morning and found a carriage awaiting to take us to the first shorthorn farm, where the farm's bailiff was waiting to take us around. At this farm all the show

stock and bulls were kept, the bull calves being brought from the other farm as soon as they were born. The cattle to be exhibited also came here, as the man in charge managed the cattle from both farms when they went to the shows. This arrangement surmounts a very difficult obstacle in the paths of many stockmen in England, that is, most herds are successful through the skill of the herdsman and he would be away at the shows during the summer months when he is really much more needed at home, especially when the foreign

stock except the very foundation, and then they will start to build up again for another about the same number of years hence.

There were about 150 cows in the pasture, all bearing high records; 10,000 lbs. during a period of lactation is considered very good for this breed (Dairy Shorthorns), and there were several there that had reached that figure. We also saw some good calves in the stable, one nice little lot of about a dozen under two months old, with an average worth of about \$500 each.



An Open Milking Shed in Tring Park.

buyers are travelling through the country. We found the stable fairly full as the time was between the two important shows, the Royal Counties and the Royal Society's, and the cattle were receiving the finishing touches for the latter. They were also carrying a lot of stock just then in preparation for the sale they intended holding towards the end of the year. The last sale was about nine years ago and since then they have been building up for this one, and now they will sell off nearly all their

From there we drove into Tring for lunch, passing by a small tract of land that had been divided up into small holdings. Lord Rothschild was a strong advocate of this movement when it was revived about six years ago and these allotments were made about that time. They average from one to five acres and as seen from the road bore an appearance of prosperity, but in conversation with our guide he did not think they were wholly successful on account of the lack of capital of the holders. In gen-

eral they were men who had been out of work and had practically no money and although taking this up had been a relief, it had not brought the results that were expected.

After lunch we looked through the Jersey herd. This is close to the residence and is very much of a show place and the one place where dividends are not looked for, but the fancy prices the breeding stock have fetched have made very profitable returns. For anyone who is interested in seeing how cleanly and luxuriously cattle can be kept, this would certainly be educational. The very buildings themselves would make the average individual jealous with their ivy-covered red brick and brick paved, scrupulously clean court yard. The interior is finished with a dark stained wood and the various partitions are of fancy iron work and brass. Each cow's name is duly recorded in gold lettering on a black tablet that hangs above her head, and when we went in the manicurists were busy with file and sand paper polishing hoofs and horns. In a private apartment we were entertained by the animal who had beaten all records in the country for her breed by giving 65 pounds of milk in a day.

The sharp contrast between these beautiful, sleek, well-groomed creatures and the robust, substantial beasts we had just left at the previous farm was most marked, and illustrated the high development of milking breeds to suit different requirements. The fineness of quality is quite an important feature in connection with the Tring herd, and it is a characteristic that they are unable to stamp definitely into it to last any time, and it is only kept up by constantly using imported bulls. The Channel Islands only can produce

such animals, and after they are brought over to England and bred for two or three generations their progeny become much coarser in bone and general appearance. The Jerseys from this estate are possibly the best known of all the stock they produce, and many are exported every year to all parts, particularly North America.

We also visited the dairy which is situated here and receives the output of all three milk producing farms. The interior is finished in glazed tile, which gives a very clean, cool effect. There is one long skimming room with its rows of broad, shallow pans—a reminder of pre-separator days—and although some cream is still obtained in this way the bulk is separated by the centrifugal machine.

From there we went on to the summer quarters of No. 2 Dairy Short-horn farm. During the summer months the cows are allowed to pasture in the park which covers some hundreds of acres, and an open milking shed has been built in a sheltered place where the milking is done. The cows range here during the week, but are driven home to the farm steading on Saturday night, so that less work has to be done on Sundays, and they are brought back again on Mondays.

Then we had to drive two or three miles to the sheep. They were not at the buildings, but scattered over all parts of the farm, and we came across a flock of about one hundred and fifty Hampshires on the clover. These were principally ram lambs for the autumn sale, but we saw half a dozen marked off, that had been sold the day previous, to go to South America.

Time running short, we had to hurry, and were unable to visit the shire shed, turkey or poultry farms, but on our way back we called in at


the fattening plant and saw about 2,000 birds undergoing treatment. Fattening is carried on the year round, the birds have two weeks' trough feeding and one week cramming and are then dressed and sent to London to supply the high class trade.

From there we had to rush off to


the station to catch our train, but we could have easily and profitably spent another day here, as this is perhaps the largest and best managed large scale farm in the British Isles, and anyone interested in this type of agriculture would do well to pay Tring a visit.

C. A. Tregillus, '13.

Lies



See the maiden with the eyes,—
 (Naughty eyes!)
 How they twinkle, twinkle, twinkle,
 Like the little stars above;
 And each whispering lover sighs,
 As with honeyed words he tries
 To convince her of his love,
 See her pretty feigned surprise,
 When he starts to rhapsodize,
 While imagination wafts him to
 a dreamland in the skies,
 And he lies, lies, lies, lies,
 Lies, lies, lies,
 'Bout the beauty and the glamour of
 her eyes.



Oh, the wonder of her eyes!
 (Both her eyes!)
 How they keep him in suspense
 With their coy sweet innocence,
 Till his prayers become intense,
 For his prize.
 How she tries, tries, tries,
 To demurely put him wise;
 And tho' she's half confessing how
 she loves to keep him guessing
 With the light that lies, lies,
 lies, lies, lies,
 In the beauty and the glamour of her
 eyes.

—St. John's College Magazine.

Microbiology In the Home

DAN. H. JONES, B.S.A.

MICROBIOLOGY is the science which deals with living organisms that are too small to be seen without the aid of a highly magnifying microscope. Comparatively few people have the privilege of looking through such a microscope, and hence it is difficult for them to realize that around them on every hand, in the soil, in water, in road dust, in the atmosphere, on man, animals, insects, fruits and vegetables, and in fact on everything that is at all exposed, many varieties of micro-organisms are present. Most varieties are very beneficial to life in general. Without the presence of certain varieties in the soil, vegetation would not normally develop, and, as a consequence, animals and man could not exist. On the other hand, some varieties are very injurious, producing the very worst diseases with which we have to contend; some in plants, others in animals, and others in man.

Only a few years ago knowledge concerning these organisms was not extensive and was confined to a comparatively small number of individuals who were sufficiently interested in some of these minute forms of life to study their nature, life history and the effects of their development on their surroundings. During the last twenty years, however, knowledge concerning them has increased by leaps and bounds, owing to the ardent labors of an ever-increasing band of specialists, so that now it is becoming generally known that they play a most important role in the economics of life. The more general this knowledge be-

comes, the better it will be for humanity at large, as well as for individuals in particular.

Medical men know that the worst diseases with which they have to contend, such as tuberculosis, typhoid fever, diphtheria, cholera, and others are caused by certain varieties of these micro-organisms getting into the system and there multiplying and developing their poisons, thus giving rise to the condition which is known as the disease.

A few years ago, ninety per cent. of serious surgical operations were attended by excruciating agony and death; but since it has been found that such results are due simply to the action of certain micro-organisms getting onto the exposed surfaces of the wounds, proper care is taken to exclude them from all possibility of getting there, and the result is a marvellous lowering of the suffering and death attending such operations.

Micro-organisms, however, affect humanity, not only directly in health of the body, but also indirectly through their action on foodstuffs. All the undesirable changes that take place normally in milk when it is kept a few days outside of a refrigerator are due to the action of micro-organisms which get into it accidentally from the atmosphere on particles of dust, flies, hay, straw, etc., or from the sides of the cans, bottles or other receptacles that have not been properly cleaned and scalded before use. The spoiling of canned foods, whether fruit, vegetables or meat, is due to the activity of micro-organisms, including bacteria, yeast and mold spores. In the case

of fruits, the principle offenders are yeasts and molds. These are present normally in the surface of all fruits. If the fruit is sound and healthy, these yeasts and molds will not do it any damage. But as soon as the fruit gets bruised, then it is in the right condition for them to work, and the result of their action is a fermentation or a rot. If the fruit is to be preserved in sealers or cans, all the yeasts and molds present on the fruit have to be destroyed by heat. This is done in the cooking process. Then every care must be taken to have the sealers of jars with their tops, rings and rubbers, all thoroughly cleaned and sterile by immersing them in scalding water immediately before filling in the fruit. The temperature of boiling water is sufficient to destroy yeasts and molds, and so if the above stated precautions are taken, the canning of fruits is a simple matter.

With the canning of vegetables, such as peas, corn and tomatoes, however, such procedure would not be sufficient to ensure preservation. Certain bacteria are commonly present on vegetables which are not destroyed at boiling temperature. There are two ways of destroying these in the preserving of vegetables, and these are: first, after filling the material into the sealer or can and adding the necessary liquid, usually water with a little salt, to heat at ten pounds pressure in a steam chest for twenty minutes. This will destroy the bacterial spores which are not killed at boiling temperature. This is the method generally adopted in the canning factories. Means of obtaining steam heat under pressure, however, are not found in the household, and so the second method of treatment (which

really is better for the vegetables themselves) is the one to be adopted by the housewife, if she wishes to preserve peas, corn and tomatoes or other canning vegetables. After the sealers have been filled, the tops should be put on, but not screwed down tightly. Then they should be steamed for half an hour or a little longer. Next, they should be allowed to cool and stand for twenty-four hours, after which they should be steamed again for half an hour and then allowed to stand for another twenty-four hours, after which they should be steamed a third time. After the third steaming, the tops may be tightly screwed down, when the process is complete. The reason for heating on each of three successive days is that during the twenty-four hours following the first heating many of the bacterial spores present will germinate, and after germination they are readily killed at boiling temperature. During the twenty-four hours following the second heating, the remainder of the spores germinate and these are killed by the third heating. Then the contents of the sealers are sterile, and will remain so, and thus keep any length of time, providing micro-organisms do not get in through faulty fitting tops. Thus, if the housewife has some knowledge of microbiology, her work in preserving fruits and vegetables is not done by rule of thumb, but intelligently, and with better and more certain effect.

Cider may be readily made in the house by pulping raw apples and allowing the pulped mass to ferment. The fermentation is caused by the microscopic yeast cells that were present on the surface of the apples getting mixed in with the apple pulp. Here they find excellent conditions

for their activity, and so they rapidly multiply, and in doing so break up the fruit sugar that is present in the juice into alcohol and carbon-dioxide. After the fermentation has ceased, the cider may be bottled and used at leisure. If cider vinegar is wanted, this may be obtained by adding to the cider in the cask a little mother of vinegar. Mother of vinegar is a culture of acetic acid bacteria. When this is added to the cider, providing the cask is not full nor tightly stopped up, a gelatinous film will form on the surface of the cider. This is composed of a dense mass of the acetic acid bacteria which act on the alcohol present in the cider and change it to acetic acid. When sufficient acid has developed in the liquid, it may be drawn off as vinegar and more cider added to the cask. The vinegar should then be heated nearly to boiling point to destroy what bacteria are present, after which it is ready for use.

In the preparation of dough for bread making yeast is used to make it rise and to give the bread a good texture and make it edible. The yeast cake used for the purpose is simply a mass of millions of living plants individually too small to be seen with the naked eye, but under a high power microscope they are seen to be little spherical or oval bodies. These are the yeast plants which under certain conditions, such as the presence of moisture, a warm temperature and some suitable food material such as starch or sugar, multiply very rapidly. In so doing, they change the starch to sugar, the sugar to alcohol and carbon dioxide, and as the carbon dioxide is produced it tries to get away from the dough and in so doing causes it to rise, and fills the interior with holes, thus making the sponge.

In the preparation of sauerkraut, it is the lactic acid-producing bacteria which are the essential factor in giving proper fermentation. These are usually present in greater or lesser numbers on the cabbage when it is cut up and packed in the receptacle in which the fermentation is to take place. There are, however, other kinds of bacteria present which may spoil the preparation. The sprinkling of some sour milk over the cut cabbage when it is being packed will help to ensure a good result, as sour milk contains immense numbers of lactic acid-producing bacteria.

We see from the above that some micro-organisms are essential in the preparation of certain foods; it is simply their activities that give the desired result. On the other hand, in the preservation of other foods canned fruits and vegetables, etc., it is the destruction of all micro-organisms present that has to be accomplished, and adequate means taken to prevent others from getting into the material. In the handling of fresh milk to prevent it going bad, it is necessary to curtail the development of the bacteria that get into it during the milking operations and to prevent others from getting into it. This is done by keeping it cool and well covered.

Thus, microbiology has a constant relationship to the home life. Micro-organisms have to be contended with in the home, not only with infectious diseases, such as typhoid fever and tuberculosis, are to be dealt with, but every day in the general routine of daily life. So that some knowledge of their presence, of their nature, of methods for aiding them, controlling them or of destroying them is most desirable on the part of everyone within the home.

Death of Dr. De Laval

Inventor of the Cream Separator

CARL Gustaf Patrick De Laval, known throughout the world as the inventor of the cream separator, died on February 3rd in Stockholm, Sweden, his native city, at the age of sixty-seven years.

Dr. De Laval was best known to fame for his invention of centrifugal cream separators and as founder of the great cream separator concern which bears his name.

His activities, however, were by no means confined to the development of the cream separator. He was one of the most prolific and versatile of the world's great inventors, and in addition to his invention of the first continuous cream separator, he achieved notable success in various other fields of scientific endeavor and practical usefulness.

Among other of his notable inventions were the steam turbine, the milk tester, a centrifugal churn, an emulser, a new form of lamp, a frictionless vessel, an explosion-proof steam boiler and a process for extracting metals from ore by electrically-developed magnetism; in fact, he was tireless in his activity in working out unsolved mechanical problems of every kind. He continued hard at work experimenting on old and new projects to the very last, his brain as fertile and his energy unremitting as ever.

Indeed, at the very end he is said to have been nearing solution of the peat-coal problem, which is of national importance to Sweden, and on the day that he went to the hospital he was engaged in putting the fin-

ishing touches on a new cow-milking machine, constructed quite differently from any now in use and possessing essential advantages over any heretofore made, one of the first of which, by the way, was Dr. De Laval's own invention some fifteen years ago.

Dr. De Laval was born in the parish of Orsa, in the province of Dalecarlia, Sweden, May 8th, 1845, having come of an ancient French warrior family, a scion of which fought with Gustavus Adolphus in one of that great Swedish general's campaigns, and settled in Sweden in 1622, where he was afterwards ennobled.

Dr. De Laval was graduated from Upsala University in 1872 and engaged in scientific investigation and practical engineering work.

It was while making an experiment in sand blasting that the accidental breaking loose of a steam jet he was using gave him the idea which led to his later invention of the De Laval steam turbine, which invention is the basis of most of the types of steam turbines now being made and successfully used for motive power purposes in the United States and other countries.

The invention of the cream separator was the result of having heard a fellow-employee speak of a rotating barrel he had read of which caused the cream to rise more quickly to the surface than it would from gravity and enable its being skimmed off when the barrel came to a stop.

The article explained that the separation was the result of centrifugal force developed by the revolving of the barrel. After some discussion as to the feasibility of such a thing, De Laval became so much interested that he took the paper to bed with him. At breakfast next morning he told his associates that he understood the process and be-

inial consideration. The German engineer doubted its practicability, however, so De Laval went ahead with the building of an apparatus and the filing of patent applications.

Great as an inventor, broad-minded and unselfish, Dr. De Laval was respected and loved by all who came in contact with him.

Dr. De Laval served as a member



DR. DE LAVAL.

lieved he could so improve it as to discharge the cream from the revolving vessel while in motion.

His employer was so impressed that he offered to buy the invention, but with a fine sense of honor, De Laval explained that he felt obligated to first offer it to the German engineer whose experiments had led to his conception of the idea. And this he proceeded to do for a very nom-

of the Lower House of the Swedish Parliament from 1888 to 1890, and then in the Upper House, or Senate, from 1890 to 1896, when he declined re-election.

Many honors were naturally bestowed upon De Laval. From the King of Sweden he received the Cross of Commander of the Order of Wasa and that of Knight of the Order of the North Star. He was made

a member of the Academy of Sciences in 1886, and received the academy's gold medal in 1892. In 1896 he was made an honorary member of the Agricultural Academy. In 1904, the Engineers' Society of Germany unanimously awarded him a medal for his pioneer steam turbine work.

The dairy machines invented by Dr. De Laval have made possible the wonderful progress in the last twenty-five years in the field of dairying, and he has been rightly called "the Edison of dairying."

G. J. J.



The Hatching and Raising of Incubator Chicks

J. F. FRANCIS, '15

THE poultry industry on this continent has now reached a stage when our humble hen cannot hatch sufficient chicks to supply the ever-increasing demand. To solve this problem, poultry producers have resorted to artificial incubation, as well as the natural method.

There are so many different makes of incubators that it is impossible to say which is the best. The success that is obtained depends mostly upon the carefulness of the individual operator.

In this article the writer will endeavor to give a brief account of artificial incubation and brooding.

First comes the question of the breeding stock. It is commonly thought that some one breed is better than another. This is not true, and no breed is perfect. In selecting breeding stock, choose those from a good strain, that is, a strain which

has strong constitutions. This is indicated by short, broad bill and quick feathering. It is desirable that the strain selected should be good producers of winter eggs of high hatching power.

Now comes the question of incubation. It is not always possible to have the desired number of eggs when required. Eggs frequently have to be held for a considerable length of time, just how long this can be done without seriously affecting the germ of the egg, is hard to say. It is not, however, advisable to hold them any longer than two weeks. Keep the room temperature as near 60 degrees as possible. Seventy degrees will start the germ to hatch.

Before the eggs are placed in the incubator it is wise to give the machine a thorough cleaning. Wash with hot water containing some disinfectant, such as a five or ten per

cent. solution of crude carbolic acid or creosote. This destroys disease germs and mould spores, which may happen to be in the machine from previous hatches or from other causes.

Before putting in the eggs have the temperature of the incubator up as near operating temperature as possible, which is 100 degrees.

If the machine has a moisture pan for water, do not put in hot water, but have it luke warm. The reason for this is the moisture pan is usually below the egg tray, and the excessive heat from below would be sure to kill the germ in the egg. A temperature of 110 degrees on the egg thermometer is fatal to the germ of the young chick. Ventilate according to the directions given with the machine.

The eggs, after being put in the machine, do not require any turning for the first two days. They are then turned twice daily. Always trim the lamp after turning the eggs, as oil from the operator's hands would fill the pores of the shell and the young chick would probably be smothered. The object in turning is to prevent the germ from sticking to the shell.

On the ninth day the eggs are usually tested. Take out infertile eggs and blood-rings or dead germs.

In the early spring, eggs do not require cooling when turned, but in the summer, cool from five to twenty minutes according as the hatch advances. At the eighteenth day close the machine. No more cooling or turning is necessary, but just fill and trim the lamp daily.

The chief points to bear in mind with newly-hatched chicks are: no light, no noise and no food. Nature has provided sufficient food in the yolk of the egg to last the chick for

the first thirty-six to seventy-two hours, and time must be given for this food to be absorbed. Serious trouble will result if food is given before this time.

When the chicks are moved from the incubator to the brooder, be very careful to have the temperature above 100 degrees at the level of the chicks' back. The first feed is usually commercial chick food. It is also essential that some fine grit be available. Have skim milk or buttermilk for them to drink. Feed every two hours for the first two days, then reduce to three or four times per day. Feed plenty of green food such as sprouted grain or grated mangolds. Get the chicks out of doors as soon as the weather is warm. Care must be exercised not to allow the chicks to get chilled, as they then crowd and are apt to kill one another.

More mistakes are made through overheating and chilling than through injudicious feeding. When the chicks are about three weeks old they may be fed from hoppers. This lessens the labor, and the chicks can get their food whenever they require it. Remove the heat when the chicks are about one month old. Teach them to roost by placing the perches about six inches from the floor at first; then gradually raise to the desired height.

Get rid of all weaklings and cripples right on the start. Get the chickens in their winter quarters before cold weather comes. If the house is over-crowded, they are apt to become overheated; then, when exposed to cold air, they take cold and develop roup. This means weak and unhealthy breeding stock for the next season.

The Guelph Trip

By A MACDONALD COLLEGE MAN.

PHILOSOPHIZE, criticize, admire" — such is the exhortation I received from the worthy editor of the O. A. C. Review, when he asked me to write a few brief notes on our trip to Guelph. With such language, who could refrain from obliging the editor?

We left St. Anne's on a G. T. R. train on Thursday night, February 13. It goes without saying that the train was nearly an hour late, and were it not for the congeniality of the party who accompanied us to the station, our patience would have been nearly exhausted in the waiting. The time, however, was spent in listening to speeches and solos from some of our more talented brethren, the accompaniments of the solos being played on the stove pipe in the station. We got on board about midnight, and the other half of the night was taken up in wrestling with our bed-fellows. I myself was beginning to dose in the early morning when I was awakened by one of our men dealing with the conductor for the purchase of the line, saying that if he got it he would make some improvements, such as the putting in of shower baths in Pullman cars, more comfortable beds, etc.

We arrived in Toronto two minutes before the Guelph train pulled out on Friday morning, and of course, had to get on board without breakfast. All sorts of questions were put to the conductor as to whether there was a dining car on board, if not, whether it was possible to get some sort of a meal at a wayside lunch counter. All these were answered in

the negative. There was a gleam of hope when the news agent appeared on the scene with a few newspapers. "Have you anything to eat?" we shouted. "Just a few apples and some chocolates," he answered. Some of the men went in search, while those of us who were apparently too hungry to move, had to be contented with a package or two of salted peanuts.

It was an enjoyable moment near midday when someone shouted, "There is the College on the hill." Soon after, the train pulled into the station and we were embraced in the arms of about 150 O. A. C. students. There was something in the air which made us feel quite at home, and one could realize that he was mixing with men who had something in common with himself. We next wended our way to the College by car. There a reception awaited us, which not only filled our thoughts, but our mouths. President Creelman came into the dining hall and welcomed us in words which showed his good fellowship and an appreciation of an institution of the same character as his own. After lunch, we wandered about, some of us in the city, others around the College, until the basketball game in the afternoon. Here, Mr. Editor, I would like to suggest that in future years some arrangement be made whereby a definite time can be fixed for showing the men over the various buildings. This could be entrusted to a small committee, and it would be much appreciated by those wishing to see the interior of the different departments.

As to the games, it is hardly in

place here to say much of them, except to admire the sportsmanlike manner in which they were conducted. Each man did his best to win, and although we only got one of the games, one of the others being very close, yet it must be conceded that Macdonald is doing well even to compete with Guelph, which has three times as many students to draw from. We were unfortunate also in losing the debate this year, and the O. A. C. Literary Society is to be congratulated on their achievement. Last year

we were able to win out, and our fellows will no doubt try hard to win out next year.

In conclusion, we feel very much indebted to the O. A. C. boys for the friendly spirit they evinced towards us, and for their endeavor to make us comfortable and give us a good time. Let us hope that enthusiasm in these yearly meets will never diminish, and that Guelph and Macdonald will stand side by side in their efforts to fit men for Canada's need.



Rain in the Night

Loud on my roof the regiments of rain
 March with their old insistence, and I hear
 Troop after troop, column and troop again,
 Sweep by before Dawn's shining hosts appear.

O armies of the night, your rhythmic tramp
 Lures me at last to the glad bourne of Sleep,
 And you and I find peace in some far camp
 Where only Silence and her legions creep.

—Charles Hanson Towne.

Agriculture in the Schools

(Contributed by the Director of Elementary Agricultural Education for the Department of Education).

LESSON NO. 5

This month we will make a book rack for placing on the writing table to hold those books that we refer to most often.

Material

1 pc. quarter-cut oak, $\frac{7}{8}$ in. by $6\frac{1}{2}$ in. by 38 in.—S. 2 S. Stain and wax as in the previous models.

Directions.

1. Read Introductory lesson.
2. Prepare a true face and end.
3. Square up both ends.
4. Measure 24 in. from one end and mark a line around the piece. Saw off outside the line and square up both sawn ends.
5. Plane the short piece to thickness $\frac{3}{4}$ in.
6. On this short piece mark 6 in. from both ends. Square lines around and saw in the waste. Plane the ends square.

These operations give us two pieces for the ends and a piece for the base.

The model may be put together in many ways. Figure 3 shows the method of fastening them by hinges. In this case two 1-in. brass butt hinges are used at each end. Little recesses are cut out of the ends and base to allow the hinge to be sunk into the wood. This depth should bring the centre of the hinge pin on a line with the face of the wood. Sometimes the method shown in Figure 4 is used, but nothing is gained and the screws have a poor hold in the end grain of the wood.

Fig. 5 shows the ends fastened to the base by $1\frac{3}{4}$ -in. flat head screws.

Fig. 6 shows the end housed half way into the base. The sketch to the right shows part of the end to be housed.

Fig. 7 has the fastening made with dowels.

In all these cases the base rests on the table. Another method is to have the ends resting on the table. In this case slight modifications of all the previous methods are used.

Fig. 8 corresponds to that used in Fig. 5, except that in this case small wooden buttons are used to cover the screw head, which is sunk about $\frac{1}{4}$ -in. into the wood.

Fig. 9 shows part of the base mortised right through and fastened with wooden pins. The sketch to the right shows how part of the wood between the pins is left on and housed into the wood to prevent warping of the base.

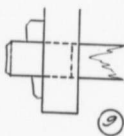
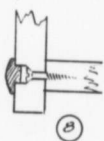
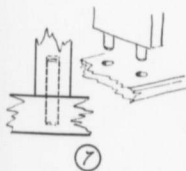
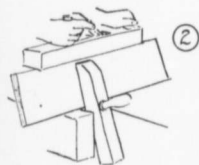
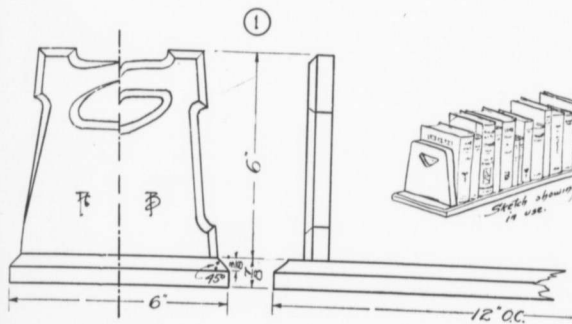
We will now proceed to finish the model as constructed in Fig. 3.

To Finish the Base

1. Smooth off the back.
2. Set out the lines for the bevel with a pencil.

Model 5

Book Rack



3. Hold the piece in the hand screws and clamp the hand screws in the vise in such a position that the lines of the bevel lie in a horizontal plane. Plane to the lines Fig. 2.

4. Plane bevel on the other long edge.

5. To plane the end bevels. Hold the board in the vise with the bevel lines in a horizontal plane and plane off the waste with the plane held at an angle to the direction it is moving. This gives a shearing cut and prevents splintering.

To Finish the Ends

1. Set out the drawing. Note that two suggestions, A and B, have been given, one on each side of the center line. Of course you will understand that both sides of one end are to be alike, and that both ends are also to be alike.

2. Work the shape as in the last model.

When the three pieces are finished, sandpaper them carefully, stain, wax and fasten together.



Passing Exams.



Midnight and burning gas
 With coffee strong, or tea,
 That I may have the goods en masse
 When they examine me.

If such as I, when plugging, fall
 asleep,
 Too worn to even think
 When Profs. with wicked eye upon
 me creep,
 What will they think.

Three a. m. and burning light,
 Pure caffeine for me,
 And may vindictive Profs. have no
 delight
 When my exams they see.

Far tho from books and notes—my
 place,
 The loafers bare me far,
 I hope to look my pater in the face,
 My name without a star.

—Vox Wesleyana.

THE O. A. C. REVIEW

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Editorials

The Editor of the Review has asked my opinion in regard to students dropping out of the course and then coming back to finish at a later date.

"Shall I Drop Out for a Year?"

Generally speaking, all men who enter the course under twenty years of age, would, in my opinion, be greatly benefited by dropping out at the end of their second or third year, and spending at least a year at some kind of agricultural work, other than that they had been used to all their lives.

My reasons may be summed up as follows:

First—A student is apt to lay a good deal of stress on the sentimental side of college life, and to become either extremely active in the College organizations throughout his whole course, or to become too intimate with his classmates, so that a lot of time is wasted in trivial matters. Dropping out disturbs this relationship, and on his return, gives a student an opportunity for reading and

research such as he would not have probably thought of. It also, at the same time, practically prevents his taking any office with his new class, and therefore leaves him more time for the work of the last year or two.

Second—It gives a student an opportunity of putting into practice ideas and methods that he has learned at College. He then comes back with problems to be solved that had not even occurred to him before.

Third—It gives him an opportunity that every man looks forward to, of visiting some other part of the country, and learning of the methods and customs and practices of a stranger people, under strange conditions. This sharpens his wits, and teaches him some things that he never knew before, and would not likely learn at College. Upon returning to College, he then has something with which to compare our work, and has also had experience different to that of his early training on the farm.

Fourth—To those who had no life

of farm experience before coming here, but had merely worked long enough to qualify for the first year—to these men, I say, the good results of dropping out should be even more pronounced. They soon find out what they did not know, and are in better position to learn.

Fifth—In the last place, a student gets a broader idea of agricultural work. He has time to think without being bothered with many studies and many examinations ahead of him. He is at least a year and a half older when he returns, and with the added worldly experience he gets, he meets his professors on his return in an entirely different frame of mind than when he went away.

All things considered, then, there is no doubt in my opinion, that the advantages are all in favor of a young man dropping out for a year or two during his Agricultural College Course.

—G. C. Creelman.

A great deal of interest was shown by both faculty and students in the series of lectures recently given by Dr. Pearl's Lectures Pearl, of Maine, dealing with the laws of heredity and their application to the breeding of poultry, as demonstrated by experiments conducted at the Maine Station. Every one who heard these lectures felt amply repaid for the time spent. At the conclusion of the last lecture it was announced by the president that, by the unanimous wish of the students present, he would make arrangements to have specialists on various branches of science, chiefly agricultural science, give similar series of lectures at the College next year. Such a course would not only be very instructive, but would, if moderation and discretion were used

in arranging the programme, be heartily supported by the students. We certainly receive every opportunity for acquiring the latest scientific knowledge in connection with our regular course, especially in the upper years, yet the presentation of their chosen subjects by men outside of the regular faculty seems to bring a freshness and variety to the matter which is much needed. We heartily welcome the innovation.

Attention is called to the article on this subject appearing in another part of this number. The writer of this article would be very pleased to co-operate with students or others interested in the question in the formation of a club next fall, for the purpose of having weekly or semi-weekly meetings and discussions. Anyone interested kindly communicate with Mr. Southworth.

The Eugenic Movement

The Book Club, otherwise the Students' Supply Co., has started with a swing. Nearly everyone has responded liberally to the request for membership fees, and with

The Book Club

the assistance of a loan from the Students' Publishing Association the financial backing is assured. A capable manager has been secured, and with the assistance of the energetic committee from the different years there should be few or no mistakes in management. Practically the only thing necessary for complete success now is loyal support from the members of the association next term. We will publish in a later number the constitution of the society as approved at a recent meeting of the members.

ATHLETICS

Indoor Meet

THE annual indoor meet was held in the College Gym on the afternoon of March 13th. The meet was very successful in every respect, and the events were run off with unusual precision and accuracy. In fact, by 5:15 o'clock all the events had been pulled off, and it was not a case of running them on

into supper hour, as has been characteristic of former years.

Pope was again the grand champion, with a total of 37 points. For the fourth time in succession Jim has annexed the Pringle shield. This is truly a record of which any athlete might be proud. Palmer came second with 19 points, and E. Davies was



O. A. C. RUGBY FOOTBALL TEAM, 1912.

Winners Junior Inter-Collegiate and Runners Up for Dominion Championship.

Front Row—Husky Hockett, Lew Henry, Champ Herder.
 Second Row—Pete Neelands, Jack Jackson, Rube Brown, Boogy Madden, Cap. Webster, Mac McEiroy.
 Third Row—Peg-leg Sibbitt, A. H. McLennan, W. H. S. Tisdale, S. H. Gandier, D. W. Gillies, Bunny Hare.
 Last Row—Jack Simpson, Blondy Wilson, Bull Moose Dudgeon, Taffy Davison.

third with 15 points, winning them all in swimming. On the afternoon's sport the Juniors came out ahead, with the Freshmen second. But when the swimming points are added the Seniors lead, with the Freshies second. Three records were broken, two by White, of the First Year, and the other by the Freshmen's relay team. Following is a list of the events and winners:

15-Yards Dash — 1st, Pope, '14, 2 2-5 seconds; 2nd, Palmer, '13, 2 3-5 seconds; 3rd, Varey, '15, 2 4-5 seconds.

Hitch and Kick — 1st, Chambers, '15; 2nd, Curran, '16; 3rd, Palmer, '13.

Standing High Jump—1st, Palmer, '13, 4 ft. 5 in.; 2nd, Pope, '14; 3rd, Bryden, '16.

Running High Jump — 1st, Winslow, '14, 5 ft. 2½ in.; 2nd, Pope, '14; 3rd, Palmer, '13.

Putting Shot — 1st, Forsyth, '14, 37 ft. 6 2-5 in.; 2nd, McRostie, '14, 36 ft. 3 in.; 3rd, Foreman, '16, 35 ft. 8 2-5 in.

Standing Broad Jump—1st, Pope, '14, 9 ft. 6 in.; 2nd, Bryden, '16, 9 ft. 2 in.; 3rd, Palmer, '13, 9 ft. ½ in.

Fence Vault—1st, Pope, '14, 6 ft. 2 in.; 2nd, Varey, '15; 3rd, Bryden, '16.

Three Standing Jumps—1st, Pope, '14, 29 ft. 7¼ in.; 2nd, Varey, '15, 27 ft. 5¾ in.; 3rd, Webster, '13, 27 ft. 3¾ in.

Hop, Step and Jump—1st, Pope '14, 27 ft.; 2nd, Bryden, 26 ft. 9¾ in.; 3rd, White, '16, 25 ft. 7¾ in.

Rope Vault—1st, Palmer, '13, 12 ft. ½ in.; 2nd, Altenberg, '16; 3rd, Smith, '15.

Pole Vault—1st, Pope, '14; 2nd, Palmer, '13; 3rd, Altenburg, '16.

60-Yards Potato Race—1st, Hex-tall, '13, 16 1-5 seconds; 2nd, Bryden, '16, 16 2-5 seconds; 3rd, Chambers, '15, 16 3-5 seconds.

440-Yards Potato Race—1st White, '16, 1 min. 46 3-5 seconds (record); (old record, 1 min. 58 2-5 secs.); 2nd, Elgie, '16, 1 min. 48 secs.; 3rd, Whaley, '15, 1 min. 50 secs.

Chinning Bar — 1st, Neff, '13, 26 times; 2nd, Welton, '16, 23 times; 3rd, Varey, '15, 21 times.

Rope Climb—1st, Puleston, '16, 15 secs.; 2nd, Clemens, '16, 15 1-5 secs.; 3rd, Kirk, '14, 15 2-5 secs.

High Dive—1st, White, '16, 5 ft. 4¼ in. (record); (old record) 5 ft. 2½ in.; 2nd, Webster, '13; 3rd, Harding, '13.

Inter-Year Relay—1st, First Year, 1 min. 7 3-5 secs. (record); (old record, 1 min. 10 secs.); 2nd, Fourth Year, 1 min. 9 4-5 secs.; 3rd, Third Year, 1 min. 11 4-5 secs.; 4th, Second Year.

Year Record—1st, Class '13, 76 points; 2nd, Class '16, 73 points; 3rd, Class '14, 55 points; 4th, Class '15, 38 points.

Floor Champions — Class '14, 51 points.

Officials—Referee and Starter, D. W. Gillies; Judges, Prof. R. W. Wade, W. J. Squirrel, B.S.A., E. W. Kendall, A. W. Baker, B.S.A.; Timers, S. Springer, H. L. Fulmer, B.S.A., S. H. Gandier, B.S.A.; Clerks, S. F. Jones, W. F. Strong; Announcer, E. Davies.

In the evening, Mr. Ed. Archibald, of Toronto, gave an exhibition in the gym. This consisted of jumping and pole vaulting. Mr. Archibald certainly gave a fine exhibition in the latter, clearing 11 feet 6 inches. Mr. Archibald weighs 180 pounds, and it is remarkable to see him raise himself to that height with such grace.

Aquatics

The annual inter-year aquatic meet was held on Saturday afternoon, March 1st. Taken on the whole the meet was a decided success, due to the fact that the races were so well contested. There were no records broken, and few surprises were evident. The Seniors, headed by Davies, upheld their reputation by winning the inter-year championship. The events and winners follow:

52 Yards, Open—1st, Davies, '13, 30 seconds; 2nd, Vander Byl, '15, 30 1-5 secs.; 3rd, Hextall, '13, 34 secs.

52 Yards, Novice—1st, Langley '16, 42 secs.; 2nd, Foote, '16, 43 secs.; 3rd, Hales, '14, 45 2-5 secs.

104 Yards, Open—1st, Davies, '13, 1 min. 6 4-5 secs.; 2nd, Vander Byl, '15, 1 min. 15 3-5 secs. 3rd, Puleston, '16, 1 min. 23 3-5 secs.

35 Yards, Beginners — 1st, Lord, '16, 25 secs.; 2nd, Cotsworth, '16, 25½ secs.; 3rd, Higman, '15, 26 secs.

Long Plunge—1st, Townsley, '15,

43 ft. ¾ in.; 2nd, Smylie, '15, 36 ft. 5 2-5 in.; 3rd, Davison, '13, 35 ft. 11 2-5 in.

208 Yards, Open—1st, Davies, '13, 2 min. 28 secs.; 2nd, Vander Byl, '15, 3 min. 13 3-5 secs.; 3rd, Puleston, '16, 3 min. 29 secs.

Fancy Diving—1st, Harding, '13; 2nd, Hextall, '13; 3rd, Kirkley, '15.

52 Yards, Back Swim—1st, Davies, '13, 40 secs.; 2nd, Harding, '13, 47 2-5 secs.; 3rd, Davison, '13, 49 1-5 secs.

Inter-Year Relay, Novice — First Year, 1 min. 45 3-5 secs.; Third Year, 2 min.

Inter-Year Relay, Senior — 1st, Fourth Year, 1 min. 31 2-5 secs; 2nd, Second Year, 1 min. 32 1-5 secs.; 3rd, First Year, 1 min. 42 secs.

Summary of Points—1st, Fourth Year, 39 points; 2nd, First Year, 24 points; 3rd, Second Year, 22 points; 4th, Third Year, 4 points.

Grand Champion—1st, Davies, '13, 15 points; 2nd, Vander Byl, '15, 9 points.

Boxing and Wrestling Tournament

This event was run off Saturday, March 15th, with a large number of spectators on hand to see the gladiators perform. Gore and knock-outs were not so conspicuous as in last year's contests, but there were several exciting bouts.

Kirk, '14, and Elgie, '16, competed in the featherweight boxing, and though Elgie put up a good scrap, Kirk succeeded in winning on points, **Puleston, '16, Stratford, '15, and Whaley, '15**, finished in the order named in the lightweights. Stratford was too quick for Whaley, but could not quite reach Puleston, who fought most of the last round with a dislocat-

ed thumb. **Pope, '14, and McEwan, '16**, had a lively three rounds in the welterweight class. **Pope** was apparently trained down too fine, and McEwan made him travel for the decision. He deserves praise for his battle against such an experienced boxer. **Ramsay, '14**, was uncontested in the middleweight, and won from **Davidson, '13**, in the heavies. He paid particular attention to "Taffy's" nasal organ in this bout, and put up a nice exhibition of ring tactics, and real boxing.

White, '15, was too strong for **Elgie, '16**, in the featherweight wrestling, but succumbed to **Whaley, '15**,

in the lightweight class. **Carncross**, '16, secured a fall on **Smith**, '15, in the welterweight preliminaries, while **Bergey**, '14, struggled vainly for six minutes to turn "**Tubby**" **Nourse**, '14, over, finally receiving the decision on merit alone. When **Bergey** and **Carnross** came together in the finals for this class, the little Dutchman, after five minutes strenuous heaving, planted **Carncross** on his shoulders.

Young, '16, and **Bergey** clashed in the middleweight class, the former securing a fall by superior weight

and strength. **Steckle**, '15, and **Mains**, '16, struggled ponderously in the heavies, with the result that the first named individual now wears the belt.

There were not sufficient entries in these contests to leave results very much in doubt. At present only ribbons are given to winners. To stimulate an interest it would seem to be advisable to strike medals or offer something that would induce more fellows to go into the sport. A ribbon is small reward for a broken nose or a strained shoulder.

Hockey

Freshmen 6, Seniors 0.

Class '16 won the inter-year hockey championship in decisive fashion on the evening of March 5, by treating the Seniors to a coat of whitewash. The result was not unexpected, but the score most certainly was. No one would have considered for a minute the thought of the Seniors being blanked.

The Freshmen played a very strong game. They cut loose with a combination that has never before been exhibited by a year team of this school. The score at half time was 3-0, which well illustrates the consistency of the playing.

From the showing of the First Year team, we are led to believe that the best hockey material in the College was not used in College games during the past season. That is not the fault of the management altogether, for if a man does not turn out to practice the manager does not know how good he is. The teams:

Seniors — **Henry**, goal; **Jenkins**, point; **Tisdale**, cover point; **McElroy**, rover; **Bramhill**, centre; **Culham**, right wing; **Brown**, left wing.

Freshmen—**Curran**, goal; **Lackner**, point; **Foreman**, cover point; **Thompson**, rover; **Gandier**, centre; **Langley**, right wing; **French**, left wing.

Referee—**S. H. Gandier**.

Seniors 7, Juniors 0.

The Seniors defeated the Juniors in the second game of the inter-year series on the Royal City rink on Tuesday night, Feb. 26. The score was 7-0.

The Seniors had no difficulty in winning, as they outclassed the Juniors at all stages of the game. The ice was hard, and the game should have been fast, but many of the players lacked condition. For the Seniors **McElroy** played a star game, scoring four goals, and **Tisdale** at cover point, made some good individual rushes. The Seniors excelled in combination, and it was largely due to the excellent work of **Irvine** in goal for the Juniors that the score in favor of the Seniors was not larger. The line-up was:

Seniors — **Henry**, goal; **Jenkins**, point; **Tisdale**, cover point; **McElroy**, rover; **Bramhill**, centre; **Culham**, right wing; **R. Brown**, left wing.

Juniors—Irvine, goal; H. R. Hare, point; Creelman, cover point; Hales, rover; Madden, centre; McRostie, right wing; Paterson, left wing.

Referee—S. H. Gandier.

—J. N. A., '14.

Freshmen 3, Sophomores 2.

Freshmen—Curran, goal; Lackner, point; Foreman, cover point; Thompson, rover; Gandier, centre; Langley, right wing; French, left wing.

Sophomores—Donald, goal; Fraser, point; Kinlock, cover point; Binnington, rover; White, centre; Hinman, right wing; Croskery, left wing.

Referee—H. M. McElroy.

On February 26 the Freshmen won the first of the semi-final games for

the inter-year championship by defeating the Sophomores by 3-2. The above teams represented their respective years, and a closely checked, hard fought game resulted.

All through it was a case of get the puck if you can, and if you can't get the puck, get the man. The Sophomores were minus the assistance of Kilgour and McCall, and if they thought they could still win they found their guess was wrong. Little combination was played, both teams relying more on individual work. For the Freshies Foreman and Thompson starred, while Fraser and Col. White put up the best game for the Sophomores.

T. H. H. F., '15.

Basketball

London 28, O. A. C. 19.

After a long season and a hard fight, the College five went down before London Medical College in the final game. The game was played in the West End Gym in Toronto, and the Westerners came out on the long end of a 28-19 score.

The O. A. C. team did not play up to form. More than that, they were at a disadvantage in being penalized very frequently for too strenuous checking. At half time London led by 18-7, but in the last half College went considerably stronger and shot more accurately.

College was represented by: Wilson and Munroe, forwards; Culham, centre; Horobin and White, defence.

O. A. C. 19, Varsity II. 17.

The following extract from one of the Hamilton papers describes the semi-final game of the basketball league:

"Toronto Varsity Intermediates were put out of the running in intermediate scholastic O. B. A. basketball league, when they were defeated by

the Guelph Agricultural College by a 19-17 score on the junior floor of the local General Y.

The Toronto team had a slight advantage in the first half and were one point in the lead at the end of that period, the score being 12-11.

In the second half, however, the tables were turned, the Guelphites coming back strong and winning out by two points. The game was fast and clean, both sides watching the ball instead of the man all the time.

The shooting on both sides was very poor owing to the hard checking of both teams. The teams were:

Toronto (17)—Chandler and Fawcett (7), forwards; Campbell (2), centre; Barnes (4) and Zimmerman (4), defence.

Guelph (19) — White and Munroe (6), forwards; Wilson (2), centre; Horobin and Culham (11), defence.

Guy Long refereed the game to the satisfaction of all present. These two teams, along with London, form the intermediate scholastic O. B. A. league, and all three were tied.

Baseball

Seniors vs. Freshmen.

On Monday, March 10, the Freshies put the Seniors out of the running for the inter-year honors by a score of 20-9. The score fairly indicates the merits of the teams, as on the day's play the Seniors were out-classed.

For three innings the Freshmen were held scoreless, but the fourth Neff began to weaken and in the fifth a slaughter, which was terminated only by time, commenced. On the other hand the Seniors fared poorly against White. They tried to kill the ball with the inevitable result that eleven men went out by the high ball r ute. The score:

Fourth Year.	A.	B.	R.	H.	P.	O.	A.	E.
Palmer, 1st	4	3	3	7	0	0		
Bramhill, 3rd...	4	2	2	0	0	0		
Neff, p	4	0	2	5	4	1		
Henry, l f	4	0	2	2	1	1		
King, c	4	0	0	5	0	3		
McElroy, ss	4	1	2	1	0	1		
Webster, r f ...	4	1	2	0	0	0		
Nixon, ss	4	2	3	0	1	0		
Brown, 2nd	3	0	0	1	0	3		
Tisdale, 2nd....	1	0	0	0	0	0		
Total	32	9	16	21	6	9		

First Year	A.	B.	R.	H.	P.	O.	A.	E.
White, p	5	1	2	13	4	0		
Rowland, ss ...	6	3	3	0	0	1		
Bryden, 3rd	5	4	4	0	0	0		
Hare, c	4	4	3	2	2	1		
Seitz, 2nd	5	3	3	1	0	1		
McEwan, 1st ...	5	1	2	4	0	0		
Bird, ss	5	2	3	1	0	1		
Clemens, r f ...	5	0	2	0	0	0		
Foreman, l f....	4	2	3	0	0	0		
Total	44	20	25	21	6	4		

Score by innings—

Freshmen	0	0	0	2	6	5	7	—	20
Seniors	0	0	3	0	1	5	0	—	9

Juniors vs. Freshmen.

Class '14 captured the inter-year baseball honors when they defeated the Freshmen on March 12 by 19-9. The game was easily the most exciting that has ever been played here, if noise can be taken as a criterion. The Freshmen were confident of victory, and their hopes were well grounded, for they did not succumb without a game struggle.

Wilson started the box work for the Freshies, but the Juniors, by hard hitting, forced his retirement at the end of the second inning. After that White took up the burden, and his change of pace fooled the Juniors for a time. However, they got to him for enough runs in the last few innings to put the game on ice. Hales pitched a steady game, and though hit hard at times, never failed in the pinches. Forsythe and Creelman starred for the Juniors, while Bryden and Hare did the best work for the Freshmen. The score follows:

Third Year	A.	B.	R.	H.	P.	O.	A.	E.
Creelman, 1st ..	3	3	1	7	0	0		
Winslow, l f....	5	3	3	0	1	0		
Hales, p	5	4	4	4	2	1		
Culverhouse, 2nd	5	2	3	1	2	0		
Duff, 3rd	5	1	1	2	0	1		
Forsyth, ss	4	2	2	5	0	1		
Neelands, ss....	4	1	3	0	3	1		
Bergey, r f....	2	1	0	0	0	0		
Jackson, c	4	2	2	2	0	3		
Totals	37	19	19	21	8	7		

First Year.	A.B.R.	H.	P.O.A.E.				
White, r f and p	4	0	1	0	2	1	
Wilson, p and r f	4	1	1	0	1	1	
Rowland, ss	4	0	1	2	3	0	
Bryden, 3rd	4	1	4	0	1	1	
Bird, ss	4	3	3	0	2	1	
Hare, c	4	1	1	2	0	2	
Seitz, 2nd	3	1	2	2	3	1	
McEwan, 1st	3	1	2	12	0	1	
Foreman, r f	3	1	2	0	1	0	
Totals	33	9	17	18	13	8	

medals were awarded, and next year there is the promise of something better still for the winners.

Competition is the life of sport, and there is no reason why, by generous competition, we cannot have two classes of fencers. One would be on this side and one on the other side of the Campus—for it is as much a girls' sport as a boys'—and in time produce fencers for O. A. C. to be proud of.

R. G. Sutton, '15.

I might say that Mr. Sutton won the College championship in this line of sport. Mr. Pratt, of Class '16, was runner-up.—Ed.

Score by innings—

Juniors	4	7	0	0	5	3	x—19
Freshmen	0	1	1	3	1	2	1—9

FENCING.

Fencing has more of a future than a past at O. A. C. Much might be written on the advantages of a knowledge of the art, but we will not attempt to discuss that.

Owing to the generous and energetic efforts of Mr. Diaz and the assistance of Mr. Gillies, considerable interest has been aroused this year. A novice class consisting of those who started to use the foils since coming here, and a senior class who had some experience before coming here, took part in our fencing tournament on March 8, this year. Ribbons and

IF—

"If my pitchers hold up," says the mogul,

"If my pitchers pan out as they should;

If my infield is there
With a margin to spare,
And my outfield is there with the wood;

If we tear off more wins than the others—

If we get far enough out in front;

Well—grab it from me,
In the old jubilee.

We'll be there somewhere in the hunt."

LAND OF RAIN.

By Richard Le Gallienne.

I am the king of the land of rain,
The king of the falling, falling showers,
The land of graves where the daffodil flowers,
And the ancient spring comes back again.

I am the king of the running stream
That escapes from the winter and laughs and sings,
Of the broken heart, and the ruined dream,
And all forgotten, forsaken things.

I am the king of the rising moon,
And the setting sun, and the falling star,
I am the king of last year's snow,
And the country where the lost faces are.

College Life

The Athletic Concert.

UNIQUE, thrilling, entertaining, and the best yet," expresses in a few words the consensus of opinion regarding the annual concert given by the Athletic Association. And it was a "cracker-jack."

Under the leadership of Mr. D. W. Gillies, physical director, the gymnasium team excelled all former records in the art of pyramid formation and in the performances on the parallel



G. S. Hirst.

bars. The exhibition on the high bar by Messrs. Hare, Harding, Keefe and Gillies, called forth special praises, especially the performances of Mr. Keefe, who had come up from Hamilton to help our physical director. The fencing bouts between Messrs. Diaz and McClymont were of interest, as this sport, although comparatively new to the College, is growing rapidly in favor. Best of all, in the first part

of the programme was the graceful Highland dance given by the Macdonold girls under the direction of Dr. Annie Ross, and loud applause calling for an encore, it was granted.

In the latter half of the evening, the hand-to-hand balancing by Messrs. Keefe and Gillies, and the comic performances of Ad. Burrows, were excellent, while the athletic statuary by Messrs. V. C. Puleston and Kirkley were also very much appreciated. The club-swinging by Mr. Keefe was, to use an expression overheard from one in the audience, "Jim-dandy."

Although the athletic performances claimed the chief attraction, the musical numbers given by the Four Star Concert Quartette, of Toronto, were not far behind in the praises awarded. Perhaps the songs of Mr. Earl Ludlow (baritone) and the piano selections by Miss Florence McKay were the most appreciated, but Mr. Broadus Farmer, violinist, and Miss Grace Walter, elocutionist, were not very far behind. The College orchestra played throughout the athletic exhibitions and the intermission.

Horticulture Club Banquet.

At the banquet given at the Kandy Kitchen, by the Horticulture Club, on Monday evening, March 10, about 40 people gathered, including a good representation from the Faculty. Mr. Delworth, the president of the Ontario Vegetable Growers' Association, was the principal speaker of the evening, and dwelt for some time on the prospects of vegetable growing in this province.

Athletic Sleigh Ride.

Although snow was scarce this winter, the Athletic Association seized the opportunity, when a little snow did come, to have a sleigh ride party, on the evening of March 3, the athletic executive from the hall being invited to go along. After a little jaunt into the country the party repaired to the Kandy Kitchen, where, after a hearty lunch, a little dance was held.

Hope for Mrs. Pankhurst.

"Tis easy enough to be pleasant
When life goes by with a song,
But the man worth while
Is the man who will smile
When everything goes dead
wrong."

Such, possibly, may be the wail heard from mere man when those of the opposite sex have been granted the suffrage. This enfranchisement was, on March 15, proved by Messrs. R. B. Hinman and P. E. Culverhouse, to be in the best interests of Canada and Canadians, although the Misses G. M. Crowe and F. Winslow strongly opposed this radical step. The debate throughout was full of witticisms and little sallies, and the audience was loud in its applause, the boys, however, seeming to have deserted their fellow-students on the platform, to support the two young ladies from the Hall.

Miss A. Spragge and Miss D. Harvey rendered a piano duet, and Miss W. Woodworth and Mr. P. Vahey each gave vocal solos. Encores were called for and granted in each case.

The Spring Hop.

While it is claimed that the joys of anticipation are greater than those of realization, there is always the ex-

ception to the rule and verily, the spring hop given at the Macdonald Hall by the Junior Year was an example of this. Despite the fact that comparisons are odious, it may be safely said that that dance was the most successful and enjoyable that has been held at the Hall for some time.

Prof. Wade, the Class '14 honorary president, and Mrs. Wade, received the guests in the gymnasium which was prettily decorated with green and white streamers looped down from the ceiling, while Japanese lanterns were suspended in rows. Dancing began at 8 o'clock and continued until about 1:30, Nuneham's orchestra, of Buffalo, supplying the music. And the number of extras they gave! They certainly were generous.

There were several precedents established at this dance, which it would be well for other classes to follow. First, it was distinctly agreed by both the boys and girls that no booking of dances ahead of time would be allowed, thus overcoming this great nuisance and making things fairer for the young ladies. A pleasing feature was that the boys were asked to come in "whites" and the comfort of this absolutely informal dress was great. During luncheon the dances were stopped, enabling everyone to get refreshments at the same time without the worry of missing partners.

The Oratorical Contest.

The evening of Friday, March 7, saw the 15th Annual Oratorical Contest held at the O. A. College. The prizes were awarded as follows: 1st, G. S. Hirst; 2nd, L. B. Henry; 3rd, M. T. Smith; 4th, G. J. Jenkins; 5th, W. O. Donovan.

Mr. G. S. Hirst, in his speech, "The

New Woman," traced the evolution of the emancipation of woman from her position as slave in remote times to that of her practical freedom of today. The one thing lacking to make woman's influence most felt, was the granting of the franchise to them.

"Canada's Duty," was, according to L. B. Henry, the strengthening of the unification of Canada in order that this land of ours be a strong unit in the British Empire, this being in return for the great financial assistance that Great Britain has given us.

Mr. M. T. Smith spoke concerning the individuality of a nationality as affecting arbitration, while "The Pioneer," with all his troubles and his pleasures, was dealt with by G. J. Jenkins.

"The uplifting of the major portion of mankind by the process which produced the highest type of man—not by any religious process but by a material process, which so fitted nature to best adapt itself to and obtain the most benefit from life," was the theme expressed in the speech by W. O. Donovan.

The musical numbers were provided by Miss Laura Adel Homuth, soprano, of Toronto, and Miss Hattie R. and Chas. Kelly, of the city.

Relations to Fellows.

An important factor of a liberal education is the development of a man's inclination and ability to understand, sympathize with and work alongside of other men of different habits, tastes and ideals than his.

As the result of whatever purpose or chance you find yourself in College, it will still be your best move to know the fellows around you as quickly and as well as possible. That is one of the chances offered by college life which

no man can afford to miss. You can learn many of life's most important lessons by making a thoughtful study of the lines of your mates.

In thinking or speaking of any of your fellows, look for the good, not the evil.

In your choice of friends take every man for his personal worth; never mind his name.

Be wise enough and unselfish enough to work to advance other interests rather than your own.

Choose your own path and plan of action, and then use them. Give others the same liberty which you demand for yourself.

Be charitable towards weakness. Remember that charity is a larger term than pity; love the man—hate his evil ways.

Consider a man's motives before you condemn his actions.

Whatever else you do, avoid "knockers' sessions." Any fool can find fault with anything. Make it your rule to criticize only where you can point out some means of improvement.

Be especially careful to deal justly and charitably towards any man against whom you happen to have a personal prejudice.

Be sincere and unaffected in all your dealings.

Respect every man's opinion, but act on your own.

"Let no man despise thee" — not even thyself.

"This above all, to thine own self be true,
And it must follow as the night the day,
Thou canst not then be false to any man."

—From "Not in the Curriculum."

The College Boy.

This is the song of the College boy, as
 he sits in his room on the bed,
 The exams are on, he makes as his
 song a sketch of the life he has
 led.
 Mad near to swearing, eyes sad but
 glaring, these are the words that
 he said:

I'm one of the student body, an old-
 fashioned college guy;
 I came in first form, a pupil new born,
 I was lonesome yet didn't die.
 I have tried to study my lesson; I've
 tried to be good at the college;
 Looking back I seem to think it's a
 dream, this scramble and search
 for knowledge.

Just look at my eye that is blackened,
 just see where my ear is rubbed
 off.

My left foot is lame, but still I am
 game, I've even the whooping
 cough.

Each one is a mark of some college
 lark, when I fought as one in the
 fray;

And I lay in bed, with an aching head,
 for all of the following day.

We were just like a great big family
 —each one of us helped the
 other,

We lived a happy-go-lucky life —
 we'll never live such another.

Until of a sudden came the exams,
 and they plucked us—yes, every
 man,

We may not have been angels before,
 but that's when the language be-
 gan!

Oh, those college days, they seem like
 a haze which hangs as a mist in
 my mind;

For the fellows I chum'd around with
 then, now appear to be left be-
 hind.

But we all were mad, not to know we
 had a good chance of one day
 being wise;

When grinning we'd shirk our ardu-
 ous work, and tell a few poor stu-
 dent lies.

Our money is not like dirt down here
 —not so easy to get as to spend.
 Funny that I should always be broke,
 and none has a shekel to lend.

The same every year, it seems rather
 queer, I never can save up the
 dough;

And while you are out of the little
 iron men, your life at a college
 is slow.

This life is only a jumble. 'B.A.'s are
 not always the best.

Many a fellow is famous, though he
 has not drawn one with the rest.
 Often I sit and wonder, if it's worth
 while this learning to seek,

When I think of the long, long hours
 alone spent on English and Latin
 and Greek.

Seven long years at the college —
 struggling to soar above,
 Striving to study old Ganot and Zig.,
 and things that I never can love,
 Bathed in her praise and glory —
 fighting her censure and blame.

Seven years in the college — years
 that all seem the same.

They seem all the same, but no mat-
 ter, I must keep on learning still
 more,

But I can't settle down to review, in
 my mind, the work I've done
 before.

The exams are on and I'm so tired,
 I'll just lie down on the bed—
 To-morrow I'll study—then I'll repent
 for the life that I have led!

—Theodore J. Kelley in Uni-
 versity of Ottawa Review.



ALUMNI



When the month is quickly waning,
And your dope not written up,
And you are roundly rated by the
chief;

Then you think to 'scape a chiding
You can shift the bitter cup,
And aren't you justified in this
belief?

When your letters are unanswered
And your "grads" do not reply,
And you are most distracted with re-
gret;

O, the bliss that is afforded
By a packet for Alumni
That shows the hearts of old boys
with us yet.

A recent issue of the Mail and Empire devotes a column to a description of the good work being carried on by the Department of Agriculture of the Province of Saskatchewan, under the capable leadership of Hon. W. R. Motherwell.

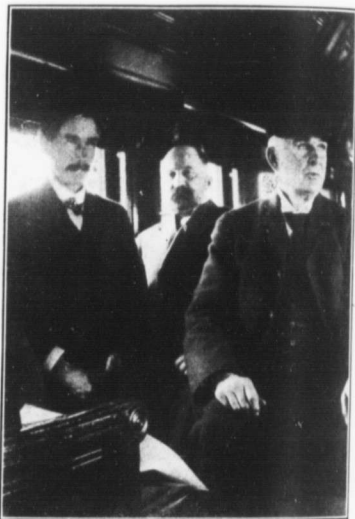
This work includes the establishment of a system of co-operative elevators, the promotion of co-operative creameries, the assistance of rural telephone lines, the enactment of the Municipal Hail Insurance Act which provides insurance against this possibility of crop failure, the assistance to agricultural societies and other measures of benefit to the rural sections.

That such progress should be largely the work of an ex-student is gratifying. Hon. W. R. Motherwell was graduated in '81. He settled at Brandon, afterwards removing to Pleasant Plains.

In 1902 he was made president of the then newly-formed Grain Grow-

ers' Association. After three years in this position in 1905 he was made the first Minister of Agriculture for Saskatchewan. That this position is capably filled is evidenced by the attention the work of his department is receiving from outside sources.

Mr. G. H. Cutler has accepted the



W. R. Motherwell in Centre.

position of professor of field husbandry at the new agricultural college at Saskatoon, Saskatchewan.

Mr. Cutler, '09, was experimental editor of the Review in his graduating year and since that time has been lecturer in field husbandry at Macdonald College. These past experiences admirably fit him for the more

responsible position he will now occupy.

W. J. Carson, '02, is now managing director of the Carson Hygienic Dairy Company at Winnipeg, of which Charles W. Gordon (Ralph Connor) is president.

Mr. Carson, after a very successful course here, was assistant professor of dairying at the Wisconsin State College for four years. He later was professor of dairying at Manitoba Agricultural College, Winnipeg, which position he resigned to accept the one he now occupies.

L. A. Bowes, '08, more familiarly known as Dr. Bowes, was graduated the year the College won the stock judging trophy, and was a member of the Chicago team that year.

"Doc" was agricultural editor of the Review, and after graduating, spent a year on the staff of the Farmer's Advocate, Winnipeg. He was for a time agricultural editor of the Winnipeg Telegram. He next spent two years with the Advocate as manager of the Calgary branch.

Real estate, that attractive business of Western Canada, then received his attention, and he is now head of the firm of L. A. Bowes and Company, real estate brokers.

C. F. Whitley, who is in charge of the cow testing work of the Dairy Commissioners' Branch of the Dairy Department, Ottawa, recently gave an address on the value of cow testing to the dairy short course students.

H. W. Newhall, '11, who has been on the staff of the Michigan Agricultural College, at Lansing, has now a position with the Carlyle Dairy Company, Calgary. This adds one more to the somewhat lengthy list of ex-students who have returned from U. S. to fill positions in Canada.

R. L. Murray who took his associate diploma with the Class '05, has been railroading for the past six years. He is now taking up farming as an occupation at Norval, Ontario.

Mr. Murray, who as an authority on agriculture, was the means of assisting some of his classmates in this particular subject will now have an opportunity to exemplify his precepts.

The Board of Railway Commissioners has appointed E. J. Zavitz, Provincial Forester of Ontario, as Provincial Fire Inspector to enforce the fire regulation of the board.

Mr. J. H. Hare, of Whitby, has been appointed to the Live Stock Branch of the Department of Agriculture. His duties will consist of an investigation of the Canadian egg trade.

Mr. Hare, '08, has been district representative in Ontario County for the past four years. A prominent feature of his work in this County has been the organization of a number of co-operative egg circles.

Mr. Hare will be located at Ottawa, but will travel extensively throughout the Dominion, first in the east and later in Western Canada.



MACDONALD

STUDENT DEMONSTRATIONS.

THE term "dems" means very little to about seventy per cent. of the Macdonald girls, and the thirty per cent. who are so familiar with them are apt to forget this and think that what is so important to them must be important to everyone. Therefore a word of explanation and description may not be out of place.

Each Senior Normal student has to give three demonstrations, one per term, and each Senior Housekeeper, one. It is a very serious matter when a girl demonstrates, for it is well known that the success of her professional career may hang in the balance. The audience is composed of her own class, whose painful duty it is to criticize everything the demonstrator does and says, while they are on tenter-hooks of nervous sympathy



The Koseykornerites vs. Hobbledehoyas.

The term demonstration means simply an illustrated lecture, and in connection with the work at Macdonald, the lecture is usually on some certain class of foodstuffs, and the illustration is the actual preparation and serving of several dishes in close relation to the subject of the lecture. But a demonstration does not necessarily mean cookery. It might be given on laundry work, or house practice with equal effect.

with her, each knowing that her own turn will come soon.

The demonstration is really a trial of the strength of the "victim." her foresight, ability, artistic sense, imagination, oratory, all are being tested. Her own personality counts strongly, either for or against her, and originality is always commended. For there is a rut in this as in every department, and the number of times the same audience is told to "break an

egg on a flat surface" is almost incredible.

Demonstrations are a great aid to the student, not only as a technical preparation for the profession of demonstrating, but as a means of insuring accurate work, neatness and thoroughness. When one has read all the bulletins, cook-books, and foods authorities for information, written what amounts to a small thesis on the subject in hand, arranged it to dovetail with the practical manipulation, and memorized it, one will never again be confounded on that particular subject.

Curious things happen sometimes in "dems," things that are laughed over later, but that seem like terrible faults at the time. One dainty maid once held up a doughy spoon and said, "Please observe the constituency of the mixture." But it is never quite safe to laugh, because the things one does one's self may be "curiouser and curiouser."

Much as we appreciate the good of demonstrations, we are all inclined to jubilate when we have come through the trial without burning or spilling our materials or losing our tongues. The girl who runs upstairs two steps at a time with a beaming smile and humming the National Anthem is almost certain to be "to-day's demer."

—G. M. C.

MACDONALD HALL Y. W. C. A.

Institutions such as the Young Women's Christian Association exist because we are of complex nature. There is the mental and the spiritual, and to be a complete man or woman both of these must be developed. The primary object of our college is the development of the former. To aid

in the latter the Y. W. C. A. accepts as its care. As a cabinet we have realized our responsibility and thoughtful consideration has marked our every weekly business meeting.

Our aim has been not that of radical reformation, but the more quiet means of elevating the moral tone of creating an atmosphere for that practical phase of Christianity, which is so attractive, so convincing.

During two terms of our College year we have held weekly meetings. They are now about to close. During the first term we had a course in Bible study which was specially well conducted by Miss Long. Twice during the year union meetings were held with the college Y. M. C. A. These, though an innovation, were well attended and the interest shown warrants their introduction and their continuance.

Some forty dollars has been raised for missions, all of which goes for Y. W. C. A. work in Japan, under the supervision of Miss Caroline Macdonald, of whose excellent services we are assured. Besides there is in the treasury that which will pay the expenses of three of our students to the summer conference at Muskoka in July next for preparation as leaders for next year.

Other special features of the year were a visit from the College secretary, Miss Jamieson, a visit from Miss Robinson, of the Student Volunteers, New York, and our president attending the annual meeting of the Dominion Council, Toronto.

—H. J.

The Brewery.

One day in February the Senior Chemistry Class had their annual visit to Sleeman's brewery to see the

malting and brewing processes. The party was conducted by Professor Harcourt, Mr. Galbraith and Mr. George Sleeman, and chaperoned by Miss Purdy.

The malting of the grain was very interesting. The barley is first soaked in cold water, then held in a bin till heat is generated by the beginning of the sprouting, when it is spread out on the malting floors, about eight inches deep. These beds of grain have to be moved frequently to avoid the little rootlets matting. When the sprouting has continued till the starch content of the grain is converted to destrose, the barley is carried up to the drying floors and dried. The class were content with one short peep at the furnace. It was, to say the least of it, warmer than

the Dominion Sugar Factory, and that is a very warm place.

The dried malt is then cleaned, ground, and a water extraction taken, which forms the basis of the fermented liquors. Hops are added to prevent too rapid fermentation later on and to clarify the liquid. Little of this part of the process could be seen, although the class risked their necks climbing up and down ladder-like stairways to get the best view. The large fermentation tubs, with their six inches of foam, looked like the tops of very large steins.

As the party left the brewery they showed their appreciation of the kindness and courtesy of Mr. Sleeman by giving one or two Macdonald yells—and if you don't believe me, I can prove it.

—G. M. C.

Much Ado About Nothing

A Freshie would a-wooing go,
 Ahum, ahum.
 Whether the Sophs would let him or
 no,
 Ahum, ahum.
 So off he wandered every night,
 And strolled about in the soft moon-
 light.
 At a high window, a lady fair,
 Stirred his weak heart to do or dare.
 He screwed up his nerve, and threw
 her a note,
 "Come to the Athletic," was what he
 wrote.
 "Sure," she replied, "Call here to-
 night,"
 And then he was in sorry plight
 For she'd forgotten to sign her name.
 Really, it was a terrible shame.
 He came and asked for the fairest
 dame,
 But there were ten sisters who all

looked the same
 And none would say she had an-
 swered his note,
 But gazed at him dumbly—his chest
 he smote.
 He made a guess, and the guess was
 wrong,
 But the lady was willing and came
 along.
 Outside, the nine sisters were waiting
 grim,
 They laid hands on the Freshie and
 finished him!
 They pummeled and pushed him
 about in the snow;
 They washed his face till he yelled
 "Let go!"
 He ran away swearing, with scowls on
 his brow.
 He's cured of his amorous tendencies
 now.

(Continued on page xiv.)



A



Telephone Talk

There are over 500 rural telephone systems owned locally in Ontario. When one remembers that only a few years ago there was but one telephone company, and, comparatively speaking, no rural telephones in Ontario, the development has been nothing short of marvellous.

Have You A Telephone?

If not, write us and we will tell you how to proceed in order to secure telephones for your locality. We have been actively identified with the starting of the majority of municipal and local systems and are in a position to supply accurate and reliable information.



Are You Operating A Line?

If so, and you are not using our telephones, ask about our FREE TRIAL OFFER. We claim our telephones are superior in design, material and workmanship to any others on the market and are prepared to let you prove it on your own lines.

No. 3 Bulletin

Latest telephone book published free on request.

Canadian Independent Telephone Co.

Limited

18-20 DUNCAN STREET

TORONTO, CANADA

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

MUCH ADO ABOUT NOTHING

(Continued from page 390)

In Gym.

She was a youthful homemaker, and she was not tiny. She dangled from the rings and kicked her heels ineffectually in the air.

Junior—"Want a shove?"

She—"No thanks, I can get 'long alright."

Junior—"Well, don't get 'long any longer."

Overheard at the Well

"What have you got up there?"

"A box of—business."

"Well, business me down a business."

"Here, catch! Oh, you crazy business!"

"Thanks, Miss Business!"

"What did you think of the love scene in the 'Private Secretary'?"

"Pretty good, considering."

"Considering what?"

"How often it must have been rehearsed."

First Girl—"What's worse than a giraffe with a sore throat?"

Second Girl—"Give it up."

First Girl—"A centipede with corns, or a snake with a backache."

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A Nursery Rhyme for Year Sixteen.

Ye men of Year Sixteen take heed

And listen while I tell my story,
The story of a grave misdeed

Which nearly caused a battle gory.

Remember you are Freshmen only,

Bound to honor and obey;

Not to torture Sophomores lonely,

Lest you're battered into clay.

When you first came to College,

Seeds of learning here to reap,

You were meant to gain some know-
ledge,

Not to act like helpless sheep.

Discipline is good for all men;

You must bear it for a year

As we did when we were Freshmen.

'Tis a law that's just and fair.

Freshmen! You have grown too
haughty;

Remember what your mothers said

"Little boys, when they are naughty,
Must be spanked and sent to bed."

Parker—"Say, what would you think if every time you put your hands in your pockets you were to find a bunch of car tickets?"

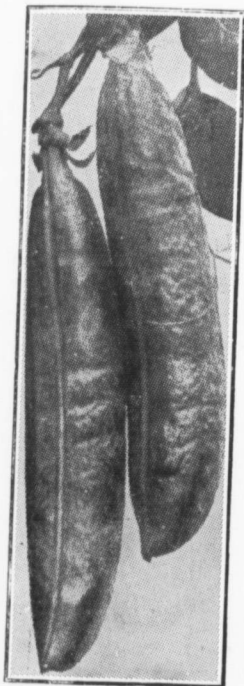
Welton — "Think! I wouldn't think—I'd know I had somebody else's trousers on."

First Soph. — "I thought your father wasn't going to send you back to College?"

Second Soph—"That's so. Dad did kick on the expense, but I threatened to stay at home and help run the farm, and he decided that a College course would be cheaper.

"You spend so much time in your room. Why don't you come out more and be sociable?"

Peter Connon—"I pay \$14.00 a month for that room."



RICHARD SEDDON PEA

FIVE FINE VEGETABLES

New Cardinal Globe Beet

The most desirable variety up to date
Lb. \$2.00, $\frac{1}{4}$ lb. 75c, oz. 25c, pkt. 10c

New Early Cabbage

COPENHAGEN MARKET.—Undoubtedly without a rival as the finest round-headed Cabbage in cultivation.

$\frac{1}{4}$ lb. \$4.00, oz. \$1.50, pkt. 10c

Montreal Musk Melon

True **DECARIE Selected Strain.**— $\frac{1}{2}$ oz. \$1.00, Pkt. (with special cultural instructions).... 25c

A New Garden Pea From New Zealand

RICHARD SEDDON.—We can say with confidence that there is no better all-round early variety than this. By express or mail, at buyer's expense, 10 lbs. \$3.00, lb. 35c; by mail, postage paid, lb. 40c, $\frac{1}{4}$ lb. 15c, pkt. 10c

A NEW EARLY TOMATO Rennie's "Ninety Day"

This northern-grown strain of Tomato is undoubtedly the very best earliest scarlet-fruited Tomato. Oz. 80c, $\frac{1}{2}$ oz. 50c, pkt. 15c

ASK FOR CATALOGUE

Address Order to Nearest Office—

RENNIE'S SEEDS

TORONTO
MONTREAL

WINNIPEG
VANCOUVER

LOCALS

McElroy (discussing hockey)—"I think it would be advisable to get a breast protector for the goal-tender."

Hare—"Well, you don't need to buy one. Get Freeborne's stiff front shirt."

After a violent discussion on botany one day, Wilson shouted out, "Fellows, don't kick up a 'rachis.'"

Creelman (the day after the Junior hop)—"What's the matter with the girls this morning? They seem all fagged out."

Culverhouse — "Lattimer was at the dance last evening."

"Say, isn't J-r-y undergoing a wonderful process of rejuvenation?"

"Well, I should say. He is 'as clay in the Potter's hands.'"

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

If it isn't an Eastman, it isn't a Kodak



IT'S Springtime. Every field and park
and woodland, every walk and ride, every
joyous outing, invites your **KODAK**

CANADIAN KODAK CO., Limited

Toronto, Canada

Catalogue free at your dealers or by mail

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GET ACQUAINTED

With the Louden line of Farm equipments. You will find the Louden line prominent in the Barns and Dairy stables of the O. A. C. You will find them in every neighborhood where good farming is done.

Louden Barn Equipments

Are distinctive—the product of 47 years' of intelligent study of farm problems. Louden equipments are the best known equipments of their kind in the world.

You should have the Louden catalogue of perfect Barn equipments to serve you as a guide and a reference book on "practical" Barn equipments.

Address your request to

THE LOUDEN MACHINERY CO.,

GUELPH, ONT.

LOCALS

Craig street is the busy corridor these days. If you go down the street any night at 7 o'clock you will hear strange and sundry noises. Opposite room 98, Kingsmill holds forth with a tin horn—down the way Winslow sings "Kill, kill, kill that bear," and Tomlinson calls out in dulcet tones, "Mauriceo," while Laidlaw calmly and serenely continues his studies.

Some changes in the College staff are proposed. Abraham of the First Year is to take charge of the Agronomy department, while Elliott, '16, will be the new Dean and will act in an advisory capacity to President Creelman. These changes will not affect Watts, '16. He will retain his important position as general supervisor of the institution.

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



R.M.S. Royal Edward R.M.S. Royal George

Atlantic Royals

ST. LAWRENCE ROUTE

THESE steamships have set a new standard for all classes of ocean travel. They are not only the fastest vessels on the British-Canadian route but are justly noted for the excellence of their service and the superiority of their accommodation.

SAILING DATES

From Montreal Steamer	From Bristol
Wed., May 14. Royal Edward.	Wed., May 25
Wed., May 28. Royal George.	Wed., June 11
Wed., June 11. Royal Edward.	Wed., June 25
Wed., June 25. Royal George.	Wed., July 9
Wed., July 9. Royal Edward.	Wed., July 21
Wed., July 21. Royal George.	Wed., Aug. 6
Wed., Aug. 6. Royal Edward.	Wed., Aug. 20

Apply to nearest agent or H. C. BOURLEAU, General Agent, 52 King Street East, Toronto.

Canadian Northern Steamships, Ltd.



LOCALS

Castro (to fair girl at the Junior dance)—“Allow me to introduce Mr. Goulding. He used to make soft cheese over at the dairy.”

Fair One—“Double cream?”

Castro (embarrassed)—“Aw. Go whey.”

A Christmas-time tragedy of Fortier's has just leaked out:

“They stood beneath the mistletoe,

He knew not what to do,

For he was only five feet tall

And she was six feet two.”

Notice to our readers—These jokes are all contributed, because the regular editor, Horrobin, is too busy fusing lately to do any work. If you don't believe this is True ax Higman.

ASPINWALL *Potato Machinery*

Efficient Spraying
Outfits for Every Purpose

*Accuracy, Simplicity, and
Durability Characterize
the Aspinwall Line*

ASPINWALL MFG. CO.
JACKSON, MICHIGAN, U.S.A.

Canadian Factory, Guelph, Ontario.

*World's Oldest and Largest
Makers of Potato Machinery*

“My butter
is always
just right”



What's The Matter With Your Butter?

Does it lose its flavor quickly?
Does it acquire a bitter taste in
a few days?

Are you receiving any
complaints about the butter not
keeping well?

Use the salt that does make
good butter every time and all
the time—

WINDSOR DAIRY SALT

It is always the same in purity
and strength. It won't cake—
dissolves evenly—and makes the
most delicious butter you ever
tasted.

The prize-winners at all the
fairs, used Windsor Dairy Salt—
that's why they won all the prizes.

72D



M. J. RUDELL, D.D.S., L.D.S.

Dentist

(On the Corner)

Over Guelph and Ontario Investment
and Savings Society Bank

PHONE 16

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CANADIAN PACIFIC

EXCURSIONS To Manitoba, Saskatchewan, Alberta

HOMESEEKERS

Low Round Trip Rates each Tuesday,
March to October inclusive

Winnipeg and Return - \$35.00

Edmonton and Return - 43.00

Other points in proportion
Return Limit two months.

TOURIST SLEEPING CARS

on all excursions. Comfortable berths, fully
equipped with bedding, can be secured at
moderate rates through local agent.

SETTLERS

For settlers travel-
ing with live stock
and effects.

SPECIAL TRAINS

Will leave Toronto

Each TUESDAY

MARCH AND APRIL

10.20 p.m.

Settlers and families
without live stock
should use

REGULAR TRAINS

Leaving Toronto

10.20 p.m. Daily

Through Colonist
and Tourist Sleepers

COLONIST CARS ON ALL TRAINS

No charge for Berths

Home Seekers' Trains Leave Toronto 10.20 p.m. during March,
April, September and October, and at 2 p.m. and
10.20 p.m. during May, June, July and August.

Through Trains Toronto to Winnipeg and West

Full particulars from any C.P.R. Agent or write M. G. Murphy,
District Passenger Agent, Toronto

J. HEFFERNAN, CITY PASS. AGENT, 32 WYNDHAM ST.



Only Double Track Railway Between Toronto and Montreal



and Toronto and other principal cities in Canada. Also Double Track
and Solid Trains between Montreal and Chicago; also between Ontario
points, New York and Philadelphia via Niagara Falls.

SMOOTH ROADBED

EQUIPMENT THE FINEST

ELECTRIC LIGHTED PULLMAN SLEEPERS

Berth Reservations and full particulars from any Grand Trunk Agent.

The Grand Trunk Pacific Railway is the shortest and quickest route between
Winnipeg-Saskatoon-Edmonton. New Fast Express Service between Winnipeg and
Regina, through the newest, most picturesque and most rapidly developing section
of Western Canada.

EXCELLENT OPPORTUNITIES FOR HOMESEEKERS

For rates, maps and all information apply to nearest Grand Trunk Agent, or
write A. E. Duff, D.P.A., G.T.Ry., Union Station, Toronto, Ontario.

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

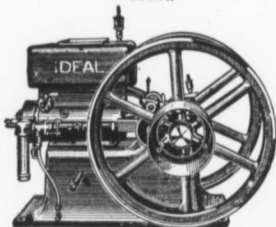
Official Calendar of the Department of Education

APRIL

1. *Returns by Clerks of Counties, Cities, Etc., of population, to Department, due.*
1. *Normal Schools open after Easter Holidays.*
15. *Reports on Night Public Schools due (Session 1912-1913).*

Brantford Gasoline Engines

We manufacture the most complete and up-to-date line 1½ to 50 H. P. Stationary, Portable and Traction



We also manufacture complete lines of

WINDMILLS

Grain Grinders
Saw Frames, Pumps
Tanks, Water Boxes
Power Spraying Outfits, etc.
GOOLD, SHAPLEY & MUIR CO.,
Limited
Brantford - Canada.



UNDERWOOD

The Underwood is used more extensively in Canada than all other makes of typewriters combined.

550 Underwoods are sold every day. The Underwood is the "aristocrat" of the typewriter world.

*United Typewriter
Co., Limited*

EVERYWHERE IN CANADA.

Head Office, Toronto.

The Sign Of A Perfect Roof

When for foundations and walls our architects are using more and more of that most enduring material, Concrete, why should anything less lasting be used for that most exposed part of the building, the roof?

In



we offer a roofing made of two indestructible materials, Portland Cement and Asbestos, in the form best adapted for roofing.

These shingles are formed between steel plates, under enormous pressure, which makes them very dense and absolutely waterproof. At the same time the interwoven Asbestos fibre gives them elasticity.

They are proof against extremes of temperature and even fire, and they actually grow harder and tougher with exposure.

Made in Newport Grey, Indian Red, and Blue Black. Write for Booklet G. R. telling all about them.

**Asbestos Manufacturing Co.,
Limited**

Office: E. T. Bank Bldg., Montreal
Factory: Lachine, P.Q., near Montreal

The Royal Military College of Canada

THERE are few national institutions of more value and interest to the country than the Royal Military College of Canada. Notwithstanding this, its object and the work it is accomplishing are not sufficiently understood by the general public.

The College is a Government Institution, designed primarily for the purpose of giving instruction in all branches of military science to cadets and officers of the Canadian Militia. In fact, it corresponds to Woolwich and Sandhurst.

The Commandant and military instructors are all officers on the active list of the Imperial army, lent for the purpose, and there is in addition a complete staff of professors for the civil subjects which form such an important part of the college course. Medical attendance is also provided.

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

The course includes a thorough grounding in Mathematics, Civil Engineering, Surveying, Physics, Chemistry, French and English.

The strict discipline maintained at the College is one of the most valuable features of the course, and, in addition, the constant practice of gymnastics, drills and outdoor exercises of all kinds, ensures health and excellent physical condition.

Commissions in all branches of the Imperial service and Canadian Permanent Force are offered annually.

The diploma of graduation is considered by the authorities conducting the examination for Dominion Land Surveyor to be equivalent to a university degree, and by the Regulations of the Law Society of Ontario, it obtains the same exemptions as a B.A. degree.

The length of the course is three years, in three terms of 9½ months each.

The total cost of the course, including board, uniform, instructional material, and all extras, is about \$800.

The annual competitive examination for admission to the College, takes place in May of each year, at the headquarters of the several military districts.

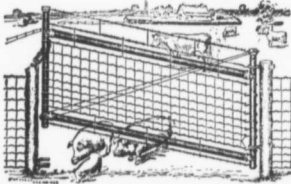
For full particulars regarding this examination and for any other information, application should be made to the Secretary of the Militant Council, Ottawa, Ont.; or to the Commandant, Royal Military College, Kingston, Ont.

H.Q. 94—5.

9—09.

APRIL, 1913

IT SHOULD interest all O. A. C. students, their parents and their friends, to know that—



This Is The Gate

which was declared to be THE IDEAL GATE by those who entered the recent "Farm Gate" Competition.

The old-fashioned wooden gate was declared to be a thing of the past on the modern farm—a necessary thing in the pioneer days of farming, cheap at the beginning, perhaps, but troublesome always, and expensive in the long run.

Among iron or steel Gates, the ideal Gate was declared to be one which (1) will raise (as shown in the illustration) to let small stock through, yet keeping back large stock; (2) can be adjusted to lift over snow in winter; (3) will not sag, bend, break, burn, blown down, or rot; (4) is light. The competitors (with but a single exception) also declared that the only Gate which to their knowledge met the requirements of their ideal was the

CLAY GATE

Remembering that O. A. C. students represent the most intelligent and enlightened thought on matters pertaining to farming, this judgment of theirs is notable.

The \$5.00 prize in connection with this Competition has been awarded to—

Mr. G. J. Jenkins.

We congratulate Mr. Jenkins on the paper which he submitted, and also all the other competitors, including the student who failed to see in the Clay Gate the realization of his ideal.

Any student of the O. A. C. who has not investigated the "Clay" Gate is invited to send to us for illustrated circular descriptive of the Clay Gate of which 30,000 were sold in 1912.

THE CANADIAN GATE CO., LTD.,
74 Morris Street - GUELPH, ONT.

This Journal is printed on
**Reliance Coated
Book**

Manufactured under special
formula exclusively of

**THE BUNTIN REID
COMPANY**

13 Colborne Street,
TORONTO

We make a specialty of all
grades of paper for cata-
logues and fine printing
Correspondence solicited.

A Fortune in Chicks

One Man and
His Son Made
\$12,000
In One Year
With Poultry



You will want to read his letter telling how it was done. And best of all any one who will follow the same simple practical rules will be sure to make big money with poultry. Every one who keeps poultry or who is thinking of starting in this business should have a copy of this

112 Page Book--Free

Nothing like it has ever been published before. It is filled from cover to cover with splendid illustrations and bristles with money-making—money-saving facts. You will be interested in the articles by Prof. W. R. Graham of Guelph, Ontario, "Hatching and Rearing" and "The Automatic Henhouse." Other subjects discussed are "How to Select Layers," "Which Breed is Best," "How to Treat Diseases." Just think of it—75 of the 112 pages contain no advertising—just helpful information from the greatest authorities on poultry raising. The book will save you a thousand mistakes and make poultry raising profitable if you will follow the advice it gives.

Write Your Name on a Postal and mail it to us at once. We will send the complete book free and postpaid. You will want to know about the new **FRASER STATE INCUBATOR** with Red Top—into the **FRASER STATE UNIVERSAL ROVER BROODERS** which you can make at home and save money. All leading agricultural colleges and experiment stations endorse Fraser State Incubators because they "hatch chicks that live." Write for free book. **Ship your eggs to us and get highest market prices.**

Gunn, Langlois & Co., Ltd.
Box Montreal, Canada

Man'rs in Canada of the Famous Fraser State Incubators.

Keep Your Stock in Good Condition By Using International Preparations

Over two millions of practical farmers and stock breeders use the preparations named below, with complete satisfaction. Every package, can or bottle, carries our ironclad guarantee of money back if it fails.

- International Stock Food**—25c, 50c and \$1.00 packages, and 25-lb. pails at \$3.75.
- International Poultry Food**—25c, 50c and \$1.00 packages, and 25-lb. pails at \$3.75.
- International Heave Remedy**—50c per package.
- International Distemper Remedy**—50c per package.
- International Colic Remedy**—50c and \$1.00 per bottle.
- Silver Pine Healing Oil**—25c, 50c and \$1.00 per bottle.
- International Antiseptic Healing Powder**—25c and 50c per box.
- International White Liniment**—50c per bottle.
- International Hoof Ointment**—1½ lbs., \$1.00; 3 lbs., \$2.00.
- International Honey Tar Foot Remedy**—50c and \$1.00 per can.
- International Pheno-Chloro**—25c, 50c, \$1.00 and \$3.00 per can.
- Dan Patch Stable Disinfectant**—\$2.00 per gallon.
- International Sheep Dip**—1 gal., \$1.50; 5 gal., \$6.75; 10 gal., \$12.50; 25 gal., \$27.50; 50 gal., \$50.00.
- International Cattle Dip**—Same prices as above.
- International Hog Dip**—Same prices as above.
- International Louse Killer**—25c per box.
- International Louse Paint**—35c per qt.; 60c per ½ gal.; \$1.00 per gal.
- International Gape Remedy**—50c per bottle.
- International Calf Meal**—25-lb. and 50-lb. bags.
- International Worm Powder**—50c per package.
- International Gopher Poison**—50c per box.
- International Compound Absorbent**—\$2.00 per bottle.
- International Gall Heal**—25c and 50c per box.
- International Harness Soap**—1 lb., 25c; 2 lbs., 50c; 5 lbs., \$1.00.
- International Quick Liquid Blister**—\$3.00 per bottle.

For Sale by Dealers Everywhere. Write for a Free Copy of our \$3,000.00 Stock Book.

INTERNATIONAL STOCK FOOD COMPANY, Limited, TORONTO, ONT.

The Auto Way The Auto Press

Feeds, Prints, Counts, Checks, Stacks and Delivers Automatically
Three to Six Thousand Sheets an Hour

Perfect Register

*This Means—Your Work Done Quicker Than Ever,
Better Than Ever*

And—What Does This Mean to You?

You Are Invited to CALL AND SEE This Automatic Mechanical Wonder in Action

Advertiser Job Dept.

Long Distance Phone 3670

LONDON, CANADA

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Cheap and Rapid Ditching



Boring the Holes—Short Work



The Explosion Digs the Ditch



The Ditch at Work

It is estimated that draining the farm will double the crop profits. All farm crops require for better growth both air and water in the soil. The water is easy to obtain. The air equally necessary can only be obtained by providing thorough drainage to a depth of two feet or more. The farmer's drainage problem is largely one of labor cost. All ditches require for satisfactory drainage a large amount of labor, which can be obtained only at more than usual wages.

CXL STUMPING POWDER DIGS DITCHES QUICKLY AND SAFELY

When properly used CXL Stumping will excavate ditches, entirely clearing them out to grade, giving the sides a right slope and spreading the earth excavated over the land some distance away. Such ditches are for free removal of water from low-lying areas, or to provide free outlet for tile drains. In such cases no further work is required in straightening out the ditch when the work is properly done.

The cost of CXL Stumping, plus the cost of using it, is only a small fraction of ordinary labor cost for ditching. All that is necessary is to observe the rules for the use of CXL Stumping.

Some part of your farm requires drainage, and you should obtain our large and complete book, which explains the use of this wonderful development in explosives. Also used for clearing land of stumps and boulders, sub-soiling, tree planting and breaking up hard pan.

Don't forget to write to-day for our Book. It is free and contains valuable information.

CANADIAN EXPLOSIVES, LTD.
Montreal, Que. Victoria, B. C.

HIS GIFT.

A young man was deeply in love with a beautiful girl. One day she told him that the next day would be her birthday, and he laughingly said that he would send her a bunch of roses, one for each year of her life.

That evening he wrote to his florist, ordering twenty-four roses to be sent the young woman on the first delivery the next day.

The proprietor of the flower shop, looking over the mail in the morning, saw the order and said to the foreman:

"John, here's an order from young Mr. Flint for twenty-four roses. He's a mighty good customer, so put in a dozen extra ones."

And the young man never knew what made the girl so angry with him.

ONTARIO VETERINARY COLLEGE

Affiliated with the University of Toronto, and under the control of the Department of Agriculture of Ontario Infirmary for Sick Animals at the College

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

N. B.—Calendar on application.



ABSORBINE
Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from any Bruise or Strain; Cures Spavin Lameness, Allays Pain. Does not blister, remove the hair or lay up the horse. \$2.00 a bottle, delivered. Book 1 E. free. **ABSORBINE, J.R.**, liniment for manking. For Synovitis, Strains, Gouty or Rheumatic Deposits, Swollen, Painful Varicose Veins. Allays Pain. Will tell you more if you write. \$1 and \$2 per bottle at dealers or delivered. Manufactured only by **W. F. YOUNG, P.O.F., 177 Lyman's Bldg., Montreal, C.**

Edmonton, Alta.,

Nov. 19, 1907.

Dear Sir:—

I have used Absorbine on a bog spavin on my two-year-old colt and have cleared it off.

Yours truly,

R. M. McDERMOTT.

A HIGH GRADE ESTABLISHMENT
FOR THE

PRINTING

OF CATALOGS, BOOKS and
COMMERCIAL JOB WORK

Society and College
Work a Specialty

R. G. McLEAN

26-34 Lombard Street

TORONTO, - ONTARIO

Telephone, Main 637, 638.

DRILLS YOU CAN DEPEND ON

WHEN the time comes for seeding, it's a great source of satisfaction to have a Drill which you know will sow your grain as it should be sown.

Massey-Harris Drills

are famous for uniformity of sowing in any desired quantity and at any depth required—the seed is not bruised or crushed and is well covered. The Massey-Harris Line of Drills is complete—many styles and sizes, but Reliability is the Keynote of all.

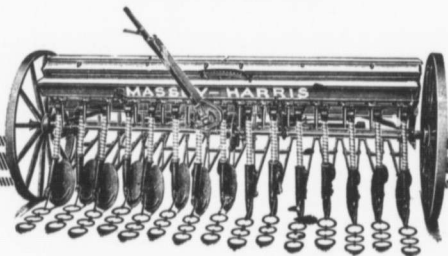
Massey-Harris Co., Limited.

Head Offices—TORONTO, CANADA.

— Branches at —

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

— Agencies Everywhere —



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**Peerless
Guaranteed Fencing**

Strongly made and closely spaced—making it a complete barrier against large animals as well as small poultry. Top and bottom wires No. 9—intermediates No. 12 wire—made by the Open Hearth process which time and other tests have proven to be the best material made for the manufacture of wire fencing. Send for literature. Ask about our form and ornamental fencing. Agents nearly everywhere. Live agents wanted in unassigned territory.

The Banwell-Hoxie Wire Fence Co., Ltd. Winnipeg, Man., Hamilton, Ont.

THE MERMAID

We'll build us a hut of the cocoa-nut
 And live on bananas and peaches;
 The apple-tree bark, that grows in the park,
 Shall furnish your frocks and my breeches.

O fly with me o'er the raging sea,
 Where the winds and the cyclones blow.
 I'll dye my head and my whiskers red
 By the light of the firefly's glow.

The gay gazelles with their frisky tails
 Shall dance by the moon's pale light,
 While the stars look down with reproving frown
 On the frivolous, mirthful sight.

And there we'll live, and there we'll die,
 And there we'll be buried together;
 And we'll live on plum-pudding and cocoanut pie
 In the sultry and freezing weather.

(Ye Gods!—Ed.)



**PAGE WHITE FENCES—Get
 One This Year and Beautify Your Place**

But get the best. Page Co. originated this fence. Tough, durable, high-carbon, steel wire (heavily galvanized, and painted white or green) makes splendid fence for homes, churches, schools, cemeteries, etc. In rolls, any length or height—easy to erect. Booklet and prices from

Page Wire Fence Co., Ltd.

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

To the O.A.C. Old Boys

When leaving college also leave your subscription for THE GUELPH WEEKLY MERCURY—only \$1.00 a year in advance.

The Mercury will keep you in touch with the friends and institutions you have left behind. This medium is noted for its agricultural news and the large volume of valuable farm advertising carried.

SWORN WEEKLY MERCURY CIRCULATION, 5,700

Come to The Mercury's Job Printing Department for Your Job Work. Visiting Cards a Specialty.

The Evening Mercury has a sworn circulation of 2,700.

J. I. McINTOSH, Publisher and Proprietor.



We Manufacture

Peep Sights

For use on home-made draining levels, as designed by Professor W. H. Day

H. Occomore & Co.
GUELPH, ONT.

Promptness

A trial order will convince you of the class of work we do

Ladies' and Gents' Clothes Pressed, Cleaned and Repaired

—AT—

STEWART & WILSON

19-21 Quebec St., GUELPH.

Phone 456. Above R. J. Stewart, Tailor

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

Young Men Stay in Canada

Advise Your Friends to Come to
CANADA

Nowhere in the world are to be found so many and such
good openings for a career in

Agriculture

FRUIT-GROWING, DAIRYING—WHAT YOU WILL!

The cry now-a-days is "BACK TO THE LAND," and
CANADA has got the LAND

The day of CANADA'S PROSPERITY is the day of

Your Opportunity

Do not neglect it. Think this over.
You can never do as well anywhere else.

Tell your friends to apply for further information
To

W. D. SCOTT, Superintendent of Immigration, Ottawa
Or to

J. OBED SMITH, 11-12 Charing Cross, London, S. W., Eng.

DE LAVAL

CREAM SEPARATORS

TIME TESTED

If a member of your family were dangerously ill you wouldn't think of calling in an inexperienced doctor?

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Why not use the same care and common sense in your selection of a cream separator?

Every little while you hear of some new cream separator, claiming to be a "world beater" and just as good as the De Laval, but a little cheaper.

These "mushroom" machines stay in the limelight only until they are "found wanting" by the users and in a short time drop out of sight.

It takes years of experience to build a "good" cream separator. More than 30 years of experiments and experience have made the De Laval pre-eminently the best machine on the market for the separation of cream from milk.



Even were other concerns not prevented by the De Laval patents from making a machine exactly like the De Laval they could not build as good a machine as the De Laval, because they all lack the De Laval manufacturing experience and organization.

If you buy a De Laval you run no risk of dissatisfaction or loss. It's time tested and time proven. Why experiment? Why take chances with an inferior machine when you KNOW that the De Laval is the **BEST MACHINE FOR YOU TO BUY?**

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