

Vol. XX.

No. 3

The
O. N. C.
Review

DECEMBER

1907

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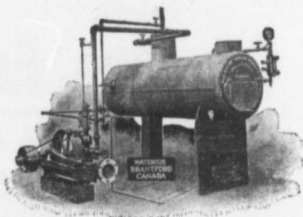
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EDUCATIONAL CALENDAR

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|---|--|
| <p>18. Provincial Normal Schools close. (First term).</p> <p>19. Last day for notice of formation of new school sections to be posted by Township Clerks.</p> <p>20. High Schools first term, and Public and Separate Schools close.</p> <p>25. Christmas Day (Wednesday).
High School Treasurers to receive all moneys collected for permanent improvements.
New Schools and alterations of School boundaries go into operation or take effect.
Bylaw for disestablishment of Township Boards takes effect.</p> | <p>26. Annual meetings of supporters of Public and Separate Schools.</p> <p>20. Reports of Principals of County Model Schools to Department, due. Reports of Boards of Examiners on third-class Professional Examination, to Department, due.</p> <p>31. Protestant Separate School Trustees to transmit to County Inspectors names and attendance during the last preceding six months.
Trustees' Reports to Truant Officer, due.
Auditors' Reports of cities, towns and incorporated villages to be published by Trustees.</p> |
|---|--|

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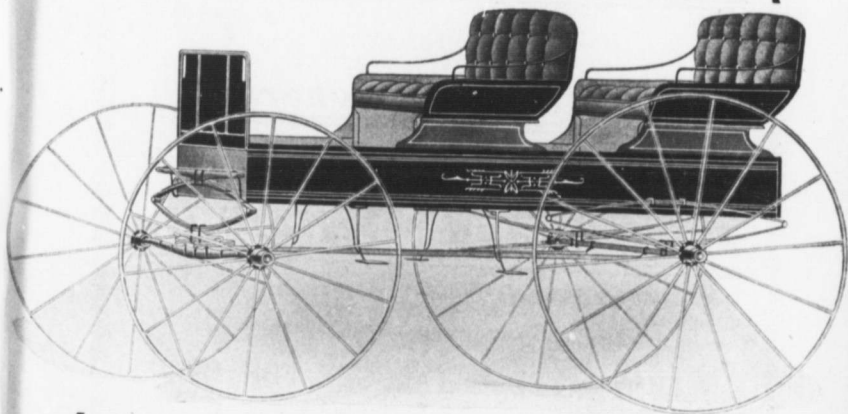
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THE DIGNITY OF A CALLING IS ITS UTILITY.

VOL. XX.

DECEMBER, 1907.

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Some Comments on Current Tendencies.

By W. C. GOOD, B.A.

IN most popular inquiries concerning economic matters there is a tendency to direct the attention wholly to details, phenomena, and the ramifications of effect, instead of to general principles of a fundamental character. A conspicuous case in point is the still common fallacy which justifies the luxury of the rich on the plea that it "gives employment" to the poor. The immediate consequences of the giving of employment to certain individuals are easily seen, whereas the ultimate consequences to society (including the individuals in question) are by no means so easily perceived. Add to this the influence of self-interest, and the prevalence of individualistic conceptions, and one can easily understand how widespread and potent are narrow views on economics. Just at present what is called the financial or monetary stringency occupies a prominent position in the newspapers, and is a disturbing factor in commerce. The situation is too complicated to warrant an

attempt to analyse it in a short article. Rather is it appropriate to establish some large positive truths, which may be used as criteria for comparison, or standards against which to measure or examine any set of conditions or phenomena that co-exist.

Roughly speaking the popular thinking of one generation is determined by the advanced thinking of the preceding generation; and this is largely the case in economic science. Professor Ingram, in his "History of Political Economy," after speaking of the way in which economic investigation had fallen into the hands of lawyers and men of letters, who had had no sound preparation in the sciences of inorganic and vital nature, says:

"The radical vice of this unscientific character of Political Economy seems to lie in the too individual and subjective aspect under which it has been treated. Wealth having been conceived as that which satisfies desires, the definitely determinable qualities

possessed by those objects of supplying physical energy, and improving the physiological constitution, are left out of account. Everything is gauged by the standard of subjective notions and desires. All desires are viewed as equally legitimate, and all that satisfies our desires as equally wealth. Value being regarded as the result of a purely mental appreciation, the social value of things in the sense of their objective utility, which is often scientifically measurable, is passed over, and the ratio of exchange is exclusively considered. The truth is that at the bottom of all economic investigation must lie the idea of the destination of wealth for the maintenance and evolution of society."

John Ruskin has given forcible expression to the same thought in the following words, that will bear repeating many times: "The assumption which lies at the root of nearly all erroneous reasoning on political economy—namely, that its object is to accumulate money or exchangeable property—may be shown in a few words to be without foundation. For no economist would admit national economy to be legitimate which proposed to itself only the building of a pyramid of gold. He would declare the gold to be wasted, were it to remain in the monumental form, and would say it ought to be employed. But to what end? Either it must be used only to gain more gold, and build a larger pyramid, or for some purpose other than the gaining of gold. And this purpose, however at first apprehended, will be found to resolve itself finally into the service of man—that is to say, the extension, defence, or comfort of his life. The golden pyramid may, perhaps, be providently

built; perhaps improvidently; but the wisdom or folly of the accumulation can only be determined by our having first clearly stated the aim of all economy, namely, the extension of life."

This, then, is the first large truth which needs to be recognized; and, much as it is ignored in practice, it needs no demonstration. It needs only to be stated to command assent. All economic inquiries should begin with Consumption—not with Production. All material wealth is an instrumentality, not a finality. The end of production is consumption, and the end of consumption the growth and development of man, bodily, mentally, morally. The ultimate and vital question is always the *effect* which commodities have upon the consumer, never the quantity of those commodities, and sometimes not even the kind. Let this be never lost sight of.

Another basic truth in Economics, just as simple, just as axiomatic, just as little recognised in practice as the foregoing, is this: That labor, and labor alone, applied to the various natural resources that lie scattered about us, can produce material wealth. No "commercial arrangements," no briskness of trade, no enhancement of prices or wages have any real influence. Your neighbor can be cheated, but Nature cannot. She calmly asks, what have you done? Have you worked wisely or foolishly? By the one you shall live; by the other you shall die. To thoughtless persons it seems quite different. They think that they can get a living without working. They cannot; they can only steal from someone else who does work. The means of life are produced only by some one's toil; but, of course,

being once produced, people may variously gather, waste, control or distribute them. It is in the complications that arise from the distribution and consumption of commodities that the mind tends to become confused, and needs to be recalled to the fundamental verities.

It is sufficient for our present purposes to have thus stated these two truths: That labor is one *essential* factor in the production of material wealth, and that the function of such material wealth is in the service of man, and in the evolution of his life. Strange as it may seem, such obviously simple truths are daily ignored in the social and commercial life of today; and for this reason it is fitting to apply these permanent standards to current practice. Let us try to fit them to some present conditions.

I have noticed on the front page of the *Farmers' Advocate* the following advertisement, typical of hundreds flooding our journals:

"Investments in Western lands and city properties are as safe as ever if placed properly. We have for sale 'Broder's annex' to Regina, where one man invested \$150 last summer and cleared \$17,000. We won't guarantee to make you this much, but chances are just as good as ever, etc."

Now, if the reader will ask himself for what service or contribution to society the individual alluded to was given \$17,000, he will realize that the transaction was almost identical with those conducted by lotteries. No just equivalent was given, and this very fact is the bait which the land agency holds out to prospective investors. The practice of speculating in lands, so terribly prevalent in the West of late,

is literally thieving, although something may be said to mitigate, and much is said to conceal its real character. Even those men who hold land adjacent to C. P. R. land grants will grumble at the railway company's reaping all the profit from the increase in value due to settlement, while they are unconscious, apparently, that on a small scale they are similarly appropriating the "unearned increment." Men who are investing in lands for speculation and not for use are either conscious thieves, or are blind to the truth that wealth is produced only by labor.

Similarly blind or dishonest are those trades unions who are clamoring for high wages and short working hours, irrespective of what is done during working hours. To get much and give little absolutely necessitates someone else's getting little and giving much; and, as the latter party is pretty sure to resent such treatment sooner or later, and demand a more equitable share of what he produces, the first party soon finds that he can buy less than formerly with his high wages. To reduce industrial efficiency is ultimately to reduce wages, for wages are ultimately measured, not in dollars and cents, but in the commodities which are bought for consumption; and many a man who, under the protection of a union, or otherwise, contrives to give little and get much soon finds out that the dollar with which he goes to buy bread and butter will not procure as much as formerly. He is too obtuse, possibly, to understand the suicidal nature of his practice, but Nature is not to be cheated, and if he and his fellow tradesmen are not efficient workers, and if other workers are similarly

inefficient, then less will be done, fewer commodities will be produced, and no matter how much money be got for a day's work, it can only buy what has been produced. *Society is really paid for with what it makes, and money is but a means of exchange.*

What has been said must not be taken as a generally adverse criticism of trades unions. In so far as they have insisted on juster distribution they have done well; and in so far as they have assisted in developing industrial efficiency among their members, they have also done well. But their efforts have often resulted in the sheltering of incompetents, in the lowering of average industrial efficiency, and have thus been suicidal.

Speaking of industrial efficiency, it might be appropriate to inquire as to what determines it. Material wealth results from the conjunction of two factors, often concisely termed *Land* and *Labor*; and labor may be more or less efficient according to the strength, endurance, activity, intelligence, patience and sobriety of the laborer; and when we come to consider what makes the higher kinds of labor efficient—labor in church and state and school—then the manifold and essentially spiritual nature of human life becomes increasingly impressive. It would be an interesting inquiry for economists,—that of determining how far certain qualities of head and heart, the affections, the virtues, the religious life, affects industrial efficiency,—how far, in fact, the primary seeking of the kingdom of God and his righteousness is destined to add "all these things," and at the same time to qualify the users to make the most of them.

It is a peculiarity of human society that its members have an unlimited

power of consumption. In fact a whole nation may be made tributary to tickle the palate and satisfy the vanity of a single man or woman. Millions are enslaved to procure the means to satisfy the desires of a few hundreds. Solomon so taxed the Hebrews to secure the magnificence of an Oriental court that they rebelled under his son Rehoboam. William the Norman evicted hundreds of Saxon peasants to obtain a forest preserve in which to indulge his hunting propensities. Louis XIV. paved the way for the French Revolution by crushing the poor of his kingdom so that he and his court might live in luxury. And nowadays, while the contrasts between rich and poor are not so striking as in the past, the luxurious and extravagant modes of living adopted by some of our richer classes have exactly the same economic significance as they have ever had. A New York man spends thousands of dollars in giving a banquet to his friends. The money commands or directs labor. Labor applied produces commodities or renders personal service, both of which are designed to upbuild man's life. Measured thus how small in proportion to the expenditure is the net gain? We have, with great effort, provided palace cars, fast lines of steamships, and luxurious hotels, for the satisfaction of the travelling public. How far do these contribute to the evolution of a robust manhood and womanhood amongst us, and how far do they succeed in merely pampering enervated specimens of humanity? Or consider the various wars that have taken place. How far has the consumption of material wealth therein resulted in the extension and elevation of human life? Rather has it usually resulted in the destruction and

degradation of life, Canadians furnished both men, horses and food to be consumed in the late South African war. Englishmen gave more. What great contribution to the upbuilding of human life did this enormous expenditure make? Or consider one of the industries whose control seems to have been one of the real objects of the Boer War—that of diamond mining. Diamonds are commodities produced, or found, by great effort. They have a great "exchange value." But what of their "objective utility?" As ordinarily used how far do they contribute to the maintenance and evolution of society? Do they feed, clothe, protect, teach, inspire? If so be, then, that the wealth represented by hundreds of millions of dollars was consumed in order to control an industry whose social or objective utility is questionable, how natural that grave consequences should follow! Writing recently from Pretoria to the London Daily Mail, Mr. Frederick Walker says: "The country is heavily in debt. . . . The losses from shrinkage in market values of land, houses, businesses, shares, railways, and property of every description is already appalling, while the anguish of concealed poverty—proud men watching their children eat food that Kaffirs decline—is such that 'any stony heart would rue thereat.' It can scarcely be said any longer that trade is bad; trade has almost ceased to exist.

"Doubtless many are wondering what are the causes for this deplorable condition, and many are assigning any causes except the real one, namely, the wholesale destruction of the possibilities of life. If war devastates farms and disorganizes commerce one may expect the natural

consequences to follow. Nature is a stern teacher, and people are blind and slow to learn; but the logic of events will by and by make its impression. The French aristocracy in the 18th century doubtless congratulated themselves that they were "giving employment" to their poorer fellow countrymen. Unfortunately, however, this employment provided, in scant measure, for the real needs of the people. Consequently the starving, inarticulate, barefooted peasantry, stirred beyond endurance by dire necessity, and dimly perceiving the cause of their woes, killed their former lords and tanned their skins to make shoes for themselves. "History is Philosophy teaching by experience."

Of course the shedding of blood has been, and may yet be, necessary to right wrongs; and vicarious sacrifice is a law of human existence. But the attempted justification of wars, on the plea that they increase trade, provide markets and enhance prices, is a criminal fallacy. Moreover, we shall surely reap a baneful harvest if we try to cultivate the easily quickened military instincts among our school boys. Instead of teaching them how to shoot their neighbors rather teach them how to root out the enemies in our midst: there is plenty of scope for bravery and self-sacrifice in Canadian life.

A public question in which shallow thinking is dominant is that of Tariffs. Since the origin of trade there have been two co-existing and antagonistic opinions regarding the Freedom of Trade. One opinion regards the division of labor, with its necessity for exchange, as a divinely ordered plan, whereby the most may be had out of the various resources of the earth.

Consequently it tries to facilitate trade by the building of ships and railways, roads and canals, and by the reduction of all natural obstacles. The other opinion judges it beneficial to restrict exchange in order to prevent competition. Consequently it "protects home industry" by the erection of an artificial barrier often much greater than any of those existing naturally. Strange to say these two opinions co-exist in the same individual without apparent conflict, and, while great efforts are made to reduce the ocean and railway freight rates on English cloth coming into Canada, its entrance is retarded by a customs duty much larger on the whole than the cost of transportation. I know that much can be justly said in defence of tariffs, justifying their adoption as temporary expedients and necessary evils, leaving out of account altogether the irrational clap-trap of politicians and the obviously selfish claims of individuals and classes for special privileges. But the reader should ask himself whether tariffs are likely to be permanently useful; whether there is not some better system of taxation; whether, if we were so disposed, we could not get along much more profitably without them. Much, nay everything, lies in peoples' minds. We say that we cannot dispense with war. It is not true: we can dispense with it just as soon as we want to do so. Similarly, if we once get convinced that there is a better way than tariffs we shall find that way. I do not here argue the case, though my own opinion cannot but be evident: I merely state it and ask for broad-minded and unselfish application of basic truths thereto.

Another question somewhat important in Canadian life at present is that of mining in its relation to the public welfare. Mining, as it has been conducted hitherto, is a business in which the element of "luck" is large, and the element of labor small. I do not suppose that the average income from mining is out of proportion to the average effort put forth. As in the case of speculating in lands and stocks, of lotteries and all similar institutions, there is a sort of average balance. The peculiarity of these businesses is that a few are "lucky" while the many are "unlucky." The remarkable success of the few is the incentive or bait to the many. Now, referring to our first basic truth that material wealth is designed for the maintenance and evolution of human life, it is open to question the wisdom of allowing such unequal degrees of control over commodities as are made possible by private or company mining. It may be taken as pretty largely true that one who by small effort gets control over a great quantity of the means of life is not so apt to use those means rightly, as one whose income is more equitably proportioned to his labor. Where rich mining property has been exploited by unrestricted private enterprise, the social and moral consequences have been pernicious, as has been abundantly proven to us by the history of Montana during the last thirty years. So it seems wise for the State to interfere in this business, and provide for a partial equalization of labor and income. Unless the State were to assume complete control and operation of the industry it would hardly do to remove wholly the incentive of private gain, but a progressive royalty, discreetly applied, diminishes the evils

connected with the business without crippling a legitimate industry. In Ontario we may be thankful that our Provincial Government has had the good sense to make a move in the right direction.

This article is already long, and I will conclude by expressing the hope

that readers of the Review who do take, or may have to take, more or less interest in Canadian public life will seek out and find basic truths, to which, amid the storms and waves and eddyings of opinion, they may anchor fast, in the sure and steadfast hope of thus avoiding national shipwreck.

THE MOON.

Oh thou disperser of the midnight gloom,
Which dost thy borrowed light so freely shed
Upon the earth, which other light would lack
Didst thou not from the depth of evening skies
Shine forth and boldly to the world proclaim
That thou, the herald of the coming morn
Will stand supreme, the guardian of the night,
And lift the scales of darkness from our eyes;
Oh, thou fair Atom of this Universe,
What is it keeps thee in thy distant dome?
Why dost thou journey on from year to year?
Emitting borrowed light to other lands,
Which dost thy courtesy so ill repay?
Thyself being dead, what canst thou hope to gain,
Thine own hope lost; no more to be regained?
Is it that thou whose dark mysterious paths
Untrodden, save by thee, doth still pursue
To light humanity on his dark ways
Through mire and pitfalls which beset his path?
Or dost thou hope by service long and true,
Extending through the distant ages dark,
Thou wilt thine own lost living state regain?
'Tis vain. Thy life for ever more hath fled
As ours soon will flee. Not long 'twill be
Before our present light is dim
And in the future only shall be known
From light reflected from the life we led,
Before life's feeble fluttering spark was fled.

W. C. Owen, '05.

A Glimpse of the West Coast.

By H. R. MACMILLAN.

THE coast, more than any other part of Canada appealed to me with an irresistible lure. In fact the only circumstance which had enabled me to so long resist that lure had been a glaring lack of funds. What little I had been able to read concerning the country had filled me with vague ideas not one of which I could crystalize into a mental picture. The word Coast, signifying shadowy mists, salt breezes, rocks and waves, was the most concrete conception I could conjure up; of course I knew there were forests, inside passages, islands, mines and mountains, but beyond that knowledge my ideas extended no farther.

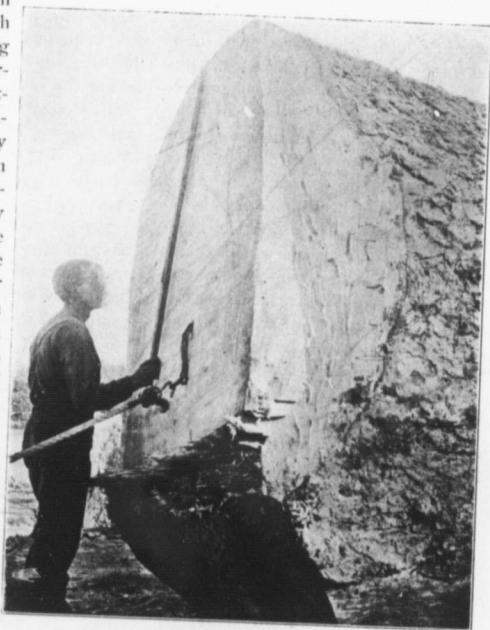
So it was with great eagerness I embraced an opportunity to spend a summer with R. D. Craig, timber cruising in that unknown region. Here would be a golden opportunity to become acquainted with the character of the country, minutely and broadly, to learn the lives of its inhabitants and lastly, to satisfy myself that it was the land of opportunity such as it has always been reported.

Upon leaving Vancouver, which we found to be a beautiful city, with sea, mountains, or forest on every side, we proceeded up the Coast in a gasoline launch. To one whose experience of Canadian topography has been confined to the territory east of the Rockies such a trip was a constant surprise necessitating a complete revision of ideas. The mainland, here

consisting of the main axis of the Coast, mountains rise bluff and sheer from the water's edge. There is but little shore as we Easterners understand it. This is emphasized when anchorage is desired, it is often necessary to go miles before water can be found less than two hundred feet deep, even within reaching distance of the cliffs. Characteristic of the British Columbia coast are the drowned glacial valleys which constitute the fiords or inlets. These pathways of the ancient glacier extend deep, tortuous, narrow, and gloomy, fifteen to thirty miles back from the sea. As our quest was timber, and to search it we must seek the "drains" or gulches in the mountains, or the narrow valleys of the great rivers draining the coast range, we travelled up several of the inlets. The first Jarvis Inlet, was a revelation. Here we discovered that with regard to western geography, the phenomena of tides and precipitation our early education had been neglected. For half a day we gruffed up this arm of the sea, every few miles bringing us to a turn which at a distance appeared always the end, and yet the end was not in sight; still it persisted between its mountain walls, over one hundred fathoms deep to the very edge. At the upper end, where the mountains were highest, a small branch was indicated on the map, Princess Louise Inlet, and flowing into this a large river was shown. As it happened we arrived at the entrance to this basin at full

tide and proceeded easy—through the narrow, rocky passage. It had been raining a downpour all day and now was dusk. The mountains on either hand, not more than one-quarter of a mile away were from 4,000 to 6,000 feet high and from their dripping faces leaped innumerable cascades. As darkness came on our engine stopped, thereby proclaiming its relation to its cousin, the automobile. Immediately a leak in the hull of the boat began to increase the flood on the floor which had dripped in from various leaks in the cabin; and, as if to make a certainty of our uncertainty, the tide began to set out towards the peculiar jagged rocks we had seen in the entrance to the inlet. We knew that this tide would soon be running six or seven miles an hour through that passage, making it fatal for any small drifting boat such as ours. Accordingly we fearfully manned the sweeps, organized a bucket brigade and detailed an electrician to start the sparking mechanism of the engine. These duties distributed amongst a crew of four men required action of everyone. After the galley slaves had pulled half an hour, the bucket brigade had baled the same length of time and the electrician had worked out all the permutations and

combinations possible with a dozen wires it needed only a brief examination to show that no one had made any progress, the boat was in the same place as before, the water was nearly



This Sitka Spruce was 11 feet in diameter.
MERE MAN AND A TREE.

as deep on the floor and the engine still balked. There was no use in pulling for shore, where precipices forbade a landing, so we cast the anchors overboard where they hung listlessly in the seven hundred feet of water. Then energies were concentrated on the engine and the pumps, the latter represented by a battered saucepan and a tin dipper. This time the boat was emptied, though the engine still maintained

a dignified silence — and tired, everyone, after an envious glance at the rocky shore through the pouring rain, turned in. It was the middle of the night, we were all dreaming of houses founded upon rocks, and quiet country towns, when some uneasy sleeper sounded the alarm that there was a foot of water on the floor. Not much more water was needed, consequently there ensued a period of frenzied baling, during which the engineer discovered that he had forgotten to shut off the engine pump, and as a result water had been siphoning in all night through a three-quarter inch pipe. Thus one lesson was learned, and we began to pity the idle rich with their automobile troubles. In the morning the engine, without further complaint, started to go. Yet one more disappointment awaited us—we hurriedly hunted up the river, which

from the exceeding prominence given it on the map had excited our hopes. We found that it was a fair sized stream running into the sea over a ridge four thousand feet high, and that it had its source not in some great valley where we might stake timber but in the eternal snows. It was to this river we directed inquiring rivals during the rest of the summer.

These deep inlets, cutting the mountains crosswise, fed by small lateral streams and one or two large terminal ones we found to be typical of the drainage system of the coast. They are of great economic importance as constituting the most likely situations for settlement. It is only by means of the valleys leading to them that transcontinental railroads may reach the sea. At the head of each inlet the banks of salt deposited by the glacial rivers form both shallow and deep water anchorages. The short, steep lateral valleys all contain small areas of timber, excellent power streams and mill sites. The larger terminal valleys contain still larger bodies of timber, small areas of arable land and are suited for manufacturing or town sites. As yet the average population of the inlets, excepting Burrard, on which Vancouver is situated, might be twenty, mostly loggers.

The rivers occupying these old glacial valleys are peculiar in several respects. The season of high water is in the summer when the snow is melting fastest in the mountains. They are then colored milky white by the boulder clay and sand which they bring down from the glaciers. To anyone travelling the valleys they are a source of constant aggravation. They flow through almost impenetrable swamps of thorny shrubs, wind through



A Few "Old Timers,"
Stanley Park, Vancouver.

muskegs and sloughs or split into a dozen different strands which must be crossed and recrossed. It is almost impossible to pack clothing and provisions through the dense undergrowth so it is customary for the few who find it necessary to ascend the rivers to take a boat with which to cross the stream between the rapids or possibly paddle or pole in the few quiet stretches. The packs are put in the boat and a rope attached to the bow and gunwale in such a manner that the strain of pulling holds the boat well into the stream. The unlucky traveler then wades in the edge of the ice-cold water or walks on the gravel bars and "tracks" his boat, with the rope cutting a crease in his shoulder. Oftentimes the water rises, as the sun in the daytime melts more snow, so that by the middle of the afternoon the water is too swift to wade. Log jams, an acre or two in extent are frequently met, falls are common, or long

stretches of rapids around which everything must be carried. Altogether it is a very engrossing mode of travel, no faculty is left unemployed, yet it is fully recompensed by the unrivalled scenery afforded by the snow-capped peaks on either hand, the abundance of large trout in every pool and riffle, and the feeling of mastery which one experiences when the divide is reached, and one may see where in some mossy meadow the streams separate which flow to east and west, or south and north.

No one who has ever written up the glories of the inside passage has been guilty of exaggeration. From Vancouver to Queen Charlotte Sound the panorama from the deck of a boat is one of mountains on either hand. Those of the mainland are two ranges. The nearer, partially covered with timber, reach into bare and rocky summits and have their scarred and broken faces marked by the dark green triangular



ONE OF THE GIANTS OF THE COAST—A "BULL DONKEY."



THE WAY TIMBER IS BROUGHT TO THE SEA WHEN THE HAUL IS TOO LONG FOR A "DONKEY."

patches of ascending timbered gulches or the narrow grey lines of rough rock slides. The farther inland ranges are only visible from the sea as great serrated snowy peaks. On the other hand the mountains of Vancouver Island, at a distance of twenty-five to thirty miles appear as an imposing angular bank of glistening snow, arising from a narrow black foundation which represents the low timbered island coast. As if to bring the traveler's thoughts to sea level again the navigable channels are in places choked with low rocky timbered islands between which the twenty foot tide rushes like a mill race four times daily. Here again our juvenile geographies are guilty of criminal negligence. They have told us of a far-away Scylla and Charybdis but never mentioned the fact that every ton of freight travelling to or from any point north of Nanaimo must make its way through the seething passage of Seymour Narrows,

Hole-in-the-wall. Yucalta or Arrow Rapids, where the current is so swift that it has been known to capsize a full-rigged United States battle cruiser. With incidents such as these, with its shifting screens of mountains, its sunlit, narrow, crooked passages, and its sparse, quaint population of old timers is it any wonder that the Inside Passage has surpassed the expectations of every traveller.

The industries of the Coast are not yet beyond the initial stage. Logging, requiring the least capital and presenting a maximum of return for a minimum of skill, has made the greatest progress. As yet not much timber is being cut which cannot be put into salt water with a donkey engine. The general procedure has been to stake a piece of timber, or in other words pay the Government an annual rental for a license to cut the timber from a certain area, then secure a small force of men, a donkey engine and start a

logging camp. The donkey is placed on the shore, preferably in a small bay where the logs may be boomed without being exposed to the full force of the waves. A skid road is constructed with as easy a grade, and as few curves as possible, leading back to the timber to be cut. The line, an inch, or inch and a quarter steel cable, leads from the drum of the donkey to the timber. In order to facilitate the handling of the line, a smaller cable, the haul-back, is attached to the second drum of the donkey and together with the hauling line forms a loop, one end of which is reeled in as the other is paid out. Thus the heavy line may be pulled back to the woods for the next haul. This represents the simplest out fit. Usually two donkeys are used, one situated half a mile or so from shore which yards the logs to a central point, the other, the "road" donkey at the shore, which hauls the logs in "turns" or tows of eight or ten logs each over the skid road to the shore. By means of this massive machinery high logs are jerked through the small trees and underbrush and after develop a lurching sprightliness which one seldom sees—save in a run-a-way buggy. When boomed in booms one hundred to one hundred and twenty-five yards long, containing each the quarter of a million feet, they are towed to Vancouver to the mills. There are as yet few mills north of Vancouver. At present railroads are being built to reach the less accessible timber and with the completion of these logging will receive a great impetus.

Mining does not fill so important a position as we might expect. There are more prospectors than miners, more claims than prospectors. Although our geographies told us that

Texada Island was solid iron ore it still lies undeveloped. A few small copper, gold, silver mines are working, but aside from the coal deposits of Vancouver Island little work has been done. The prospectors, old grizzled veterans of California, Idaho and Alaska are still searching the streams for "float," crawling along the talus slopes, scaling the dizzy peaks and buoyed up by indomitable hope spending long months in painful traverses of rugged mountains or slow searches around glacier margins. They have struck color many times, but have failed in the greatly disturbed rocks of the country to find large enough deposits in place to make profitable working.

The population is floating yet permanent. They travel from south to north and back again, but never leave the coast to whose rugged freedom they are wedded. As a class, the coast loggers and prospectors, who comprise the greater part of the population, are men who have drifted there from the mining and lumber camps of the world and in such camps or in lonely shacks they will die. They are hard workers, who on dangerous trips, in a lonely country, at a hazardous occupation, will spend weeks of painstaking work. Then when they reach one of the numerous saloons, whence "grub," mail and "hooch" or squirrel whiskey are distributed they will dispose of the hard-earned boom or cleverly constructed claim, and with an abandonment primal give themselves over to a period of carousing. On one occasion when I asked one logger why whiskey was popularly known as squirrel he replied that it was because two drinks would make a man climb a tree.

What will be the future of this country which is now almost entirely

without a population it is wild to imagine. At present the thousands of miles of coast are naked, except for a very few shacks built of split cedar stakes, where live or have lived siwashers hand-loggers or prospectors. But with this past summer's activity millions of dollars of capital have poured into the country and nearly every square mile of timber has passed into the hands of small investors or wealthy corporations. British Columbia timber, though it has some times been grossly over-estimated is the last virgin stand of valuable construction timber on the continent. Big manufacturers are approaching it from all sides and soon, under the influence of donkey engines, railroads and double cutting bandsaws it will disappear. But while disappearing it will furnish

homes for thousands of families, work for tens of thousands, and these lovely inlets where one's shadow is now good company may soon be the sites of busy towns. Following upon the disappearance of the timber, for it will be clear cut, and almost assuredly turned over under existing regulations and protection, will come a period when the lumber industry will diminish before the mining, and on the then denuded mountains may be established mining towns similar to those of the Gold Range which represents the same formation in the United States.

Should this development be realized, together with a careful conservative exportation of her prodical fisheries British Columbia may yet prove her proud boast, "The Wealthiest Province of the Dominion."

IDLENESS.

Idleness! oh idleness!
 When the brimming pitcher stands
 Uncaressed by human hands,
 While the tinkling waters fall
 Softly, faintly musical,
 Blessed then, oh blessed then,
 Blessed is sweet idleness.

When the pitcher breaks at last,
 And the shards away are cast,
 When the pitcher's soul is flown
 Up, away to the unknown—

Never it recalls the spring
 Where the soothing waters sing;
 It recalls the welcome draught
 By the thirsty traveller quaffed—
 Blessed then, oh blessed then
 The memory of use.

A. R. Thurlocke.

Commercial Value of Modern Cheese Ripening.

By C. A. PUBLAW, M.D.

WHEN we speak of cheese curing, we really mean a continuation of a process of manufacture, whereby an unmaturred, indigestible, milk-product is ripened into a mellow palatable and nutritious food.

The ripening of cheese is not at all unlike the ripening of our fruits, and it is quite as unreasonable for a human being to consume the green, unripened cheese, as it would be to consume an apple in its green immaturity.

One pound of properly ripened cheese has as much food value as two and one-half pounds of best red meats; while even a smaller amount of the unripened product is capable of causing injury to the digestive system of the consumer.

The ideal cheese is of such a standard of quality that it will always create a desire for increased consumption. It should have a clean pleasant flavor, and a mellow, buttery texture, with enough body to insure a good keeping quality. To produce these characteristics in a cheese, we must have a clean, pure milk, an intelligent system of manufacture, and a ripening process in a pure atmosphere, kept at a controlled temperature of 60 degrees or lower.

Our Canadian climate does not permit these conditions naturally, during the summer months, but we can by a

small expense provide them artificially.

If the milk has been cooled by the use of ice as soon as milked, we have taken the first and most important measure of providing a lack of difficulties usually met, both in the making and curing of cheese.

Then by the use of ice in a building well insulated and provided with a good circulation of cold air, we have most of the curing agents under our control.

Bacteriologists tell us that bacterial life ends in a cheese about seven days after manufacture. Knowing as we do, then, the checking influence a cold temperature has on bacterial life, we should readily see the importance of keeping at least the putrefactive forms under control until after the death of the producers of repulsive flavors.

If we can believe that the life of a bacterium in a cheese is only seven days, then a great many of our common flavors must be due to some chemical change, either from bacterial products or from changes produced by agents of manufacture, on the milk constituents. My reason for this is that very commonly a cheese at ten days or older may give very slight evidence of going off flavor, but if seen at a month old may be decidedly off.

There is no doubt in my mind but that changes continue to take place for

months after manufacture, which may be largely controlled by ripening the cheese at a cold temperature.

In curing rooms where the every-day variable temperature exists during summer weather, we find dry, mealy cheese, butter-fat melting from the cheese and dripping from the ranges, open cheese, all sorts of undesirable flavors, and in damp weather, mould. These are faults found more or less commonly under such conditions and which can be largely overcome by cool curing rooms. We must, however, remember that cool curing will not entirely overcome errors of manufacture or defects in the milk supply.

But what a comfort it is to a maker to put his cheese daily into a room where he knows the temperature will not become hot enough to injure his cheese and leave him responsible for defects, so commonly found, or at least searched for by buyers.

We know that we can save at least one pound shrinkage on an eighty-pound cheese, in a good modern cool room, because it has been demonstrated to our satisfaction by actual

experience. We know we can produce a cheese of more excellent eating quality in such a room, because we can incorporate more moisture and at the same time control bacterial effects.

A very serious drawback in demonstrating to patrons of cheese factories the value of cool curing rooms is the practice of shipping cheese a few days old from the ordinary rooms. In this way very poorly equipped factories can produce as good a monthly average as their neighbor who has gone to the expense of erecting a better place of manufacture. They, too, very often receive as much money for their inferior cheese, and we always find the buyers ready to take such goods.

In some of our cheese sections, particularly in Prince Edward County, the buyers have paid 1-16 to 1-8 of a cent. per pound more for cool cured cheese every week, and it is only in these sections where we can actually find the greatest appreciation and satisfaction derived from the cool curing of cheese for commercial value.

EMPIRE.

'Tis the run of the tide that rules the sea ;
 When the tide begins to turn,
 The bravest breakers helpless be,
 Though toward the land they yearn ;
 But the human waves, not Fortunes' slaves,
 Themselves create the tide,
 And, as long as they reach toward the beach,
 Their empire has not died.

A. R. Thurlocke.

Agriculture.

Farm Management.

By WM. RENNIE, SR.

THE demand for competent farm managers at lucrative salaries is greater than the supply, and this demand is increasing. Many farms throughout the country are passing into the hands of capitalists, who prefer to have their money invested in real estate, provided they can realize fair interest for their investment, and at the same time improve the farm, and so increase its value. The question of salary depends upon the ability of the manager himself. Many of the millionaires in the United States and Canada own large estates of several thousand acres, who would gladly pay a salary of say one thousand dollars for each thousand acres in their farm, to a competent manager who has the executive ability to grasp the situation so that he could have perfect control of every detail and utilize all labor to the best advantage, and keep the whole farm neat and tidy, and at the end of each year show a net profit of about \$200 per hundred acres of land. The profits would have to be arranged on the location and quality of soil.

The qualifications are first a good education, and both a practical and scientific knowledge of farming in all its departments, including dairying, horticulture, etc. A course in an

agricultural college is necessary to obtain the best results. In order to be successful in this twentieth century knowledge is essential in every walk of life. To be a successful farmer it requires more energy and brains than in any other profession. Other professions have more routine. The farmer requires to change according to the weather and many other conditions. The farm manager should be an early bird. He should have a talk with the foreman of each department between five and six o'clock in the morning, so as to keep in close touch with all that is going on and arrange for the work of the day. At seven o'clock sharp he should be at whatever part of the farm the teams are at work, with a kit of tools in his rig or auto, fully equipped to repair any implement that may be out of order. It is important that the manager be competent to repair any implement that requires repairing, and in the shortest time possible, for "time is money." The manager should keep moving from place to place on the farm wherever there are men at work, calling occasionally at the office and advise with the clerk. A manager cannot afford to sit in the office. In the writer's experience, the time for teams and men to work on the farm is

from 7 to 12 o'clock and from 1 to 6 o'clock, ten hours. All work on the farm should stop at 6 p.m., and allow the men and women to have the evening to themselves. The teamsters and dairymen require to rise at 5 a.m., to feed the animals and milk the cows. Dairying is a profitable part of the farm operations, provided the conditions are favorable, viz., near a good market for either milk or cream, or both. It is not necessary to mention the importance of keeping only good dairy cows that will give a large quantity of rich milk. Any others are only robbers. Pigs in conjunction with a dairy are profitable. If there is any hilly land on the farm this can be utilized to keep a flock of sheep. The sheep ranch should be enclosed with a high close-woven wire fence to keep out dogs. Supposing the farm is intended for pleasure as well as for profit, it is advisable to make a plan so that the farm can be laid out systematically for a certain rotation of crops, say a four year's course. Have as few fences as possible (the above is necessary in any case). Plant round or oval groups of trees on the high portions of the farm for shade and ornament. If there are any wood lands present, round the corners which will give the farm more of a park-like appearance. Have the drives properly graded and seeded down with Blue Grass, Red Top and White Clover. These drives can be cut with the mower twice or three times during the summer. There might also be drives around the wood lots. These can also be utilized for headlands to turn the implements on.

All buildings on the farm should be neatly painted, a quiet color, say a light drab, and the cornice, doors and

window frames a shade darker, and the gate posts same color.

In the successful management of a farm very much depends on the utilizing of labor. It is advisable to have large three horse implements instead of the ordinary two horse, so that one man and three horses can do the work of two men and four horses. It is only a question of time until all farm implements will be hauled by motor power instead of horses. When purchasing implements, tools, horses and cattle, for the farm, the manager should have the ability to buy in the cheapest market, considering quality, and sell in the dearest. Might the writer give this word of warning, when making purchases never accept a personal gift or luck-penny of any kind. The manager's time and all cash receipts rightfully belong to the proprietor of the farm. This is a rock on which many a young man has been wrecked.

Book-keeping should not be neglected on the farm. The first entry should be in the daily journal, at the close of each day, and transactions as the hiring of help, buying and selling, the kind of work performed, etc., also such necessary details as name of person with whom business is done, the thing received or given, terms of sales, etc. Also note prevailing weather. Each entry in this journal may be disposed of by a further entry in either the cash book or ledger.

To find the present worth an annual statement should be made, say 1st of June or 1st of January. First take an inventory of all stock, implements, grain, produce, etc., on hand, at their present value. To this add cash in bank and on hand, and all accounts and notes owing, making the total

assets. From this deduct the total amount of accounts and notes owing, and the difference is the present worth.

What may seem a small and insignificant matter is for a manager to call his men by their surnames instead of Dick, Tom, Harry, etc. By so doing he will gain the confidence and respect of the men, which will have a tendency to raise all to a higher plane.

Having briefly enumerated some of the qualifications required of a farm manager on a large farm, I should state

that on a smaller one of say a section (640 acres) the duties would not be nearly so onerous, still the same executive ability is required. The salary on the same ratio would be \$640.

A young man who has had little or no experience in the management of a farm should not undertake more than a section, and if he makes a success he will soon be called higher, while to undertake the management of a larger farm and make a failure would injure his chances for life.



A Daily Sight at the Poultry Department.
JERRY AND HIS DUCKS.

The Short Courses as Seen by Those Who Have Been There.

Short Courses Mean Interest, Enthusiasm and Returns

THE Short Courses at the O. A. C. need no commendatory words from anyone to justify their continuance. To any who knows from personal experience they are their own justification. It is a great privilege to acquire information about one's own business in the most accurate and concrete form, without cost or incessant study. These courses are given with just enough theory to make them interesting. They are not dogmatic in any sense. The fullest discussion is indulged in, and honest questionings are always encouraged and dealt with.

The Live Stock lessons are given with the presence of the living animals for illustration purposes. The courses cannot be too highly valued—they will add interest and zest to all the operations of the farm, and where the full advantage is gained, will add materially to the annual income of the student. To sum up the advantages in concrete form—to a good and thorough student they are—increased interest in his business, added enthusiasm, definite knowledge, pointers to success, enhanced returns.

(Signed) John Dryden.

An Opportunity For An Outside View.

Did you ever notice that it is possible to get so close to a thing that you can't see it?

Of course you have, but how many farmers know that this universal principle applies to their own business? No matter what your business is, it's a splendid thing to get away once in a while. Stand at arm's length and look your business and yourself over.

The Short Course affords the farmer this opportunity. He not only has an outing, teeming with good things, but a training under the direction of

able instructors and men who know. Their best thought, and years of experience are focused and concentrated into two weeks of solid, practical instruction.

Thus, the infilling of useful knowledge, the association and exchange of ideas, with other progressive farmers, gives to the student such an inspiration and enthusiasm in his lofty profession, that he returns home, a broader man, a keener observer, and an air about him which seems to say "I'm glad I am a farmer."

(Signed) E. L. Dyer, Toronto.

The Quickest Way of Getting Knowledge

Is there any inducement to attend that course? Shall I benefit in any way, should a week or two be spent there, the coming January? Shall I get the worth of my money? Will it pay me to go? These are questions which are now being considered by many young men—yes, and older ones also—here and there throughout Ontario. The consistent reply is that it depends altogether on the wants and wishes of the individual. The man who desires to make a success of his life's work on the Ontario farm, henceforth, cannot afford to remain lacking in knowledge of domestic animals. Knowledge of that kind is power indeed. He must know what constitutes a good animal of its kind. He must know form and quality. He must get a firm grasp of the ideal animal he purposes to use, in his process of manufacturing raw farm products into the higher-priced commodities. He may in half a long lifetime acquire that knowledge, working along in his own surroundings. But this is too rushing an age for one to so waste time. At Institute meetings the writer never fails to point out the

fact of its being possible for the observing man to attend the Short Course and there learn more about live stock in a week, or two, than could be in any way gathered thirty years ago in half a lifetime.

Having attended the Short Course several years, the conviction has become firmly fixed that nowhere else can so much useful information be got in so short a time and at so little cost as at the January Short Course. It has been noticed that exhibitors of many year's experience have been seen at the Short Course, thereby indicating their appreciation of the teaching provided. A further decided advantage to the young man is that from all over the Province he meets and compares notes with the brightest and most progressive men in our midst. Two years ago it was an inspiration to see and talk to some two hundred of the young men who gathered for a definite purpose, and that purpose was to study carefully animal form and standards of value.

John Campbell,
Woodville.

Short Courses Teach Exactness in Thought

The necessity of some special training in judging stock and other farm products has been forcibly pressed upon my mind at many of our Farmers' Institute meetings, where we have held judging classes. Where we have had a number of animals together in a class, as a rule, the majority of men present will place the best animal first, and where it is an outstanding animal

all will be agreed. But when you ask them for their reasons for placing the animals as they did, the difficulty commences. There is a good deal of hesitancy. When asked individually, the minor points are often brought out first and those of the most importance passed over. We often get an answer such as the following to the question, "Why do you place this animal first?"

"Well, I cannot tell you exactly, but I like the look of the animal." An answer like this shows that the man's intuition tells him which is the best. A man of this kind has the foundation for making a good judge. A Short

Course such as are given at your college will teach such a man how to analyse an animal, by going over it systematically and expressing his thoughts in a concrete form.

Hy Glendinning.

Much Information at Small Cost

I had the pleasure of attending the Short Course in Judging Seed and Live Stock last January. I consider it one of the most profitable times spent in my life. In the first place the welcome given the Short Course students by President Creelman made us all feel we had as much right there as in our own homes.

Again the untiring energy of Professor Day and his great ability in imparting knowledge, making everything so plain and simple that even a child might understand. To say the least he is deserving of the highest praise. I think every student has a warm place in his heart for Professor Day.

I consider the Short Courses given at Guelph a grand opportunity for the many young farmers of Canada who have not the privilege of taking the two year course; an opportunity of picking up much valuable information at a trifling cost, which will be helpful to them in their future work upon the farm. I sincerely hope that very many young men will embrace these opportunities afforded them of improving themselves along agricultural lines, so that in the near future we will have a Province filled with farmers unequaled anywhere in the world.

(Signed)

Galvin Barbour,
Crosshill.

The Greatest Opportunity Yet.

I consider the Short Courses the greatest opportunity ever presented for farmers to acquire valuable and much-needed information concerning their profession. The congregating of so many with one desire concentrates thought, conversation and enquiry along definite lines. Then having such excellent teachers as are at the O. A. C., each having a strong desire to benefit every pupil, and in that way improve agriculture, causes the pupils to retain more information than has ever been done in any other way. And

as a pleasure outing it cannot be surpassed. The good-natured manner in which the Professors discuss the several questions causes the pupils to take an active part in the discussions and in that way brings out just what they are in doubt about, and fixes it in their minds, whether it be along the line of Forestry, Weed Eradication, Seed Selection, Soil Cultivation, Live Stock Improvement or any other branch of agriculture.

(Signed)

J. Standish.

Experimental.

Natural Cross-Fertilizing of Cereals.

By CECIL R. KLINCK.

THAT phase of plant breeding known as cross-fertilizing or hybridizing, is, at the present time, engaging the closest attention of the scientific world. Cross-fertilizing consists in transferring the pollen of one variety or species of plant, to another of the same species; while a hybrid is the result of the crossing of two species. In order to avoid confusion we shall treat the two divisions as one, and the same.

Whence came our numerous varieties of cereals? In the days of Aristotle plants were regarded as destitute of sexuality. Their sexuality was not discovered experimentally until 1691, and not until 1719, when Thomas Fairchild crossed the Carnation, on the Sweet William, was it known that a hybrid could be produced in the plant kingdom. Nearly one hundred years rolled by before any attempt was made to cross any of our common cereals. Cereal-breeding had its beginning a little over a century ago, when Thomas Knight undertook to cross wheats. Other investigators gradually took up the work, but no practical results were obtained until recent years. The origination of new varieties by artificial cross-fertilization, has been carried on in many countries, but up to the present not more than four varieties of wheat have thus originated in

Canada. These were produced on the Central Experimental Farm at Ottawa, and were distributed under the names of Percey, Preston, Stanley and Huron. Since we cannot attribute the introduction of many of our varieties to the scientific work of any man, we must look elsewhere for their origin.

All plants that produce seeds must first bear flowers. A perfect flower is one that bears both stamens and one or more pistils. In such flowers it is natural to suppose that the pollen from any one flower will fertilize the pistil of that same flower. This is natural self-fertilization. Natural cross-fertilization is to be seen in corn. The stamens are borne on a branched inflorescence that terminates the stem, while the stigmas of the pistils are at the tips of the silk that is produced upon the ear. In this case it would appear that the pistils within the husk are more likely to receive pollen from a surrounding plant than from the antheriferous flowers that crown the parent plant. It is, and, when we recall the fact that the anthers of a corn plant are ripe before the pistils of that plant are in a receptive condition, we draw the proper conclusion when we say that corn is usually cross-fertilized.

To fully appreciate the method of fertilization in cereals it is necessary to spend some time in the field, while

the various grains are in flower. But few of us have ever noticed a wheat plant when its flowers are open; fewer of us have looked into an oat flower that has opened of its own accord, and a still smaller number of us have seen a barley flower open, or even feel certain that it does unfold its glumes. The fact that the stamens and pistils of these flowers mature at practically the same time; that the flowers open but for a short time and that only when the air is saturated with moisture, has led the laboratory botanist to conclude that wheat, oats and barley are invariably self-fertilized.

In 1880 when experiments in agricultural plant breeding were commenced at Newton-le-Willows, they set about to ascertain whether or not natural cross-fertilization actually existed in the wheat. To settle this question a large number of heads were selected in a field crop, and the immature stamens were removed from several florets on each head, the remaining florets being left intact. Not one single embryo was developed in the florets thus treated, and the experimenters felt justified in stating that natural crossing did not exist.

It is now generally admitted that natural cross-fertilization is quite a common occurrence. The greatest number of examples is to be found among ryes. When two varieties of wheat are sown together or side by side, a few hybrids do occur. They are believed to be less common among oats; while the fact that the pollen from a normal barley flower may, by natural agencies, be carried to the pistil of another and produce a seed is well nigh the impossible.

In 1900 Garton Brothers, of England, stated that as a result of minute

investigation extending over a very long period of time, they were convinced that the constructive formation with which nature has endowed the wheat plant rendered natural cross-fertilization impossible at any time. They further claimed that when new breeds of wheat are produced there is a tendency to degenerate, as is strikingly shown in many varieties of potatoes. They claim that this deterioration in cereals is due to their natural system of in-and-in-breeding. In order to make good any loss of value, this firm makes a practice of transferring the pollen from the flowers of one plant to the florets of another of the same variety. This reinvigorates the seed, and from this they produce their "Regenerate Stock." Against this system we can but place the conclusion at which Mr. Jamieson, Director of Experiments at Glasterberry, arrived in the same year. "The pollen grains being ripe and shed (in part at least) before the female organ is in a receptive condition, it seems to follow that natural cross-fertilization is rather the rule than the exception."

The extent to which crossing takes place within a variety cannot be determined, for besides invigorating the plant there is no evident variation in the character of the offspring. Where two distinct varieties cross, intense variation is produced; one solitary grain giving origin to many types, no two of which possess the same combination of characters.

In the summer of 1905 Mr. White-side discovered a plant of beardless, hooded, two-rowed barley in a large plot of Canadian Two-Rowed that was then growing on the college farm. One hundred seeds from this plant were sown and produced numerous types

of heads. This proved beyond a doubt that the first plant was a hybrid. All the seed for the farm plot was the product of one seed of Two-Rowed Canadian, in the spring of 1903. As each plant of the 1904 crop was carefully examined, and showed no variation from the original variety, we have good reason for believing that the crossing occurred in the flowering period of 1904.

This is evidently the cross of some beardless six-rowed barley on the Canadian Two-Rowed variety. The new characters possessed by the hybrids are baldness and many of them have six-rows of grain. It is quite impossible that this hybrid plant could have resulted from a stray seed, from our artificial crosses, for not until after this time had we used a single variety of beardless barley in our hybridizing work.

Last spring seven distinct types of heads were selected from the hybrid plot of the previous year. These selections were as follows:

1. Six-rowed, 6 rows fully hooded.
2. Six-rowed, 6 rows hooded, but with an occasional beard.
3. Six-rowed, 2 rows fully hooded, 4 rows bearded.
4. Six-rowed, 6 rows fully bearded.
5. Two-rowed, 2 rows fully bearded.
6. Two-rowed, 2 rows fully hooded.
7. This was a plant that bore heads having six rows of hooded grains on the lower half of the heads, while the upper halves were two-rowed.

All plants from plots numbers one and five came true to the type of the parent plants, thus indicating that as far as these characters are concerned, we had selected a pure dominant plant for the former and a pure recessive plant for the latter plot.

It is now generally understood that a mixture of oats and barley will give a greater yield of grain than the average of these two grains sown separately. Some farmers contend that by sowing two varieties of winter wheat together, a greater yield is assured. Results of investigations on our experimental plots do not show this to be true. It has been instrumental in proving that natural cross-fertilization is by no means the exception.

In the summer of 1904, Michigan Amber and Early Genesee Giant winter wheats were grown in a mixture and hybrids have resulted. One seed was selected from each of sixty typical heads of the Early Genesee Giant. These were planted in rows. In the resulting crop two of the plants proved to be hybrids. Still greater variation was seen in the succeeding crop, from these two plants. As the seed had been increased by the "run wild" method of plant breeding, (no selection having been made to fix any one type) the plots of the past season contained many interesting types of plants. In a similar experiment where Dawson's Golden Chaff and Turkey Red were sown, sixty seeds of the Turkey Red variety were taken from the plot. These produced five hybrid plants. Two of these, the seed of which has been increased, formed rod-square plots, for the past season. Many interesting types of heads, colors of chaff and grain, and qualities of straw were observed in these plots.

In the Common Emmer-Triticum dicoccum, we have what appears to be a true hybrid. In the summer of 1905 a very vigorous plant of emmer was taken from the variety plot. The large heads and red chaff of this plant made it quite conspicuous among its smaller,

white-chaffed neighbors. The large head, red chaff, coarse straw, and ease, with which this grain may be separated from the chaff would indicate that the original plant resulted from a cross between Common Emmer and Wild Goose Spring Wheat-Triticum durum, or some closely related variety of that species.

The Early Ripe variety of white oats appears to be immune to the attacks of smut. The seed of a choice plant that was selected in 1904 produced both white and black oats in the following season. It was not able to resist the efforts of nature to produce hybrids. Again a choice plant of Joannette oats was saved from a nursery plot in 1903. The plot of grain resulting from the seed of this plant is very uneven in growth, nearly two-thirds of the plants are tall and have fairly stiff straw. The balance of the plot has short straw and weaker straw, like the original variety.

When a variety of grain that is under cultivation yields a plant with special peculiarities, the change is usually attributed to spontaneous generation. Although this may sometimes be the true cause, would it not be getting nearer the facts of the case if we were to say that they were the result of natural cross-fertilization, with a plant of that variety or of some other adjacent plant?

To show that natural cross-fertilization does exist, and that quite commonly, I have mentioned a few cases that I have observed during the past season. We are quite certain of the parentage at least a few of these crosses. Where many varieties are grown side-by-side, as in an experi-

mental field, many plants are found that are not true to the variety in which they are growing. These have to be pulled from the plot and are usually discarded. Rather than say that they were there, as the result of carelessness, we say "some enemy hath done this" or "spontaneous variation has caused this." The truth of the case can often be reached by saving the seed, planting it and noting the variations, if any, in the succeeding crop. During the past season the writer selected about ninety such plants from the various varieties of winter wheat. The seed of these is now in rows in the field, and we look forward for more important information on this subject, when we shall be able to study the mature plants.

Artificial crossing is yet in its infancy and has played but a small part in practical agriculture. Many of our varieties of field crops are nothing more than improved strains of well established varieties; others have resulted from "regenerated stock," where the selected plant has resulted from the natural crossing of two flowers of the same variety. The greater number of them have resulted from the so-called spontaneous variation which, if traced to its true source, would show that many of them are but the natural crosses of two varieties.

When this haphazard method has resulted in the establishing of so many valuable varieties, what may be expected, when the parentage and after selection of our future breeds are placed within the hands of men, who have made a study of varieties, best adapted to a locality, and of the laws governing this phase of plant breeding?

Experimental Union Annual Meeting.

The annual meeting of the Agricultural Experimental Union will be held at the Ontario Agricultural College, Guelph, on the 9th, 10th and 11th of December, starting on Monday, at 1:30 p.m.

The co-operative experimental work of the Union has been conducted in 1907 in the Departments of Horticulture, Agriculture, Bee-Keeping, Poultry Raising, Farm Forestry and Agricultural Chemistry. In most of these branches the work has been more extensive than in any previous year. Especially in the line of Horticulture has the work been greatly increased. It now includes co-operative work with vegetables, as well as with both small and large fruits. There were upwards of 5,000 co-operative experimenters actually engaged in the work of the Experimental Union during the past year. The results of the successfully conducted experiments throughout the Province will be presented and discussed at the meeting.

Interesting addresses are expected from Hon. Nelson Monteith, President G. C. Creelman, Professor C. C. James, Mr. G. A. Putnam, Mr. J. Lockie Wil-

son and others. Reports are expected from the six High School Agricultural instructors of the Province. Professor W. P. Gamble will report on the work which has been done towards bringing about "Legislative Control of Commercial Feeding-stuffs." "The Future Development of the Field Crops Competition in Ontario" will be presented in an address by Mr. T. G. Raynor. It is expected that Mr. C. Nicholson, an ex-student of the college, an experimenter for several years, and the winner of first prize in the field competition in the Mount Forest district in 1907, will be present and lead in the discussion on Mr. Raynor's address.

The Women's Institute Convention will be held at the college, and the Provincial Winter Fair will be held in the city of Guelph immediately following the Experimental Union meeting.

For programmes, giving full information regarding the meeting of the Experimental Union and excursion rates to Guelph, apply to the Secretary, C. A. Zavitz, Agricultural College, Guelph, Ont.



Horticulture.

The Present Status of Scientific Investigation in Horticulture.

By W. T. MACOUN, Horticulturist, Central Experimental Farm, Ottawa.

In this article, the third of the series, Mr. Macoun treats very comprehensively of the present status of investigation work along Horticultural lines. Heretofore this line of work, especially in America, has not received the attention it deserves, mainly because of lack of funds, and pressure of other work already imposed on our good men. The Adams' Act, recently passed at Washington, will allow of extension of this work to a breadth and thoroughness not before possible in any country; and from the fact of our being at present on the threshold of a new era in this work, as is also shown in the article by Mr. Macoun, this statement of our present position and knowledge is particularly valuable and interesting.

In the January REVIEW, "Educational Work in Horticulture," will be discussed by Director L. H. Bailey, of Cornell.—[Editor.]

AS the meaning of scientific investigation may vary with different individuals it may be stated at the outset of this article that it will be our endeavour to treat mainly of that phase of the subject which deals with the search for causes and underlying principles, which we consider to be the highest kind of scientific investigation.

In order to arrive at the present status of scientific investigation in horticulture it is necessary to have a clear understanding of the development of it, hence a few historical facts are given.

In primitive times when gardening was first practised there were, no doubt, but a few fruits and vegetables grown to supply the pressing needs of the people. From the experience gained in growing plants, from year to year and generation to generation, there developed the Art of Gardening

when the craft of the individual was prominent. When, however, reason took the place of superstition and empirical rules, horticulture became recognized as a science, the proper understanding of which required just as much knowledge of causes and principles as the Science of Agriculture, itself resulting from scientific investigation into the accumulated results of centuries of experience.

As far back as history goes we find that the peoples of different lands cultivated flowers, fruits and vegetables. By the time of the Roman era, now nearly 2,000 years ago, quite a large number of cultivated varieties were in existence. Flowers, at least, and probably fruit and vegetables were grown by the Romans for commercial purposes and the Art of Gardening, owing to many years' experience, was fairly well developed, such operations being practised as grafting, pruning, thinning, forcing and

retarding plants. We read that they even practiced ringing to induce fruitfulness. When Rome fell, Europe was overrun by barbarians and for several centuries the culture of plants was much neglected and was confined largely to the monks who in their monastery grounds kept up the best practices and probably improved on former methods.

By the twelfth century a revival in gardening had set in in Holland and by the fourteenth century had extended to Italy. The introduction of printing, which spread a knowledge of the best methods then known, must have given a great impetus to gardening, which afterwards steadily spread among the people until by the middle of the 17th century the art of gardening had reached a high standard. But while there were many skillful gardeners in the 17th century their practice was not governed by causes and principles, but almost altogether by the experience of gardeners who had gone before. There was much superstition also, one example being the supposed influence of the moon in governing the best time to carry on certain operations.

In Asia there was little development in scientific horticulture, although the Art of Gardening probably first developed there.

With the 18th century there dawned a new era for horticulture. Chemistry, which in the past had been the mystic art of the alchemist, developed into a science in the hands of such men as Priestly, Cavendish, Becher, Stahl, Black and Scheele, and the study of Vegetable Physiology by such men as Grew, Malpighi, Ray, Tournefort, Linnaeus, Jussieu and others brought to light certain principles in the

growth and structure of plants which were unknown before and which it was soon found played an important part in their successful culture. These investigations only became possible by the use of microscopes which were introduced in the 17th century. The knowledge of principles broadened the whole scope of horticulture.

The 19th century marked still greater advances in the science of horticulture, through the knowledge of principles discovered or made known through such men as Davy, Dalton, Liebig and Gilbert among chemists, and Knight, de Candolle, Lindley, Darwin and Sachs among botanists.

The opening years of the 20th century find many bright men in the field with good promise that this century will do more for the Science of Horticulture than any which have preceded it.

In order to learn what is the present status of scientific investigation in horticulture it is necessary to know at least some of the principles which are now recognized and how they are used in practice by Horticulturists. A few are here given in as few words as possible, merely as examples.

Capillarity and Cultivation.

By capillary attraction soil moisture is brought from lower depths upwards and is utilized by growing plants. If the capillary structure of the soil is approximately uniform to the surface the water will rise to the surface and pass off as vapour. By cultivation the uniformity of the structure of the surface soil is broken, thus preventing evaporation to a large extent and conserving the moisture for the growing crop.

Soil Moisture and Drainage.

Soils saturated with water are usually colder than those which have relatively a smaller amount, because water takes longer to heat than soil. The evaporation of moisture keeps the soil cool also. Most cultivated crops do not succeed in soil saturated with water, hence we drain to take off the surplus, and in doing so make the soil warmer. By the principle known as gravity water flows downwards, hence by a good drainage system the surplus water is taken off the land. There are also other principles involved in the drainage of soil.

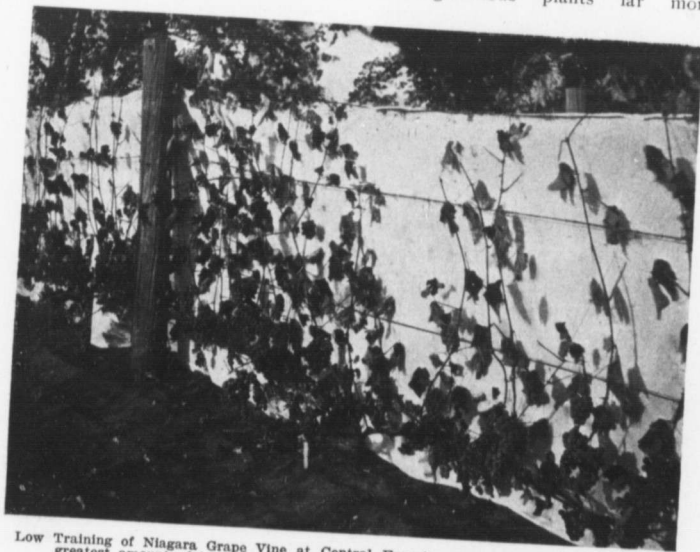
Plant Food and Fertilizers.

By chemical analysis it has been shown that certain elements in various proportions are taken from the soil

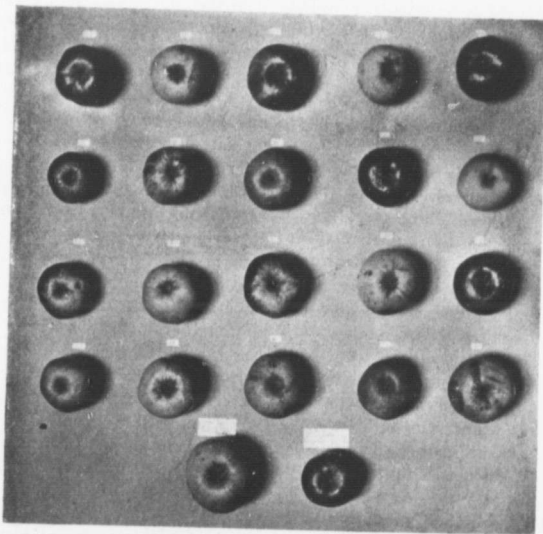
by growing plants. These elements are restored to the soil in horticultural practice by the application of manures and fertilizers known to contain in suitable proportions the elements which have been removed, with the result that good crops are maintained.

Free Nitrogen and Legumes.

The ability of leguminous plants with the aid of certain organisms on their roots to take free nitrogen from the air was only discovered towards the close of the 19th century, yet in practice it was known by the ancients that the ploughing under of clover was remarkably beneficial to soil. The discovery of this principle has been of untold value to agriculturists and horticulturists, making the use of leguminous plants far more



Low Training of Niagara Grape Vine at Central Experimental Farm, Ottawa, to have greatest amount of heat about fruit to ripen it. On low land where cold air settles higher training might be better.



Twenty cross-bred apples with their parents, McMahon female and Scott Winter male. McMahon is the large, light apple to the left at bottom. Scott Winter is the small red apple beside it. Note what a large proportion of the seedlings take after the male parent in colour.

general than it had been and saving much money which had been formerly spent in the purchase of expensive nitrogenous fertilizers.

Air, Drainage and Injury from Frost.

Cold air is heavier than warm air, and according to the law of gravity, falls or flows downwards. In practice, low land or valleys where the colder air settles are not planted to crops which will be injured by light frost, the more elevated land being chosen where the temperature will be higher.

Sap Flow and Pruning.

Sap with plant food in a crude condition rises through the plant to the leaves and is there elaborated or transformed. Returning, it causes

new tissue to be made in bud, fruit, stem or root. Pruning is practised to divert the sap, be it crude or elaborated, wherever desired. By removing some branches more sap will flow into those which are left, resulting in a more vigorous growth and larger fruit, if the tree is in bearing, as the tree endeavors to regain the nice balance which exists between roots and top in nature. There are other principles involved in pruning which need not be referred to here.

Light Colored Twigs and Swelling or Fruit Buds.

One of the most recent applications of principles to horticultural practice is the breeding of peaches with

light colored twigs to avoid the injury from the swelling of buds in late winter or early spring followed by frost. It is known that a substance with a light colored surface will not absorb as much heat as those which have darker. Experiments have shown that following this principle, the buds of varieties of peaches having light colored twigs need a higher temperature to cause them to swell than those of darker colour. The Horticulturist of the Missouri Station is now engaged in breeding desirable varieties with light colored twigs.

There are many more principles which might be mentioned which are brought to bear on the practice of horticulture. It may be said that all, or practically all, the principles applied to agriculture can be employed in horticultural practice, as horticulture is but a branch of agriculture. The above are given for the purpose of showing how important the knowledge of principles is to the Horticulturist, and what a high plane scientific investigations in horticulture must reach to discover new ones. Unless the future horticultural investigator is well grounded in chemistry, plant physiology and physics his work is not likely to take the high plane necessary for the best kind of horticultural investigation.

It would be better for the horticulturist who tries to carry on investigations into causes and principles to limit his range of work and be well grounded in the sciences which would be likely to aid him than to try to cover the whole field of horticulture. Unfortunately, there are so few men available at present for horticultural work that each one has more than he can do.

In the meantime there should be greater co-operation in investigation between the horticulturist and the chemist, plant physiologist and physicist, as each would assist the other in working out the problems of immediate importance.

There are many agencies now at work in the investigation of horticultural problems.

Horticultural investigation in Great Britain and Europe, while carried on in a much more limited way than in America, has, on the whole, been more thoroughly done. The investigations being conducted on the Woburn Experimental Fruit Farm in England were planned with great care, and the work has been well done. The investigation there carried on into the cause of trees not thriving on sod ground as compared with cultivated soil, has attracted great attention. The results of the experiments in methods of pruning have also been remarkable, and the deductions which are being drawn from the results may prove of great value. The investigations of the firm of Sutton & Sons, Reading, England, with the potato, among which being the search for the causes of Scotch seed potatoes being better than English seed, and other problems, are very practical and valuable. At Cambridge University Mendel's law is now being tested in probably a more thorough manner than anywhere else. The Royal Horticultural Society has entered upon some carefully planned investigations at Wisley. Other agencies in Great Britain are carrying on investigations in horticulture, but there is not the same opportunity there as in America, where more than sixty colleges and stations, supported by State or Government grants, have

workers who in a greater or less degree are carrying on, or will probably in the near future carry on, scientific investigations in horticulture.

In France some important work has been done lately in hybridization by Daniel, who has proved apparently by many examples the influence of stock on scion and vice versa, in producing graft hybrids, which can be propagated true. In Germany important investigations in horticulture are also being carried on, one which may be mentioned being the effect of cold on plants.

The horticultural work of the United States Experiment Stations, where most of the horticultural investigations are being carried on now, began, for the most part, in the year 1887 with the passage of the Hatch Act. The work on the whole, until recently, was not of a sufficiently high order to be classed as investigation from the standpoint required in this article, although if the great number of experiments which have been carried on during the past twenty years had been planned with the object of searching for causes as well as getting practical results, the science of horticulture in America would have been further advanced than it is to-day. The pressing demands of the farmer and fruit grower for information prevented this, and many experiments have been reported upon without a single deduction being drawn. This more immediately practical work, necessary in its day, has gradually given place to investigations of a more technical character as the Experiment Station men have become older and are staying longer in one place. To encourage investigation in all branches of agriculture the Adams Act was

passed in March, 1906, by which each State and Territory is to receive \$5,000 for the fiscal year 1906, and \$2,000 additional every year for five years, when the grant will be \$15,000 annually. This is "to be applied only to paying the necessary expenses of conducting original researches or experiments bearing directly on the agricultural industry of the United States." The horticulturists will get their share of this grant, and will no doubt use it to develop horticultural science to the best of their ability. Some of the subjects of horticultural investigation under the funds of this act are: "The causes and means of control of fruit bud formation on the apple." "The physiology and philosophy of pruning and grafting." "The elimination of the color of peach twigs by breeding to make them less susceptible to early frost." "The factors affecting the setting of fruit on the tomato to determine the cause of failure to set in dry localities where the plants bloom freely."

Some of the most important scientific investigations in horticulture have been made in recent years by the Bureau of Plant Industry, Washington, where, with splendid equipment and well trained men, they are able to do good work.

A further aid to the scientific investigation in horticulture is the Society for Horticultural Science, organized September 9-10, 1903, the object of which is to "promote the science of horticulture." This society has held five annual meetings and has published one report of proceedings. The members of the Society for Horticultural Science are for the most part men connected with experiment

station work in the United States and Canada.

Having dealt with the present status of scientific investigation in horticulture in other countries, what is there to say of Canada? In any article of this length it is only possible to mention the main agencies at work.

The Dominion Experimental Farms were established about the same time as most of those of the United States, a little more than twenty years ago, and while some of the work done has been of an experimental character only, a large part of the experimental work at Ottawa was undertaken with the definite idea of not only looking for results, but, if possible, getting at the principles and causes underlying the results. These usually are not things which can be arrived at in a short time. The search for a hardy winter apple of good appearance and quality, with the reasons of why it is difficult to get one, has been one line of investigation, and, after nearly twenty years experience, the conclusions reached are being published, but the work is not yet complete. An investigation into the amount of heat required to ripen different varieties of grapes, with causes of some grapes ripening at lower temperatures than others, has extended over several years' experiments, but is not yet complete.

Is individuality in apple trees in its relation to fruit production only temporary, and if so, why, is being studied. The relatively successful results from natural crosses and those which are produced artificially is being studied with a view to possibly learning if there are affinities between varieties and what characteristics are necessary in both parents to get the best results.

The study of seedlings of a number of varieties of apples naturally crossed or self-fertilized to determine, if possible, the relative power which these female parents have in transmitting their characteristics to the seedlings, with the object of correlating the results, and if possible arriving at the principle involved.

The breeding of early tomatoes, both with a view to originate new varieties and to learn, if possible, what causes limit the time in which it is possible to ripen a tomato at Ottawa.

The Breeding of Blight Proof Potatoes and investigating the correlation between the season of the variety or individual plant and the immunity from disease.

The crossing of the wild Siberian crab—*Pyrus baccata*—with cultivated varieties of the apple to determine the influence of hardiness which the female parent exerts on the crosses and to arrive at some principle in heredity governing such influence.

There are many other lines of horticultural work being conducted at the Central Experimental Farm which might be mentioned where the aim is in addition to getting practical results to look for causes and underlying principles, but they need not be mentioned here. Accurate conclusions from such investigations cannot be drawn until after years of experiments, as hastily drawn conclusions are usually very misleading. We consider it much better at this stage of Canada's development to pay most attention to the more practical side of our investigations, believing this to be in the best interests of Canadian horticulturists at the present time.

The Horticultural Department of the Ontario Agricultural College,

Guelph, has done much practical work in horticulture, such as variety tests with fruits, vegetables and ornamental trees, shrubs and flowers, also experiments in cultivation, pruning, spraying, cover crops, etc., but like the Dominion Experimental Farms, most of the investigations into causes and principles have not reached the stage when conclusions can be drawn from them, and they have not been reported upon as completed. A valuable investigation is that in regard to learning the adaptability of varieties of fruits and vegetables to various parts of Ontario. There are 6,655 experiments with fruits and 1,481 with vegetables. Work in plant breeding is in progress, also studies on the fertilization of blossoms and self-sterility in apples. Individuality in trees is also being investigated.

Plant breeding is, perhaps, the most popular field for horticultural investigation to-day, and most of the experiment stations in the United States and Canada are now taking up this work, which is being much more carefully done than in the past, especially in regard to the keeping of records. De Vries, with his mutation theory and "Mendel's law," have set the breeders of plants thinking in new channels, and the results will undoubtedly be for marked progress and development. It is gratifying for Canadians to know that Canada is well to the fore in plant breeding, the names of such men as Arnold, Dempsey and Saunders being household words among the people. Through the enthusiasm of the last-mentioned plant breeding has been a prominent feature of horticultural work at the Central Experimental

Farm, Ottawa, for nearly twenty years. The results of this work are steadily increasing in value. The careful investigations of Groff in breeding Gladioli have a wide reputation, and the practical results he has attained by scientific methods are well known.

The investigations in recent years into the life histories of injurious insects and fungous diseases by entomologists and mycologists have done much for horticulture.

Subjects for Investigation Suggested.

The following subjects for scientific investigation in horticulture in Canada which might be taken up by those who are in a position to do so are suggested as being of interest and importance to Canadian horticulturists.

1. Investigation into the cause of death of trees planted in the fall, with study of the root growth, if any, which has taken place after planting.
2. Causes of high color in fruit.
3. Further studies on the causes of sunscald on fruit trees.
4. Causes of water-coring of apples.
5. Further studies on the causes of dry rot in apples.
6. Effect of different temperatures on different varieties of apples in the orchard at various stages of maturity, with a view to learning how much frost each variety will withstand, and the causes governing the ability of some varieties to withstand more frost than others.
7. Investigations into the question of hardy roots for the colder districts of Canada to determine if roots are made tenderer by the scion, and the principle underlying the relation between stock and scion.
8. Further studies on the question of affinities in plants.

9. Investigations into causes of the benefits, if any, of change of seed of vegetables from one part of Canada to the other.

10.—A study of the comparison between home-grown and foreign vegetable seeds, with especial reference to relative earliness and productiveness, with the object of reaching some conclusion as to the reasons why home-grown seed is preferable, if it is so.

There are many other important problems awaiting investigation in Canada when there are men and means for carrying on such work.

We believe that Scientific Investigation in Horticulture is bound to take a much more important place in the future than it has in the past. The rapidly growing population in different parts of the world demands an ever increasing supply of fruits, vegetables and flowers, not only because of the natural increase, but because more of these things are being used by the individual than in the past. Were we to depend solely on the commercial side of horticulture for development, it would not be long before development would come to an end. The commercial side of horticulture has an apparent predominant place in horticultural progress, but

this is more apparent than real. What part did the commercial side of horticulture play in the discovery of the value of Bordeaux mixture and the investigation into the life history of the fungous diseases which were to be treated by it? The commercial value of clover for ploughing under was known for hundreds, one might almost say thousands, of years, yet the discovery of the fact that the legumes take free nitrogen from the air has done more for the progress of horticulture than all previous knowledge. What was known regarding the causes governing the best way to keep apples until the science of cold storage was established and careful investigations made of fruit in cold storage?

Conditions are constantly changing, and to meet new conditions there must be an increase in knowledge. Commercial methods are at the best but of comparatively local adaptation. Causes and principles have a world-wide influence.

In an article of this limited length it has not been possible to go into the details of the investigations being carried on in different parts of the world. These, however, can be found in reports and bulletins, which are easily obtained.



The O. A. C. Review

EDITORIAL STAFF.

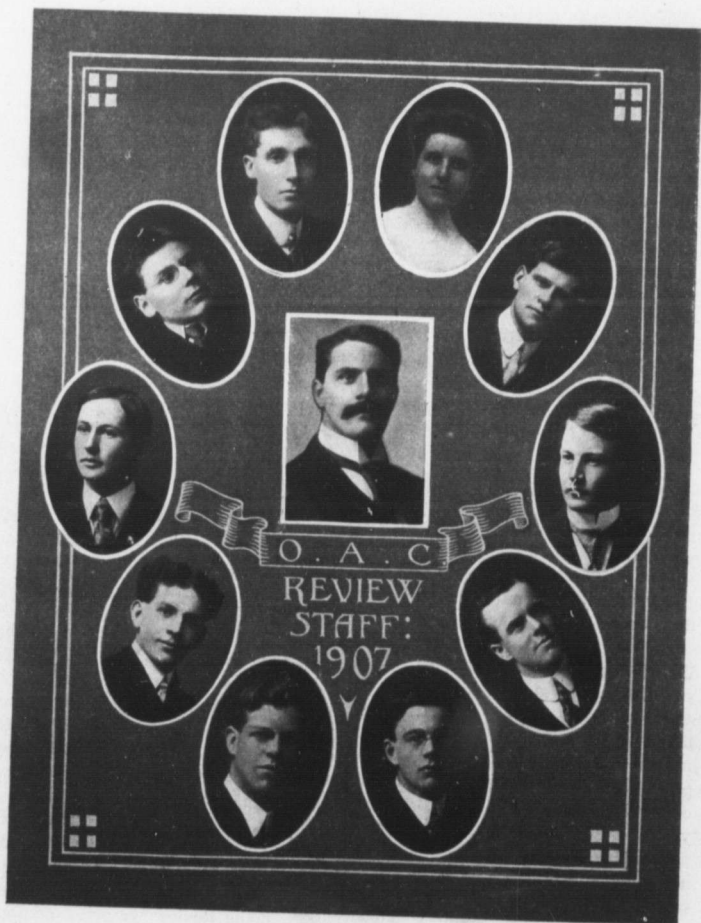
DAVID M. ROSE, '08	- - -	Editor
A. D. CAMPBELL, '09		Associate Editor
L. A. BOWES, '08, Agricultural.		MISS K. VAUGHAN, Macdonald.
A. E. SLATER, '08, Experimental.		H. SIRETT, '09, Alumni.
R. M. WINSLOW, '08, Experimental.		G. TURNEY, '09, College.
G. B. CURRAN, '08, Athletics.		G. LeLACHEUR, '10, Locals.
P. E. ANGLE, '09	Acting	Business Manager.

Editorial.

December brings us to the eve of the various Short Courses which are given annually at the O. A. C. Next month we shall be visited by several hundred young men (and some old men, too), who come here for the purpose of acquiring some special knowledge which will make their work next year more profitable as well as more pleasurable. Perhaps in no other way can a college of agriculture come so closely in contact with its constituency—the country—as through Short Courses given to men who are at the moment actually engaged in the practical problems of farming. It is impossible for everyone to spend four or even two years at a college, but there are very few men for whom a couple

of weeks is too great a time to be away from home.

What will a Short Course do for the man who spends the time to take it? This is a fair question, and one which should be asked by intending Short Course students. It should be asked in order that some aim may be in the minds of those attending the courses, for the man who starts off with a definite aim usually accomplishes something. He who works with no goal in view stands but little chance of reaching any. In another part of this issue of the Review we print opinions of men who have attended the Short Courses in previous years. Some of these men are well known figures at these Short Courses, others are less widely known. All are men of practical experience, men who



P. E. Angle, Business Manager.	Miss K. Vaughan, Macdonald.
G. Le Lacheur, Locals.	R. M. Winslow, Horticulture.
G. Curran, Athletics.	A. D. Campbell, Assistant Editor.
W. A. Bowes, Agriculture.	H. Sirett, Alumni.
A. E. Slater, Experimental.	A. G. Turney, College Life.
David M. Rose, Editor.	

are in daily contact with the problems of the soil. Therefore their opinions are worthy of the most careful consideration. What they have to say is more likely to represent the fair and absolutely unbiassed view than would words from college professors. We trust, therefore, that their opinions will be most carefully read.

Consequent upon a request received from the Short Course students in Agriculture last year, two weeks' tuition will be given this year in Horticulture. This will follow the course in Stock and Grain Judging and will immediately precede the Poultry Convention. This is a big step forward, and a fitting recognition of the growing commercial importance of horticulture.

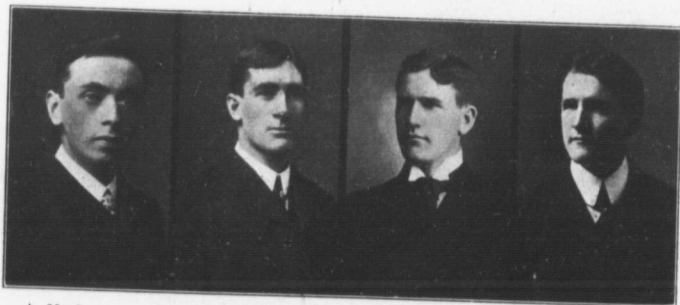
As an instance of this growing importance we may note that in the ten years 1895-1904 the value of the apples exported from Canada increased from \$1,821,463 to \$4,590,793, and the amount shipped to Great Britain alone

during these same ten years increased from 751,232 barrels to 1,513,744, an approximate increase of 100 per cent.

This course will be an eminently practical one, and will deal principally with phases of commercial work which count for so much in dollars and cents to the fruit grower. Spraying and spray machines and the actual preparation of spraying mixtures will have an important place on the programme, as will the packing of apples in boxes for export. This latter practice is somewhat new to Ontario apple growers, and as yet is little understood. Experts will have charge of the work and students will do the work themselves.

Mr. Alex. McNeil and Mr. W. T. Macoun, of Ottawa, will assist the staff of the College Department. All that is necessary to the successful working out of these plans is a class of live, energetic horticulturists, and there is little doubt but that such a class will be forthcoming.





A. MacLaren
Philharmonic

W. A. Brown
Literary Society

J. H. Hare
Athletic Assn.,

W. Baker
Y. M. C. A.

College Life.

Our Four Presidents.

W. Baker, '08, is preeminently fitted to direct such an organization as the Y. M. C. A. Since coming here in 1905, Baker has gained the admiration and esteem of the whole student body. An all-round athlete, a clever student, a forcible speaker, and a deep thinker, these four qualities combined with his great executive ability and profound interest in religious affairs make him probably the strongest president the Y. M. C. A. of this college has ever had.

W. A. Brown, '08—A thoughtful man this. Says little. Thinks a lot. Accomplishes much. Since assuming the control of our literary societies, he has introduced several important changes in the work in order to accomplish more thoroughly the purpose for which they exist. Under his leadership our literary societies should accomplish good work.

J. H. Hare, '08—Though not taking

a very active or prominent part in the sports themselves, yet Hare has always been an enthusiastic supporter of the various athletics organizations in the college and has proved himself to be a capable administrator. With "Jimmy" at the head of our Athletic Association, college athletics are sure to receive their full share of prominence and encouragement.

A. MacLaren, '09—A musical man is Mac. A clever student, a caustic speaker, and lest I forget it, let it be added that he is a Scotchman, and a pretty stubborn one at that. His executive ability early gained for him a participation in the directorship of the various student organizations, and his "unbull-dosability" has stood not only his class, but also the whole student body in good cause on more than one occasion. Mac believes that where there is no music there is no life, and as president of the Philharmonic Society

he is determined to make this year a red letter one in its history, and when Mac sets his mind on accomplishing a certain aim, it is fairly safe betting that that aim will be accomplished.

WORK OF THE LITERARY SOCIETY.

Alpha and Delphic.

The opening of the autumn session of the first Mock Parliament of the Dominion of Canada took place on October 18th, at 8 p. m., the Conservative Party in power. Mr. D. H. Jones, on account of his extensive knowledge of parliamentary procedure was unanimously acclaimed Speaker of the House. His Excellency the Governor General (Mr. Coglton) was enthusiastically received by the House, and he then read the speech from the throne, which was favorably accepted by the opposition. The first bill of the Government's new policy, providing for the exclusion of Asiatics was then introduced by Hon. Mr. Angle, the Minister for Home Affairs. A lively debate followed, the opposition, under the leadership of the Hon. Mr. Aitken, Vancouver, B. C., objected to the bill on account of the injurious effect which a restrictive emigration policy would entail on a sparsely populated country like Canada. No division was taken and shortly after 10 o'clock, the House adjourned.

The second meeting of the Mock Parliament took place at 8 p. m., October 20th. The discussion on the bill for exclusion of Asiatics was resumed. For the opposition, Mr. Todd, Jacques Cartier, in an able address dwelt on the humanity of the bill and the probable attitude of Japan if such a measure became law, and Mr. Bailey, Montmorency, laid particular stress on

the need of Asiatic labor for the successful development of the West. Mr. Middleton, Westminster, for the Government spoke of the undesirable qualities of the Asiatics. The bill was then read a third time, a division was taken and the bill passed by a small majority.

The Government then introduced a resolution respecting Canada and her treaty-making powers. A very lively debate followed and Mr. Caesar, Toronto West, in a very logical address upheld the attitude of Great Britain on former questions respecting Canadian boundaries. Prime Minister Slater, very caustically twitted the opposition on their lack of patriotism and high ideals. Considerable heckling and much disorder characterized this sitting of the House. The Government moved an adjournment, but the motion being rejected, a division was forced and the resolution thrown out. Shortly after 10 o'clock the Speaker, Mr. Dan. H. Jones, dissolved the House.

The third session of the Mock Parliament was opened in the Massey Hall, Saturday evening, November 9th, the late opposition (the members of the Delphic Society) being in power. His Excellency the Governor-General, (Mr. Graham) appeared for the purpose of opening parliament, but on finding no Speaker appointed, he withdrew. Mr. Angle was then elected as Speaker of the House. His Excellency the Governor General then reappeared and read the speech from the throne, which dealt chiefly with the prosperity of the country and the people and the business to be brought before the House. His Excellency's fitting reference to the 66th anniversary of the King's birthday elicited

prolonged applause from the House. Hon. Mr. Nunnich, Minister of the Interior, introduced a bill to prohibit the manufacture, importation, sale and use in Canada of intoxicating liquor as a beverage. The opposition under the leadership of Hon. A. E. Slater, agreed in the main with the bill but objected to certain clauses. Mr. Dennis, Berthier, for the opposition moved an amendment, which was still being debated on when a motion to adjourn was put to the House and carried. The evening's proceedings were then criticised by Mr. Buckingham, of Guelph. In his remarks, Mr. Buckingham conveyed to us an excellent idea of true parliamentary procedure and his criticisms of the individual speakers were just and de-

cidely beneficial. A hearty vote of thanks was then moved and tendered to Mr. Buckingham for his presence as critic of the evening's proceedings, after which the meeting adjourned.

Maple Leaf Literary Society.

The Maple Leaf Literary Society held its first Mock Parliament in Massey Hall on the 66th anniversary of the birthday of His Majesty King Edward VII.

With fitting pomp and ceremony the Legislative Assembly opened its first session under the leadership of Premier Clement. Mr. Schartow was formally acclaimed Speaker of the House and shortly after half-past seven Lieutenant Governor Murray read the speech from the throne. Lieuten-



THE PARLOR IN THE RESIDENCE.

ant Governor Murray then retired and without any debate on the speech from the throne, Premier Clement introduced a bill for the protection of the insectivorous birds of the Province. A lively discussion followed in which the Government was upheld by Messrs. Baker, Emmerson, Shibley and Orser, whilst Messrs. Edgar, Coglon, Smith and Galbraith for the opposition criticised the ambiguity, crudeness, and general inefficiency of the bill. No division was forced and the House adjourned.

The Maple Leaf Literary Society is to be congratulated on the business-like attitude of its officers and members in this their first experience of parliamentary procedure.

Organization of the Camera Club.

On Monday evening, November 4th, a meeting of those interested in photography was held for the purpose of forming a Camera Club. The officers elected are as follows:—President, E. J. Zavitz; vice-president, W. R. Thompson, '09; secretary, J. W. Jones, '10.

The organization of this Club is a much needed step in the right direction and will no doubt encourage the use of photography in the procuring of more accurate and reliable results in research and treatise work. We understand that Mr. Zavitz has kindly consented to deliver lectures upon photography to the members. Ar-

rangements are now under way for the provision of a commodious and up-to-date dark-room, to be fitted with all the requirements of the camera enthusiast. A constitution is being drawn up and it is expected that by the commencement of the winter term, the "Camera Club" will add one more to the sum total of active and effective student organizations.

The Philharmonic Society have issued a neat little booklet of College Songs and Yells. There are about thirty-six songs and the two college yells, the whole being neatly enclosed in a red cover bearing the college coat of arms. The distribution of this book amongst the students should help materially in the formation of a strong college spirit and the officers and executive of the society are to be congratulated on its issue.

For some years the fire appliances in the residence have been in poor shape and quite unequal to any call upon them, should such have been necessary. These appliances have recently been overhauled and the fire extinguishers are now all in good working order. Red night lights have been installed near the fire escapes, and the possibility of a stampede in the dark has been averted. These improvements give a sense of security to the students in residence, and they are grateful that these matters have been righted.

Athletics.

O. A. C. vs. Trinity College.

THE College Rugby team met Trinity on the O. A. C. campus Oct. 26. Although the game was only an exhibition, nevertheless a great number of "fans" were in attendance and displayed a great deal of enthusiasm during the contest. The game was somewhat one-sided as indicated by the score: O. A. C., 39; Trinity, 2. Since our last game with McMaster there has been great improvement in the team and as the boys played against Trinity they could have given McMaster a good run for their money. All the men played well but, perhaps, the tackling and defence work of Murray, the aggressive work of Jones and Hoy, with a few sensational dashes by Lewis and D. Mackenzie were the features of the game.

For Trinity, Rossiter, at half, was the main stay of the team, his catching and kicking being good. Their scrimmage worked well, Holmes at centre kicking the ball out exceptionally well. Widdifield at quarter worked hard, and did good work considering the weak line. Although their team was a good deal lighter than ours they played with dash but could not penetrate our hardworking forward line.

Teams lined up as follows:

College — Full back, Treherne; halves, Murray, Hoy, Jones; quarter, Knauss; scrimmage, Moorehouse, Middleton, Clowes; inside wings,

N. McKenzie, Cleverly; middle wings, Lewis, (Captain), Kennedy; outside wings, D. A. McKenzie, VanBuskirk.

Trinity—Full back, Beasley; halves, Rossiter (Captain), Blyth, Outerbridge; quarter, Widdifield; scrimmage, Morgan, Wright, Holmes; inside wings, Wilson, Mowat; middle wings, McMichael, Spencer; outside wings, Stuart, Brown.

O. A. C. at Victoria College.

Our College Football team closed their season on Nov. 9th, by defeating the Victoria College aggregation quite handily by the somewhat one-sided score of 20 to 4 on the latter's own grounds in Toronto. The O. A. C. boys excelled their opponents in all departments of the game, being much superior on the line in bucking, running, and general team play. As before our weak point lay in punting.

It was easily seen from the first that the O. A. C. team were much the heavier and when play started they jumped into the game with a dash that carried the Vic's clean off their feet. Lewis started the ball rolling by a good run of 25 yards. Jones immediately followed with another long run and Treherne kept up the good work by breaking through and carrying the ball nearly to the Vic's line. O. A. C. bucked over for the five points and Jones easily converted. At this stage of the game our boys

plainly had their opponents mystified, bringing the ball out in unexpected places and as a result making big gains. At the resumption of play, Knauss and Murray essayed some spectacular combination for a gain of 25 yards. Treherne followed with a nice run, and Jones kicked over for a touch in goal. Treherne fell on the ball at this stage and hurt his rib, but pluckily played till the end. The feature of the game occurred when Lewis in a mix-up secured the ball and left the whole field behind, making the record touch. Jones could not convert. Half-time score, 13—0.

After the interval the Vic's picked up greatly and easily made some of the prettiest combination play of the day, the ball passing between four or five players for a gain of 30 yards. However, the O. A. C. backs were on the alert, and Jones secured the ball, making the best run of the day for 30 yards, bringing the ball to Vic's 20 yard line. This play was followed by Lewis again breaking through for another good run. Jones kicked two rouges in quick succession. Vic's took a spurt and carried the ball well up the field, but the spurt made them dead for the rest of the game. Within five minutes, Jones again took the ball from a punt and made a star play, running through a broken field and warding off tackle after tackle in a spectacular fashion, evading the last man as easily as he had the first and trotting over the line for the final touch down of the day, which was not converted. From then our line was never in danger, the game ending 20—0 in our favor.

O. A. C. lined up as follows:

Fullback, Treherne; halves, Murray,

Hoy, Jones; quarter, Knauss; scrimmage, Moorehouse, Middleton, McCrae; guards, Cleverly, McKenzie; tackle, Kennedy, Lewis; wings, D. McKenzie, VanBuskirk; spare, Cutler.

O. A. C. Second Team Defeat Guelph.

Our second team broke into the game on Saturday, November 9th, by defeating a G. C. I-Banker aggregation by the score of 26—5. In general team play our boys far excelled the city men, who showed a deplorable lack of unity due to their never having played together before. Our whole team were much the heavier, and time and again bucked for their yards, while they always held their opponents' line safe. On their back division, Buchan at centre half was the whole show, his kicking and handling of the ball being remarkable for the protection he received from his line. Gordon, at left half, ably assisted him. For the college, Harries, at full, showed rare ability to use his hands and feet to advantage, making a nice drop goal from 30 yards out. Clement did some nice bucking and Edgar used his weight to advantage. The line was very strong and followed up well. Throughout the whole game, the college had all the better of the play and should have shut their opponents out, but for one bad fumble by the back division behind the college goal line. The final score was 26—5 for O. A. C.

O. A. C. was represented by:

Fullback, Harries; halves, Shaw, Clement, Edgar; scrimmage, Marri-son, Christie, Cunningham; guards, Culp, McFayden; tackles, Owen, Lawrence (Captain); wings, Coke, Woods; subs., Fairhead, Rice.

Lessons of the Rugby Season.

The past season has not been a wholly successful one for the College team. A few timely hints may be taken from our mistakes of this year, and such matters remedied as far as possible by next year. Our greatest mistake was lack of an early start. Practice was neglected until a few days before our most important match and as a result, our team went on the field without system, without team work, and were soundly defeated. With another week's practice practically the same team went down to Toronto and outplayed their opponents all along the line losing only because of lack of punting ability. An early start would have given us a chance of getting into shape and showing our true form early in the season. When practice did start, very little was accomplished. We were slow in turning out, and the team lined up against twice their number of men, who were mostly learning the game. It would be a great improvement, if at every practice, two full teams were posted on the bulletin board every day and a regular game held every afternoon. Players would then get practice and experience in real games. Rugby is nothing if not system, and it requires a lifetime to learn all the tricks and wiles of the game. New men who wish to learn the game should have time and attention given them outside the regular practice. Much more attention should be paid the second and third teams and games arranged for them earlier in the season. Thus, at the end of one season, a man would learn the game by experience in real games and in one or two year's time, would graduate from the third to the second, to the first

team and be a star of the first magnitude. There is no reason at all why we should not have four strong teams at this college. We have 250 strong husky men to pick from each year,

Our greatest defect this year lay in the weakness of our back division in punting, drop-kicking, and in catching the ball. Fumbling was all too frequent, while the kicking was very mediocre. There is a reason for this, and the reason is—*lack of practice*. Our back division could very profitably spend hours in practicing drop-kicking, long, high punting, and in catching long punts. Practice makes perfect, and the trick once learned is not soon forgotten. A special time should be given to this work, and two back divisions lined up against one another for practice in punting and catching. The art of drop-kicking has reached a high degree of perfection this year in the Canadian gridiron, and its mastery has enabled* team after team to triumph over others fully as strong on the line. Next year we hope to see the football season commence with the opening of college; Sports Day, though very important, should in no wise interfere with regular team practice.

Cross Country Run.

Our annual cross country run was held on Saturday, November 10th, at half-past one o'clock. The day was bright, the air fine and bracing, yet not too cool, and the track was in fine condition, although muddy in spots. The new Hallman-McKillican trophy was the prize to be competed for, and an even dozen starters faced the line. Bray, who last year gave Walter Kerr such a hard run, was the favorite, and was looked upon by most of the

students as the probable winner. A hot pace was set up from the start, but after a mile or so Aldwinckle Bray and Shaw forged to the front and passed the college at the end of the first half in that position. Aldwinckle was running freely with a light, long, springy stride, while Bray and Shaw were both running rather heavily. Aldwinckle let out a little on the down grade, but could not draw away from Bray and Shaw. It was a great race at this stage, as the three competitors were well bunched and it looked any man's race. However, no change in position occurred. On the home stretch Aldwinckle was comparatively fresh and spurted away from Bray, winning by three hundred yards, and running without distress. Bray looked tired when he came in and was slightly lame, owing to a strain of his ankle. Shaw pushed Bray hard for second place, but had not the reserve force necessary to sprint at the finish. Haight ran well to come fourth and Armstrong and Howell came in fifth and sixth respectively.

The winner, J. Aldwinckle, won in the fast time of 33 min. 11 secs., and worthily upheld the reputation of Englishmen as the best long-distance runners of the world. John is an Englishman through and through, a regular John Bull in voice, actions, and manner, and deserves great credit for running the race he did. He was the surprise of the day, and we hope he will keep up his good work, by winning the race the next two years and by carrying the silverware off with him.

Thanksgiving Day.

Everything combined to make this holiday of the year one of extreme

pleasure. Health, sunshine and fine weather, together with a real feeling of good fellowship among the students were prevalent everywhere. The entire morning was taken up by a series of association football games. Four full teams were formed—one being a team composed entirely of Englishmen—two others being teams whose men hailed from Ontario, and the fourth team was a horrible mixture from other parts of the world.

The first game of the morning was between the all-England team and the Ontario Alphas. Every man was fresh and in good trim, consequently this game was characterized by plenty of dash, clean play and fine forward work. Ontario scored the first point of the game and at half-time there was no advances on that score. The English forwards now got together and as the result of a fine run from one end of the field to the other the score was evened. And so the game ended a draw, but it was decided to finish after a rest and after the Ontario Delphas and the remainder had played off. This game cannot be said to be as good a type of association football as the former game. There was too much "bunching" of players on account of their not holding to the places set apart for them. However, in its entirety, it was a good game and fully sufficed for what it was intended. The result was a win for Ontario Delphas by 2 points to 0.

Then followed the finals of the former game, and after 20 minutes play the Englishmen scored another point and so beating the Ontario Alphas by 2 to 1.

In order not to prolong this series of games on into the afternoon, the



J. W. Jones, Champion in Weights 'Varsity Games, '07.

Englishmen decided to play the finals with the Ontario Delphas at once in a half-hour game. But so much playing was fatal to them and they had to bow down to a score of 1-0 against them.

So ended a fine series of games undertaken for the health of humanity, and for the furtherance of the sporting ability of the student community.

In the afternoon R. N. Bray, '09, upheld the honour of the college in the 5-mile open race, in which he came out with 6th place in a large entry. W. L. Haight, '10, was also another entry from the college but was incapa-

itated in some way, and consequently was unable to finish.

In the evening the Toronto Harriers Club was invited up to the college gymnasium and there gave exhibition games of baseball and basket ball with the O. A. C. team. Suffice it to say that they received a bad beating in both events, but at the same time it must be borne in mind that it was only a "scrub" team we were playing, and was very far from being the Toronto club's best team. Van Buskirk, '11, deserves special praise for his remarkable shooting in the basket ball game.

The Rink Fund.

At last we have some tangible results to place before the present students and before the ex-students in every part of the world. On the following page will be seen a detailed account of some subscriptions which have already been received.

To the class of '07 we are indebted

for the impetus which they have given this cause—a cause which portrays unselfishness in a strong degree in placing in the hands of future students sums of money, for their benefit and amusement.

The student body are especially indebted to Reg. Mills, the president of

the class '07, for the interest he managed to awaken among the members of his year.

The next pioneers of this cause are here right in our midst. Unbeknown to us, unseen by the ordinary student, we have among our staff men to whom the student body of to-day, and again, the student bodies of the future are especially thankful. Without the aid and sanction of these men whose names appear on the following page we would be entirely unable to carry through this, such a big undertaking.

Their hearty support show us and everyone the spirit that prevails at

the O. A. C. in regard to this matter. Therefore, let us all work together for our one common good. The Executive are taking steps to get into touch with all our ex-students and friends of the college, but let anyone help.

Help can be given in many ways. The students at present registered can assist us exceedingly by handing in such names and addresses of men who in the past were interested in the college. The ex-students can help us by giving us their hearty support, and when they are able their financial aid.

We have the following promissory notes in hand:

Graduates of '07.

R. W. Mills	for ..	\$25.00
F. H. Reed	" ..	25.00
T. W. Crow	" ..	25.00
G. E. Sanders	" ..	25.00
W. J. Hartman	" ..	25.00
H. W. Scott	" ..	25.00
M. F. Coglou	" ..	25.00
F. Prittie	" ..	25.00
W. S. Jacobs	" ..	25.00
H. C. Wheeler	" ..	25.00

Other Graduates.

T. D. Jarvis, Esq.....	for ..	\$25.00
J. B. Fairbairn, Esq.....	" ..	25.00
W. P. Gamble, Esq.....	" ..	25.00
H. H. LeDrew, Esq.....	" ..	25.00
Prof. S. F. Edwards	" ..	25.00

The Hockey Outlook.

Are we going to have a winning hockey team this winter? The matter rests entirely with the students. Prospects are bright, exceedingly bright. There are a number of fine hockey players now attending the college. If every student who possesses any ability to play hockey would get

out at the first of the season and work hard to make the first and second teams, hockey would loom this coming winter. Even if you don't make the first team, you make some one else work very hard to beat you, and you give the first team the practice they need so much, early in the season.

There is no disgrace in being beaten out of a place by an old experienced player, and your turn will come next year, or even later in the season. One thing, there is no favoritism shown here. A man gains his place by merit done and holds it only by consistent work. We are to be represented in the Intermediate Intercollegiate League this winter, and it is an honor indeed to represent your college in any of these games.

Most of the old team are again ready to don their skates. Hoffman will again don the pads and gloves in goal, while Christie, Johnson, Edgar, Foster, Hodson, French, Middleton, Curran, Fairhead, Archibald and others will fight it out for the other positions. We have plenty of good material, but it must be whipped into shape, and an

early start and good condition of players is essential.

A note of warning to intending hockey players. Rule number three of the I. C. H. U. States is, that no player shall play for more than one club in any league match or championship game in the same college year, except in case of a bona-fide change of residence to be dealt with by the Executive, and no player shall compete who is not an amateur of good standing. Any player taking part in any O. H. A. games or in matches of any recognized league will be unable to participate in any college games this winter. We hope this word of warning will be rigidly adhered to, especially during the Christmas vacation, so that no mix up may occur later in the hockey season.



Our Old Boys.

FS. JACOBS, B.S.A., '02, was formerly Associate Editor of the Winnipeg edition of the Farmers' Advocate, now he fills the Editor-in-Chief's chair; well filled, too, for Jake has grown tall across. The boys of the First Fourth Year and others who knew him will doubtless remember how he used to smile—oh, what a wise knowing smile it was—when some poor, unfortunate got fast in the toils—heart trouble—caused in those days by too frequent journeys down town answering telephone calls. ("Red hot, ringing telephone calls!" as Dr. Mills once put it, when he was reasoning with the boys on the errors of their way.) Now the "Hall" causes Moon struck students ('09 excepted), even on the Day of Rest, to send Peace Offerings of green tomatoes. But this is digressing. It was in London at the home of Dr. Earnest Williams that Jake went down—defeated. Never afterwards was he seen to wear that old cynical grin. We blame him not—the enemy was wondrous fair, wise and clever—*Tempus Fugit*.

On Wednesday, Sept. 11th, '07, at the summer home of the bride's mother, on one of the Rideau Islands, by the Rev. J. MacLeod, M.A., Mr. Frank S. Jacobs, B.S.A., of Winnipeg, to Miss Eva Williams, of London. Miss Mabel Williams assisted the bride, while Dr. A. G. Hopkins supported the groom. After luncheon, the happy couple left for Quebec and

other points along the St. Lawrence before leaving for Winnipeg, their future home. May a long and happy life be theirs and their troubles only little ones.

Dr. A. G. Hopkins, D.O.C., '99—Early in June of the present year Hopkins resigned his position as Editor-in-Chief of the Western edition of the Farmers' Advocate, Winnipeg, and came east to join the large, but still rapidly increasing staff of the Veterinary Director-General and Live Stock Commissioner, Dr. Rutherford, '81. At present he is taking the place of Dr. Hilton, the Director's Chief-of-Staff, who is in the west superintending the taking over of the veterinary work formerly under control of the R. N. W. M. P.

The gallant D. O. C. is hale and hearty—just as game as when, through rain and mud, he led the College Fire Brigade in its memorable advance on the "Dairy Piggery," or presided at the "Post Mortem" of the "Lamb That Was Slew," described by the poet Morgan. The same in all, save—he seldom now uses the voluminous adjectives with which he exhorted Père Grisdale, Kennedy of Ames, Hume and other familiar spirits of the Brigade to run yet faster for the honor of their D. O. C., and to which, because of the impedimenta, they were unable, though not unwilling to make fitting replies. Even Père Grisdale

through the benign influence of a good wife and happy family is growing mild.

C. I. Bray, B.S.A., '04—After graduating, C. I. went to Mississippi as Associate in the Animal Husbandry Department. Taught the Southern boys a few tricks in cattle feeding not known there before; particularly in making fatter cattle for less money. In July he came north for a well-earned holiday, and visited his Alma Mater. He is just the same Colonel and assured the boys he met that there were no exceptionally brilliant feats to report, just honest plodding, but added, while one of his old time grins mantled his face—"I was always a ten miler, so if my wind stands out I may yet come up the home stretch in sight of the other stars!" He will.

F. R. Marshall, B.S.A., '99, lately of Texas Agricultural College, has once more moved north, and Ohio will profit by the change. Marshall, though a young man, already has a good record behind him. As Lecturer at Ames, Manager of the Cook Farms, Professor of Animal Husbandry in Texas, and later Director of the Station, he has shown himself a worthy son of his Alma Mater, in whose prosperity he is always interested. That even greater success may attend him in his new sphere as head of the Ohio Animal Husbandry Department is the worst wish of the old O. A. C.

Joseph Cote, '96-'98—After leaving the O. A. C., "Joe" went to the D. M. Ferry people, Detroit. For a couple of years he worked in the Laboratory

until he had become quite familiar with the seed work; then he went on the road. The Province of Quebec and the State of Mississippi were the lands in which he had to travel. The fact that Chief Clark, of the Dominion Seed Branch, secured his services to take up the work in Quebec, is evidence enough that he was a successful seedsman. For the last four years he has worked steadily and successfully to improve agricultural conditions among his countrymen. Nothing succeeds like success. One fine morning this summer "Joe" told L. H. Newman that he had been doing "Stunts in High Finance." A few minutes later he confided to F. G. Raynor that he believed it was not well for a man to live too long alone. F. G. being wise and experienced, agreed, and advised him to forsake the company and paths of Newmon, Mortereaux, Milligan, Miller and MacRae ere it be too late, and Joseph promised. On October 17th, at the Church of the Holy Angels, Beaumont, Quebec, Miss Eva Turgeon, sister of the Hon. Adolard Turgeon, Minister of Mines and Forests, in the Quebec Cabinet, promised to take Joseph for better or worse, and, like Pallas of old, to cleave unto him, while life shall last. The Review and all its readers join in wishing Mr. and Mrs. Cote "Bon Voyage" through life.

There is no success that attends her ex-students that is a source of so much gratification to, nor, perhaps, none that speaks more highly for the value of the training afforded by the O. A. C. than that success which is the reward of those of her sons who, on leaving their Alma Mater, turn their



attention to the active pursuit of farm husbandry.. R.. E. Gunn entered the college in the fall of '00, and is the only student who has yet



"The House that R. E. Gunn Built."
The Barns in rear. Pig Pen in fore ground; 19,000 Square Feet Under Roof.
DUNROBIN STOCK FARM.

taken the 3-year course in farm management. On leaving in '03, Gunn commenced farming on an extensive scale on his father's farm at Beaverton, Ont. His love for live stock has caused him to make his herd of pure bred Clydesdales, Shorthorns and Yorks among the best in the Province. Born and raised in the city, Mr. Gunn makes no secret of his belief that he owes much of the success of his enterprise to the training he received

during his three years on College Heights. Mr. Gunn's young son Donald, who appears in the cut below, waits but for the lapse of such time as will permit him to enroll as "a freshman" at the O. A. C.

Among the Old Boys who visited



R. E. Gunn's Young Son, Donald.
The Mare Weighs 2,000 lbs.; The Boy, 30 lbs.
A FUTURE O. A. C. FRESHMAN.

the college recently was M. S. Galbraith, '04, now head of the Department of Agronomy and Seeds, Orange River Colony, with headquarters at Bloemfontien. Mr. Galbraith was secured for his present position immediately upon receiving his degree. He sailed for South Africa early in July, '04, and assumed his new duties on Sept. 1st. One of the problems to solve was the supplying of seed to the Dutch farmers, whose farming operations had been demoralized by the recent war. This was done by the department importing seeds and distributing them among the growers. This work has proven to have been particularly successful. He has also superintendence of two experimental farms situated respectively nine and fifty-eight miles from the central office at Bloemfontien. Mr. Galbraith left for Canada about the first of last August. While in this country he spent the greater part of his time at the home of his parents at Ellesmere, York County, and with his brother, D. H. Galbraith, '03, Nanton, Alberta. In answer to inquiries about old boys in South Africa, he stated: W. J. Palmer, '91, is still at the head of the Department of Agriculture of the O. R. C., and is the "man behind the gun" in the work of improvement of agricultural conditions. E. J. McMillan, '00, is assistant director, and is doing excellent work in the live stock division. "Billy" Dewar, '04, is Government Entomologist for the Eastern Provinces of Cape Colony, with headquarters at Grahamstown. He is highly pleased with the opportunities this new field offers for research work.

Mr. Galbraith sailed from Montreal, Nov. 7th, for England, where he will



M. S. Galbraith.

spend a couple of weeks before embarking again for Cape Town.

All who are at all acquainted with the students of the past few years know well the name of Walter Kerr. Kerr entered with the class of '08, but dropped out early in his third year. As an athlete he stood among the first, not only in his class, but also in the whole college. For three years in succession he won the championship medal on Sports Day, and just as often did he win the five mile cross country run; by so doing, becoming in the fall of '06 the possessor of the Dryden-Doherty cup. Walter was not one to talk of the prizes for which he strove, and few had guessed when he left the college last November that he was training for a still greater prize. Had they done so they were equally few

who would have doubted his ultimate success. On November 6th a quiet but extremely pretty wedding ceremony was celebrated at Balsam, Ont., when Walter A. Kerr led to the altar Miss Janet Barbara Davidson, daughter of Jas. I. Davidson, of "Sittyton Grove." Mr. and Mrs. Kerr left for a month's trip to Chicago, Des Moines and other Western points. On their return we understand the happy couple will reside at "Sittyton Grove," where Walter will put into practice the truths he learned while at his Alma Mater. May gentle zepthers attend their bark on its voyage over life's troubled waters, that it may never know the reefs of adversity or the shoals of dissention.

Those in attendance at College Heights during the years '99-'00 and '01 will remember J. P. Cleal. Hailing from the land to the south of our borders, "Yank" possessed all the characteristic energy of his American brethren. "Yank's" career at college was on a par with his inherent nature. He was eternally doing things. After leaving the college Cleal went west to take up ranching at Airdrie, Alberta. After some five years' experience in the "wild and woolly west" the joys attending blessed, tho' solitary singleness, were overcome by the wiles of Cupid, and now "Yank" vows that he never before imagined that trotting in double harness was such unmixed joy.

Married—At Calgary, Nov. 4th, Joseph Pacy Cleal, Airdrie, Alberta, to Miss Mary Adelaide Busselle, of Guelph, Ont.

Jack Weir, '03, he who dearly loved spiked shoes, skates and hockey

sticks, is now a settled, industrious horse rancher in the Knee Hill country, northeast of Calgary. Jack has some very good foundation stock, and during the three or four years he has been ranching has been very successful, and bids fair to become one of the great Western stock Provinces foremost breeders.

Ives Pope, '01—Northeast of Calgary, about fifty miles in the Knee Hill country, and hard by Jack Weir's horse ranch there roam upwards of two thousand black cattle carrying Ives Pope's brand. Good cattle, too, and well taken care of, for in spite of last winter's snow and fresh invigorating breezes ninety per cent. of them pulled through. "Ten per cent. lost" did we hear some one cry—yes, ten per cent.; better than ninety. No loss at all last winter. Ives' shadow has increased since the days when he belonged to the O. A. C.'s red line. He says the West and the simple life agrees with him.

John Bracken, B.S.A. '06. After graduating, Bracken joined the staff of the Dominion Seed Commissioner as Manitoba representative. This position he filled till last spring when a more tempting offer came to him from Saskatchewan. He is now Superintendent of Fairs and Institutes in the Mighty Wheat Province, working away with the same zeal that kept him in the van in his student days. His superior officers are the Hon. W. R. Motherwell, '81, and A. P. Ketchen, B.S.A., '03, respectively Minister and Deputy Minister of Agriculture. Coming East next year?

E. D. Eddy, B.S.A., '05—From Guelph Eddy went to the Sun, Toronto, for a year, thence to the Nor'West Farmer, Winnipeg, where he and Esmond, of the same year and like degree, were the Agricultural Editors. When Bracken moved westward in accordance with the sage advice of "Go West, Young Man." E. D. was chosen to fill his shoes and though they were large ones the quiet '05 man is making good.

R. H. Williams, B.S.A., '05, who afterwards took a post graduate course at Illinois, and last spring received his M. S., has gone to Ohio as Assistant to Prof. Marshall in the Animal Husbandry Department. R. H. has had an exceptionally good training, which, coupled with his love for animals, will stand him in good stead in the coming years. We know he will make good.

Brother Wheelwright—He of the large trousers, long stockings and large "piape" of the years between '94 and '04—well he is alive and moving. Not changed one bit; not even the little dog trot he had when going from the corner to the college or back for meals. Had the trot, piape, etc., last spring when he came in from the Knee Hill country to the Calgary Spring Show. "Just tore himself away" from his "ravnch" in Pope and Weir's country, for a day or two to purchase new stores (chiefly smokeables and drinkables) and to shake with some familiar spirits of the Good Old Days—such as will never come again.

H. S. Hammond, '06—Hammond entered the college in the fall of '05, graduating the following May. During his year's work he gained a reputation as a conscientious student. Soon after receiving his degree he accepted a position at Kingston, R. I., where he remained until a few weeks ago when he accepted the position of Assistant in Chemistry at the MacDonald College, St. Anne.



TO OUR OLD BOYS.

The object of these columns is to furnish from month to month some information to the large body of ex-students of the welfare and whereabouts of as many of their college associates as knowledge of them permits. You are interested in this information and we ask you to remember that in all probability some of your chums of the good old days would like to have an idea as to what you are doing. If your innate modesty will not permit you to write about yourself send us an account of the progress and weal of some other ex-student whom you may know.

We beg to acknowledge the receipt of information of this nature from some of the ex-students whose interest in their college magazine has not waned after leaving the college halls. Let these pages be a medium of communication between our "Old Boys," so that each number will enable you to live over again some of the good old days that for you are past.—Editor.

Macdonald.

Flour Work.

MANY girls begin their professional course in Household Science with the intention of becoming dietetists, housekeepers or teachers, but few of them think of the other positions for which their training at Macdonald so well prepares them.

Among the newest and most interesting branches is the Flour Work. This has many attractions, and a number of our graduates have already been claimed by the Ogilvie Flour Mills Company of Montreal, where the work is carried on more extensively, perhaps than in any other place. Here, in a laboratory which is splendidly equipped for the work, the different grades of flour are tested daily,

both by baking and by chemical analysis.

From each sample of flour a loaf of bread is made under exactly similar conditions, and after the volume and weight of the loaf have been taken, it is cut longitudinally and judged for color, shape and texture. In this department, too, the per cent. of gluten is obtained by baking the gluten balls.

In the Chemical Department the flour is carefully analyzed and per cent. of ash, fat, gliadin, soluble and insoluble proteid, and the acidity are determined.

The mechanical fineness of the work, and the accuracy which it requires, makes it intensely interesting to all who undertake it. C. Elliott.

Y. W. C. A. Cooking Classes.

Teaching cooking in a Young Women's Christian Association is not essentially different from teaching the same subject in any other school. And teaching in Montreal is the same as teaching in any other place. The scope of the work in an institution of this kind is perhaps a little broader, owing to the character of the work done, and to the personnel of the classes. It seems rather shocking at first to give a first lesson on angel cake or a fruit chartreuse, especially when the stu-

dents have never even broken an egg and do not know the rules for boiling water. But they get along surprisingly well, and soon learn how to encounter difficulties.

Here in Montreal we have classes during morning, afternoon and evening, with always a public demonstration Monday evening. The morning classes are composed of ladies who take either a plain or a fancy course. In the afternoons we have classes in waitress work, classes of children,

school girls or private lessons. The evening classes consist of business women and cooks. We are now organizing a class for men in camp cookery, which promises to be the most popular, interesting and instructive of all.

Our extension work consists mainly in demonstration work in the churches in poor districts of the city. In this way we hope to interest these people in marketing, cooking and serving wholesome food properly and economically. We also have the promise of co-operation of manufacturers who employ many women, and we hope to do much for them.

So much for the work. As for the

life, we have a trio of '07's here in the house, so we have regular old Macdonald times. Our worries and troubles are somewhat different from those of the old days, but the old spirit still lives, and our celebrations are about the same. And when we meet an old Macdonaldite or resident of Guelph—as we occasionally do—how we do talk!

We have room in some of our classes for more pupils, so send in your applications and come away down to Montreal for a course in the Y. W. C. A. School of Cookery.

Kate P. MacLennan.

Domestic Science in a Factory.

Five years ago the Williams, Greene & Rome Company, manufacturers of shirts, collars and cuffs, started welfare work in their factory. During that time they have given to their employes a dining-room, a library and reading-room, large athletic grounds, a large Welfare Hall, where they hold literary meetings every two weeks, a rest room for the girls and a club room for the boys, with baths in each.

Last year they decided to start Domestic Science classes for the girls. Tables were fitted up in the dining-room and a large cupboard was put in. An individual equipment was installed, a copy being made from the kitchens at Macdonald Hall.

We started with two cooking classes, a sewing class and one in basketry. These were all held in the evening between 7 and 9. The girls paid a small fee to belong to the class, and we have tried to cover the expense of

the materials used in the classes by this fee.

We found that the girls did not take much interest in the theoretical part of the work, and we found that we had to put more stress on the practical part. We have had to change the hour of holding our classes from 5 to 7. So that the girls do not have to come back for their class.

Although at times it has been pretty hard to keep these classes together, we have never had better attendance than we are having now, and feel sure that this most interesting work will continue.

Hallowe'en.

All was hustle and bustle in Macdonald Hall on Wednesday afternoon, in preparation for the departure of some of the girls to spend Thanksgiving at home. A lonely day had been prophesied for the others, but in reality a far different one was spent.

The cheerful bright morning seemed to serve as an inspiration, and, after a long walk before breakfast, the spirits of the girls were aroused to activity, and great plans were made for a day's fun.

During dinner everyone seemed happy in spite of the deserted appearance of the dining-room, and plans were completed for a Hallowe'en party in the gymnasium in the evening. Dinner over, a quiet, enjoyable hour was spent around the fireplace in the Institute reception room and then the girls dispersed to attend to their different duties in connection with the evening's fun.

The ingle corner of the gym. looked as cosy as possible, as the decorations were about complete, it was agreed by all that to make an ideal Hallowe'en scene, pumpkins were necessary, and four girls at once started out in search, but returned announcing their "fruitless" efforts.

They had not been long back when the door bell was given a vigorous ring, and there on the threshold stood three O. A. C.'s carrying a pumpkin under each arm. The unexpected presence that answered their ring, and in sympathetic tones asked them to deposit their burdens in the gym. seemed to disconcert them, and their hasty retreat to their own domains left no chance for the girls to express their thanks to those thoughtful boys.

At length arrangements were completed, and supper being ended, girls and teachers, intent on Hallowe'en fun, wend their way to the gym. The scene is most attractive and inviting, the fire in the grate is burning huskly, and candles gleam from every nook and corner. The witch, from whose face shine out weird forebodings now

takes her place and in dreadful tones predicts future joys and sorrows and admonishes and warns her eager listeners as she reads palms by the glowing firelight.

Ghost stories and weird stories follow, then bobbing for apples is proposed to relieve the intense feeling, and soon all are deep in the mystery of the water and apple problem. Marshmallows are toasted and chestnuts roasted in the grate.

The hour for retiring came all too soon and as hands are joined in Auld Sang Syne it was voted by all that Thanksgiving at the Hall had seen the jolliest of days.

Literary Society.

The regular meeting of the Literary Society of Macdonald Institute was held in the Gymnasium, Thursday, November 14th, at 7 o'clock p.m. It being the first meeting of the term, the President, in a very pleasing manner gave a short address, extending a hearty welcome to all present. The minutes were then read, the chief item of interest being the announcement of the new officers. The following were elected:

Honorary President—Miss Watson.
Honorary Vice-President—Dr. Annie Ross.

President—Miss S. Merkley.
Vice-President—Miss H. Gooding.
Secretary—Miss R. Palmer.
Treasurer—Miss Barnard.

Musical Convener—Miss G. Sullivan.
Programme Convener — Miss M. Hanna.

Membership Convener — Miss M. Ferguson.

Cor. Sec.—Miss M. Sylvester.

The Programme Committee is to be congratulated on the excellent programme which was then rendered.

Locals.

AT a meeting of the Mock Parliament "Crackle" Owen waxed eloquent on the exclusion of Orientals. With a far-away look in his eagle eye which was no doubt successful in piercing the dim vistas of the future, "Crackle" burst out with—"I, the head of a household have the right to say who may and who may not come to my home!!"



In sibilant sighs girls and cupid said "Come." But the President gruffly cried "You stay at home."

Mr. Gamble—What is a chemical change?

Innis—A change in which the substances cannot be separated by a blacksmith.

Freshman (giving the desirable characteristics of a good horse)—He should be low in the twist; its dewlap should be well developed, neat and evenly distributed, especially over the pin bones.

Since certain Mac. girls had their free nights stopped Fairhead and Vanbuskirk spend Friday evenings at plugging veterinary anatomy.

A. W. Baker (singing)—

Two little girls in love with me,

One is blind and the other can't see.

Emmerson — That's the reason they're in love with you.

Mr. Gamble —
What does water become when heated?
Bib Toole—"Hot."

Mr. Wade (giving an introductory talk on Berkshires before they are brought into the ring)—You see before you, a Berkshire!

And the Sophomores all smiled aloud.

Professor—Why do we need a good foundation under a cheese factory, Mr. Knauss?

Knauss—To support the roof.



The View of Archibald.

A girl's a most expensive thing,
And brings a load of cares;
For once I went to see a play—
I had to dress so neat and gay,
And sit with her in the parquet.

Three dollars it did cost, Gee Whiz!
That was so hard on me,
I didn't know where I was at;
For I could see twelve shows like that,
Up in the gallery.

Mr. Crow—What other kinds of
corn have we besides sweet corn?

Packard—Indian corn.

Professor Dean—Name an important
feature in Canadian Cheddar
cheese-making.

McGrath—The curd should be thoroughly
ripe before milking.

"Mac." Girl—Please, sir, I want to
go home for Thanksgiving, and
(blushingly) some one else wants me
to go, too.

Temporal Guardian—Well, if "he"
is willing to pay all the fines and you
are willing to stand for the rest of the
penalty, I can't make you stay. But
I wish to remind you of the old saying
—"Absence makes the heart grow
fonder."

"Mac" Girl—Oh, Mr. C—, I've
experienced that, but I've been away
so very long, you know.

Manton was the most mystifying
speaker at the Mock Parliament. Even
the critic did not know which side he
was championing.

In speaking of a gentleman on the
opposition, he said, "If he and I went
out on the 'stump' we could tell more
lies than any two men in the country,
and he'd never say a word."

(In French Class)—

Bailey (in answer to the question—
"Who is playing")—J'aime—

(The teacher is about to interrupt,
but "Bill" tries again)—J'aime vous
—(Translation—I love you).

Teacher—I guess you are trying to
talk about something else.

Vernon King (making a stump
speech at the Maple Leaf Society)—
Mr. Gentlemen, ladies and chairman:
I have nothing to say except that I
haven't anything to say, so I won't
say anything.

(Testing milk at Dairy)—

Shorthill—Please, sir, my locomotive
reading hasn't any steam in it.

Professor—That is called a lacto-
meter, and it should contain mercury.

Shorthill (aside)—You don't fool
me. Mercury was a winged messenger
of the gods.

Shaw says he means to accept the
Loudon Co.'s invitation to call when
he wishes, the especial point of interest
for him being the office. But if he is
not careful he may get a Boddy after
him. (The way to Shaw's heart is
certainly through his stomach.)

R. J. Allan (at Mock Parliament)—
What does "Luther Burbank" know
about this Liquor Bill?

Manton—How the mind wanders! I
would advise the honorable member
who is so interested in Burbank to
write for particulars on his method of
breeding brains into cabbage heads.

Dave recalls the recent incident at
the G. T. station by singing as he goes
about his work—"Tis waist that make
the arm go round!"

Lewis—Say fellows, see that fire over at the Poultry?

Pritchard—Oh, that's only the Freshmen coming from a lecture. They'll all go up in smoke some of these days.

Mr. LeDrew (in Economics)—Do you see any reason why prices for beef should not be high in the spring, Mr. Bailey?

Bailey—Well, won't the farmers be killing—themselves this winter.

Haight (in the Loudon Co.'s office with his mouth half full of ice cream and cake)—Say, boys, this is better than student labor!

Mr. Callendar (of the same Co.)—Now boys, if you see anything you like around here, you are very welcome to take it away with you.

Harris—I would like to take one of your office girls. (And he followed up his wish by asking permission to assist in washing the dishes after the "feed.")

Old lady (passing down between two lines of yelling Sophs)—My, but you make an awful noise!

"Scotty" Robertson—Oh, we're only showing our oats.

Soph. (bothered with the nice points of surveying)—Mr. Thom, when it's a half do you call it a half?

Allan says he'll never go to sleep on a train again. At Thanksgiving he started for Guelph Junction, and after a short time (as he thought) he opened his eyes and asked the conductor—"Will we soon be there?"

Conductor—Where's "there?"

Allan—Why, Guelph Junction, of course.

Conductor—We'll be in Brantford in a few minutes.


New members of the Red-light Brigade—Hughie Duff, Alexander McLaren, Garnet Cutler and Walter Jackson..

Just out—A review of Shakespeare's "As You Like It," by G. H. Cutler.

This is an admirable treatise and is full of the author's originality, as instanced in the following quotation which he puts in the mouth of one of the characters: "When I am killed there will be a place filled which will be better filled when I have made it empty."

First Freshman—Why doesn't Mr. McMeans grow some Crawford peaches in his greenhouses?

Second Freshie—Why, to get any fruit it would be necessary to guard the Hutt and mind the Wells and keep on the Hunt to shoot the Crow and trap the Squirrel and prune the Crawford.



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Easy to Fill—Because the supply can is low—only waist high—and there is no danger of running the can over as there is with a high supply can.

Easy to Turn—Because it has cut gears and easy running bearings—Improved Rocker Bearing, Ball Bearings and removeable Bronze Bushings.

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Simple—and will not get out of order.

THIS SEPARATOR IS FULLY ILLUSTRATED AND DESCRIBED IN A NEW BOOKLET JUST ISSUED. GET ONE FROM

The Massey-Harris Agent

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

"Mike" Lewis—I think it would be rather difficult to make a choice of the Fourth year options.

Shaw—It may be for some, but I have mine chosen.

"Mike"—What is it? What made you decide?

Shaw—Entomology. I know two young lady entomologists—Professor Comstock's wife is such a help to him you know!

Professor Day—Next week we'll have some practice in judging Shires.

Hodson (judging at London on the promised trip)—I place this mare first because she shows more of the Shire type than the others.

Professor—These are Clydes; we'll judge Shires this afternoon.

Fourth year students discussing work in Cryptogamic Botany:

Dan Jones—What work are you taking with Mr. Eastham?

Lawson Caesar—We are at the Rhodophyceae.

"Dan"—Have you taken the microphyceae?

Baker (interrupting)—I'm sorry for you, Reeds, that you have to sit between those two fellows.

"Dan"—Oh, it's only a Reed shaken by the Wind.

Professor—Mr. Collins, what is ague?

Collins—It is a disease of the big toe, I think.

Foster has been having a high old time lately. He was observed to be actively engaged in escorting a young maiden with very short skirts at a Varsity football game recently. On his return he was gently joshed and

tried to smooth matters by glibly informing the boys that she was "only his cousin." But growing philosophical he explained that he had to get something "of his own size."

In Brantford, Norman was seen running around with a picture postcard asking for a one cent stamp. No one had any, and a voice broke the silence with the remark—"You don't need a stamp for that card; it's under age, it will go for nothing."

Mr. Todd has some new ideas on planting potatoes. He says that the most successful grower in his experience used to place the set on the ground and press it into the soil with his big toe.

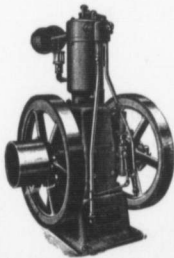
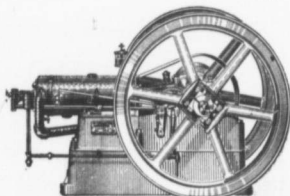
A short time ago three of our First year men while returning from the city witnessed an accident in which three young ladies were upset from a carriage and deposited in the ditch. The Freshmen did not wait to be introduced, but hurried gallantly to the rescue.

It is quite evident that the young ladies were extremely grateful, for a couple of days later Messrs. Schartow, Gandier and Martindale were the happy recipients of medals (leather) with the appropriate inscription "For Bravery" upon them.

The infuriated beast sprang at my throat! Seizing my trusty penknife, I cut off his head and threw it in his face!

No, dear reader, this isn't a tale of darkest Africa. It's merely a mild fragment taken from a true (!) "personal experience" essay, written by Knauss.

**Do 10 Hours Work
of 4 or 5 Horses
for 75c to \$1.00**



What farmer would not give a great deal to have power equivalent to that of 4 or 5 horses ready for use in a moment, and at a cost of 7 or 8 cents per hour? That is exactly what the farmer has who owns a 4-horse power I. H. C. gasoline engine.

A semi-portable gasoline engine may be converted into a power plant on the farm. It may be transported from place to place about the farm, wherever the farmer requires power for shredding fodder, grinding feed, sawing wood, pumping water, operating cream separator, churn, etc.

The I. H. C. gasoline engine line includes Vertical 2 and 3-horse power; Horizontal (portable or stationary) 4, 6, 8, 10, 12, 15 and 20-horse power; pumping engines and jacks, spraying outfits, and a 1-horse power air cooled engine.

For further information concerning I. H. C. engines call on the local agent, or write for illustrated catalogue and lithographed hanger.

CANADIAN BRANCHES: Calgary, London, Montreal, Ottawa, Regina, St. John, Winnipeg, Toronto.

**International Harvester Company of America (Incorporated)
CHICAGO, U. S. A.**

THE FARMING WORLD
DEVOTED TO
CANADIAN COUNTRY LIFE

FACSIMILE OF COVER DESIGN
ILLUSTRATION IS CHANGED EACH ISSUE
PUBLISHED ON THE
FIRST & FIFTEENTH OF EACH MONTH

**Present
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**60 Cents a Year
or Two Years \$1.00**

**Balance of This Year
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Sample Copies Free

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BOYS!

Send Your Parcels
to the

BIG LAUNDRY

and Get the Discount

You will find that they will use you right
and if anything is wrong let us know

WAGON

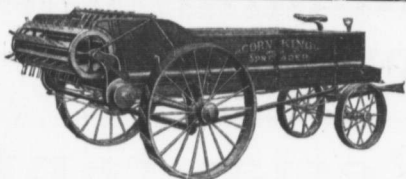
Calls at the COLLEGE

Mondays and Wednesdays

Guelph

Steam Laundry

80 Norfolk Street



GOOD CROPS

It is the ambition of every farmer to raise good crops. The only possible way to do so is to keep the soil well fertilized.

If the soil is cropped continuously without having plant food elements returned to it, it becomes depleted and unproductive.

If, however, farm manure is properly applied to the soil its productiveness may be retained and increased. To properly apply farm manure, use an I. H. C. spreader.

These spreaders are made in two styles; CORN KING return apron, and CLOVERLEAF endless apron. Both spreaders are made in three sizes; small, medium, and large.

See local agent and make a personal investigation of the spreaders, or write nearest branch house for illustrated catalogue and colored hanger.

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International Harvester Company of America (Incorporated)
CHICAGO, U. S. A.

Milton Pressed Brick Co., Limited



Manufacturers of strictly high-grade brick fire-places. Our Mantels are not only highly ornamental but are for every-day use. A bright fire in a brick fire-place gives a room an air of solid comfort that is hard to beat.

Write us for Illustrated
Catalogue

HEAD OFFICE, MILTON, ONT.

TORONTO OFFICE, 75 YONGE ST.

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



**MERRY
XMAS**

The New Restaurant

Above our Kandy Store
IS NOW OPEN
Meals and Lunches at
all Hours.

Special catering
to visitors to the
Experimental
Union and Fat
Stock Show.



Nothing makes the Xmas
more enjoyable than our

Candy

Students! Take some
sweetness home with you.



Yates & Thomas

Wyndham Street

Guelph

Sam Lee Hing

LAUNDRY



Say, Boys!

For 12 years I have been doing your laundry work without a single complaint.

Only expert workmen employed.

Work done by hand only.

Shirts ironed so as not to hurt your neck.

Standup collars ironed without being broken in the wing.

No acids, lime or other chemicals used.

Shirts last longer when done at my laundry.

First laundryman to advertise in the Review.

College calls made on Mondays, Wednesdays and Fridays at 7 a.m.

Phone 547.

SAM LEE HING

Next Marriott's Flower Store

ST. GEORGE'S SQUARE.

A. W. Baker (to classmates who are practising for a quartette)—Now, sing away down deep in your chests.

Orser—Don't you know that the voice is caused by a cartridge in the throat!



Big Tool.

His frame is stalwart and strong,
Like the oak that grows Parnassus
sides along,

And there unto 'tis sometimes said,
He also adds an oaken head.

Mary.

Mary had a little waist,
Where waists were meant to grow;
And everywhere the fashions went
Her waist was made to go.



Professor (assigning reading)—Mr. French, we'll give you the part of Lady Percy.

"Percy" (aside)—I think you are anticipating rather much.

Voice—Not if we can judge by appearances on the Toronto trip.

Galt "Sure-grip" Shingles

Surprising how easily and rapidly a roof may be covered with Galt "Sure-grip" Shingles. Simple matter to lock the sides together, and just as easy to lock the top shingle to the one below.

The nails are "concealed"—can never pull out. Galt "Sure-grip" Shingles lie so closely to the roof that they really might be said to be cemented on. And they lock together in the tightest kind of a grip. These shingles form a solid armor of galvanized steel, affording not the slightest opening for wind to get under. They can't drop off or blow off; neither can they rust or burn off.

Just as cheap as ordinary shingles. Last a life time. The wisest kind of an investment to make.

Catalogue and further information free on request.

THE GALT ART METAL CO., Limited
GALT, ONT.

— THIS IS THE SHEET METAL AGE. —



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

Up-to-Date Creamerymen

Use Up-to-Date and Modern Factory Appliances

Up-to-Date Manufacturers

Build Modern Factory Machinery and Equipments

We are Up-to-Date Manufacturers. ARE YOU an Up-to-Date Creameryman? Write us when in the market for anything needed in your factory. We will be in a position to fill your order, as we carry everything in stock from Engines and Bolders down to the Ladle and Packer. We will be pleased to quote you prices on anything you may require.

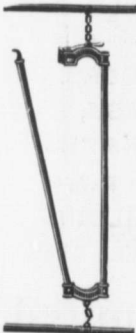
Alderney Butter Color. We Sell It. Acknowledged the Best.

C. Richardson & Co., St. Marys, Ont.

Branch House: CALGARY, ALBERTA.

Larger Dairy Profits

BY UTILIZING MODERN APPLIANCES. ♣ HERE ARE 2 MONEY MAKERS



Champion Cow Stanchion.

♣ A Champion Stanchion gives a cow as much freedom as if in pasture. Absolutely no weight on the neck.

Will not chafe. Will not break. Self-locking.

Nothing Like it on the Market.

♣ Our Water Basins will pay for themselves in two years. HOW? In increased milk, to say nothing of saving of labor.

No other Basin can use our Patent Valve.



Water Basin.

Windmills Grinders
Gasoline Engines
Tanks Pumps
Steel Lawn Swings

[SEND FOR FREE BOOKLETS]

Ontario Wind Engine & Pump Co. Ltd., Toronto

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

STUDENTS

We Welcome You

to our city, and when in need of anything in the SHOE and RUBBER line we will appreciate a call. We sell the best makes of shoes, such as the

Geo. A. Slater, Invictus, Beresford,
Sovereign, The Art, and Miss Canada.

Also a full line of sporting shoes.

KNECHTEL'S

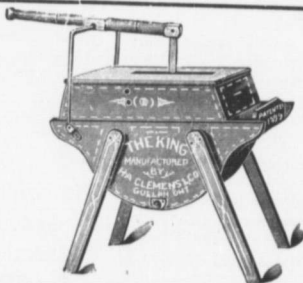
Don't mistake the place. First shoe store you come to coming from the college; on Market Square. Bring your repairing to us.

The King Washing Machine

Wholesale and Retail
Dealers in

LUMBER
LATH and
SHINGLES

All Kinds
Bill Stuff, Etc.



Manufacturers of

DOORS,
SASH,
FRAMES

All Kinds of
BUILDING
MATERIAL

The H. A. CLEMENS CO., Limited

MANUFACTURERS OF

WASHING MACHINES, STAIR BUILDING and INTERIOR FITTINGS A SPECIALTY

Phone 50.

GUELPH, CANADA.

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

Can't We Supply the Fall Tailored Suit for You, Mr. Man?



If you'll scan through the immense display of new cloths and tweeds, your answer will be;

"Well, I had no idea that such a showing was here."

Lots and lots of men are just in your fix—paying enormous sums for suits not a bit better or made a fraction nicer than these suits we turn out.

The old story of extravagance will sooner or later cause many a regret.

Save yourself this future annoyance—save money now—see the fall display of all the new and wanted materials—good enough for the best dressed man in town.

Our tailoring must be satisfactory to you or the suit is ours—not yours at all.

Is this a straight proposition?

D. E. MACDONALD & BROS.

Men's Clothiers and Furnishers, Lower Wyndham St.

If you appreciate GOOD VALUES, you will
be sure to buy your

Shirts, Ties, Collars, Hats and Furnishing Goods

Here. The choicest stock in the city.

My Tailoring Department

Is one of the most reliable in the trade. First-class, stylish clothing made to fit perfectly, and satisfaction always assured.

See My Stock of Fine Up-to-Date Goods. Only
— One Price —

Goods marked in plain figures. Be sure and give me a call.

R. E. NELSON,

Next Traders Bank
Just above the Post Office

Men's Furnishings
Hats and Fine Tailoring

The Traders Bank of Canada

ASSETS OVER THIRTY MILLIONS (\$30,000,000)

NEXT DOOR TO
The Post Office



NEXT DOOR TO
The Post Office

WYNDHAM STREET

SPECIAL ATTENTION PAID TO FARMERS' BUSINESS

Loans Made. Deposits Received

The Most Favorable Rates and Terms Given

\$1.00 WILL OPEN AN ACCOUNT

Foreign Advertisers

in the O. A. C. Review

Should seriously consider whether they can refrain from advertising in

The Guelph Weekly Mercury

The Weekly Mercury was established 1854, and has a sworn circulation of 4,844 copies per issue. Its clientele embraces the most progressive farmers and stock breeders in one of the oldest and best agricultural sections in Canada.

An advertisement in the Weekly Mercury always brings paying results.

J. J. McINTOSH.

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

Mr. Rawsome—With what do the bees gather their nectar?

Mr. C.—Please sir, with their pole—and baskets.



Newhall—Never in my life has a lie passed my lips!

Faulds (with withering scorn)—Very true, my son. Ye're always talking through your hat.



Freshman—Will you please tell me where to get my Review?

Packard—On the second floor of the Biology Building. Walk as far as you can and then you will see the door on your right.

Freshman (a few minutes later)—I couldn't find anyone.

Packard—Oh, I guess the office must be closed now.

QUALITY SUPPLIES

QUALITY is one of the first considerations in all the goods we handle, and you can always depend upon getting the best from us.

Apparatus for Chemical and Physical Laboratories.

Drawing Materials of all kinds.

Manual Training Benches and Tools.

Reeds, Raffia and Cardboard.

Books on Art, Construction and Basketry Work.

Maps, Globes, Blackboards, etc.

WRITE FOR QUOTATIONS

The Steinberger Hendry Co.

37 Richmond Street West, TORONTO ONT.

Men's
Goods

E. R. BOLLERT & CO.

Ladies'
Goods

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

MEN'S SECTION.

Fine Ordered Clothing at Moderate Prices.

Fit-the-form Ready-to-wear Clothing, very good and very cheap.

Best Styles of Hats and Caps at closest prices.

Up-to-date Shirts, Collars, Ties, Gloves, and Fancy Furnishings, not at fancy prices.

Underwear, Hosiery, etc., grand values.

LADIES' SECTION.

Dressmaking at very reasonable rates. Ready-to-wear Coats, Skirts, Blouses, etc., in great variety of new things.

MILLINERY.—All the Novelties of a first-class Millinery Business constantly received.

The Underwear and Furnishing Stocks are crowded with good goods at low prices.

Belts, Collars, Gloves, Hosiery, Handkerchiefs, etc., etc.

25 and 27
Wyndham St.

E. R. Bollert & Co.

25 and 27
Wyndham St.

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

POTASH

FOR FIELD, GARDEN AND ORCHARD

This mostly important Plant Food may be obtained of all leading Fertilizer Dealers in the highly-concentrated forms of

MURIATE OF POTASH

— AND —

SULPHATE OF POTASH

Excellent results have been obtained by applying potash along with a phosphatic fertilizer in the Fall.

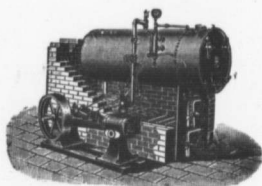
POTASH does not get washed out of the soil, but is firmly retained.

Write for our illustrated Souvenir of Toronto Exhibition, 1907, which will be sent gratis.

THE DOMINION AGRICULTURAL OFFICES
OF THE POTASH SYNDICATE

1102-1105 Temple B'ld'g, Toronto, Can.

Leonard Engines and Boilers



Are used for CHEESE AND BUTTER FACTORIES THROUGHOUT CANADA. They have the largest output of any other manufacture. They are preferred for the reason that the Engines have short Steam Ports, Evans' Noiseless Governor, and the Boilers are thoroughly manufactured and tested to high-water pressure before shipment.

E. LEONARD & SONS, - LONDON

MINERAL WOOL

— FOR —

*Cold Storage Insulation,
Pipe and Boiler Coverings,
Engine Packings,
Roofing, etc., etc.*

Eureka Mineral Wool &
Asbestos Co.
TORONTO

GOOD THINGS TO EAT

You can always rely on J. A. McCrea & Son for strictly

FRESH OYSTERS
LOWNEY'S CHOCOLATES
ACOB'S (IRISH) BISCUITS
CHRISTIES' FANCY BISCUITS
CHOICE SWEET ORANGES

In fact anything special you might want as a little extra treat.

J. A. McCrea & Son
Wyndham Street, Guelph

THE AUTONOLA
The Piano everybody can play
and play well.



BELL PIANOS

AUTONOLA
PLAYER PIANOS
AND ORGANS

CANADA'S BEST.

USED THROUGHOUT THE WORLD—BUILT TO LAST A LIFETIME.

Send for our free Catalog,
No. 71.



STALL No. 3, GUELPH MARKET

ALFRED HALES

Wholesale and Retail Dealer in

Fresh Meats, Pickled Beef and Tongues,
Poultry for the Students a Specialty,

Fresh Pork, Hams, Bacon, Lard, Sausages and Bologna

Shop—Telephone 191

Residence—Telephone 405.

**GUELPH'S
BIG
HARDWARE
STORE
THE
BOND
HARDWARE
CO. LTD.
'PHONE 97**



It is Here

That the students
supply their needs
in Hardware, Cut-
lery and Sporting
Goods.

We keep every-
thing in Hardware
and prices are
always right.

The Canadian Bank of Commerce

Established 1867. Head Office, Toronto
 B. E. WALKER, President.
 ALEX. LAIRD, General Manager.

Capital (paid-up), \$10,000,000
 Rest 5,000,000

GUELPH BRANCH.

A general banking business is transacted.
 Bankers for the Dominion Live Stock Association.

Farmers' notes discounted.
 Drafts issued payable at all points in
 Canada and the principal cities in the United
 States, Great Britain, France, Bermuda, etc.

SAVINGS BANK DEPARTMENT.

Deposits of \$1 and upwards received and
 current rate of interest allowed.

Interest added to the principal at the end
 of May and November in each year.

Special attention given to Collection of
 Commercial Papers and Farmers' Sale Notes.

J. M. DUFF Manager.

**The CANADIAN
OFFICE & SCHOOL
FURNITURE CO.**

Manufacturers of
 High Grade Bank
 & Office Fixtures,
 School, Library &
 Commercial Fur-
 niture, Opera &
 Assembly Chairs,
 Interior Hardwood
 Finish Generally.



CENTRAL Book Store

Opposite where the Street Cars stop.

Text Books, Exercise Books, Foolscap
 Writing Pads,
 Up-to-Date Note Papers and Envel-
 opes, Papeteries, Etc., Etc.,
 Bibles, Hymn Books
 Books by Standard Authors, Poets,
 Prayer Books

In fact, everything kept in a well-ordered
 Book Store.

C. ANDERSON & CO.

THE LITTLE TAILOR STORE COLLEGE MEN

Are usually particular about their appear-
 ance. They demand character in their
 clothes.

We make the kind of suits and overcoats
 that give a man that "well-dressed" appear-
 ance so much desired.

We make the clothes to fit the man;
 TAILOR individual style and shape into
 them.

ABOUT OUR PRICES

Being on a side street, our store rent is
 very small compared with main street rentals.
 It is this combination—a big business done
 in a small store, with very light expenses—
 that makes it possible for us to turn out
 such high grade work at prices so much less
 than other tailors have to charge you.

Tweed and Worsted Suits \$15 to \$25.

Blue and Black Serges \$18 to \$27.

Overcoats \$16 to \$25.

Trousers \$4 to \$7.50.

R. J. STEWART

PHONE 456

Opposite Knox Church, Quebec Street

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

IF YOU WANT A FIRST-CLASS JOB
— IN —

**Plumbing, Gas,
Steam or Hot Water
Fitting**

— GO TO —

FREDERICK SMITH
QUEBEC STREET

Prompt attention to all jobbing.

'PHONE 387.

GEO. R. WOLCOTT

Sheet Metal Contractor

EXPERT ON HOT AIR HEATING

— *We make a Specialty of* —

Copper, Galvanized Iron, Slate, Felt
and Gravel, Tile, Paroid and
Turnplate Roofing

*Dealer in Stoves, Ranges and
House Furnishing Generally*

12 Cork St., GUELPH

SKATES

AND

SKATE STRAPS
HOCKEY STICKS
PUCKS SHIN PADS
HOCKEY PANTS
ANKLE SUPPORTS

AND

SPORTING GOODS OF ALL
KINDS

SPLENDID ASSORTMENT OF POCKET
CUTLERY AND RAZORS

McMILLAN BROS.

PHONE 31

22 WYNDHAM ST.

McKEE'S
Drug and Book Store

Headquarters for

Xmas and Holiday Goods

MILITARY BRUSHES
MANICURE SETS
SHAVING SETS
WORK BASKETS
SEWING SETS
DRESSING CASES
MUSIC ROLLS
JEWEL CASES

BRUSH, COMB AND MIRROR SETS
in Sterling Silver and Ebony
XMAS POST CARDS, CALENDARS, Etc.

LOWEST PRICES

J. D. McKEE, Phm. B.

Phone 66

20 WYNDHAM ST., GUELPH

YOU...

Should be interested in our Special Sale of **YOUNG MEN'S SUITS** in Scotch Tweeds and Worsteds.

Regular \$18 to \$20 Suits
for\$13.75
Regular \$15 to \$16 Suits
for\$11.50
Regular \$13 to \$13.50 Suits
for\$9.75

Cut on the latest models and finely tailored. This is your chance to "fit up" for the holidays at a moderate outlay.

WE INVITE YOU TO CALL . . .
AND SEE FOR YOURSELF.

THORNTON & DOUGLAS

LIMITED

LOWER WYNDHAM STREET

We have a very complete
stock of

Entomological

— AND —

**Botanical
Supplies**

For Students. At Students' Prices.

Alex. Stewart,

— CHEMIST —

NEXT POST OFFICE

Well - Dressed Men

The well-dressed man is the successful man of the day. A good appearance counts for a great deal in these particular times, and a little care about neat and well-fitting garments is one of the best investments a young man can make. Have your clothes made to order by first-class custom tailors.

Talk With

Keleher & Hendley

A Great Stock of **FURS** to pick from, and we carry the finest. Our maxim is "Straight Goods and Straight Prices," which will win in any market. Fur-lined coats a specialty.

GOLDEN FLEECE

Agents for best makes Hats, Shirts and Ties.

THE Memory of Quality Lingers Pleasantly; so why not buy your

**FRUITS AND
GROCERIES**

where quality is the first consideration?

OUR PHONE IS 169
We Deliver Promptly.

BENSON BROS.
GROCERS.

IF

You think a furniture store should have what you want, we can fill your order and save you money on every purchase. TRY US.

GRANT & ARMSTRONG

Furniture Dealers and
Upholsterers

GUELPH, - ONTARIO.

Store a few doors above Post Office.



We send Greetings for the fall season
to

THE COLLEGE STUDENTS

We trust that we will have the
pleasure of serving you when ready
for your Fall Shoes.

W. McLaren & Co.

Phone 370 - St. George's Square



The salt that *saves* money
and *makes* money in the
dairy—

Windsor Salt

Less of this evenly-dissolving, full-
savoured salt goes farther and does more
perfect work than more of any other salt.

If you use it, you know this. If you
don't, there's better butter coming—
just as soon as you get Windsor
Salt from your dealer.

128



WE GRIND OUR OWN LENSES

This means not only that we give quick and
accurate service, but that here you get exactly
what you should have—not something picked
out of a box, nearly what you want.

When your EYES require attention go to
one whose whole time is given to this work.

A. D. SAVAGE Guelph's Only . . .
Exclusive Optician

[ENTRANCE WITH SAVAGE & CO., JEWELERS]
Headquarters for Microscopes, Field Glasses, Etc.

Denniss says he is getting his French down "Pat."

Aldwinckle—Is a sponge a solid?

Packard—Yes.

Aldwinckle—No, it isn't.

Packard—What is it?

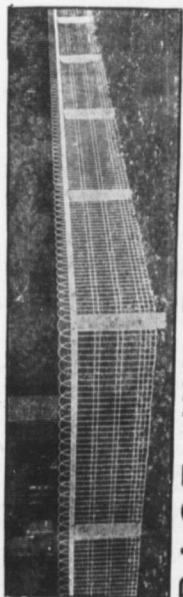
Aldwinckle—A gas.

First Freshman—What is an average?

Second Freshman—It is something on which a hen lays.

First Freshman—Why, what do you mean?

Second Freshie—Well, I saw in the paper that a hen at the Central Experiment Farm laid each year a hundred and fifty eggs on an average.



PAGE WHITE FENCES
 The Acme style you see above costs only from 16 cents a linear foot. Hardwood and durable for lawns, parks, cemeteries, etc. Any height or length. Gates to match from \$2.25. Write for catalog, or inspect this ideal fence. From us direct or any Page-dealer.
The PAGE Wire Fence Co., Limited
 Walkerville Toronto, Ontario
 St. John Winnipeg 212

...The... Metropolitan Bank

Capital Authorized - \$2,000,000
 Capital Paid Up - - 1,000,000
 Reserve and Surplus
 Profits - - - - 1,183,713

A general banking business transacted.

Students' Accounts

Receive careful and prompt attention

Guelph Branch:

C. L. NELLES, - Manager.

A FEW OF THE MANY

valuable features, from an insurance point of view, for which

THE MUTUAL LIFE OF CANADA

Is noted are:

1. Reasonable premium rates.
2. Liberal policy conditions.
3. Progressive and efficient management.
4. Low ratio of expense to income.
5. Well and profitably-invested funds.
6. Ample assets and reserves.
7. Favorable mortality experience.
8. Prompt settlement of claims.

HEAD OFFICE - WATERLOO, ONT.

GEO. CHAPMAN, General Agent, Guelph

DYNAMOS

AND

MOTORSFOR DIRECT AND
ALTERNATE CURRENTS

—MADE BY—

**Toronto & Hamilton
Electric Co.**99 - 103 McNab Street, N.
HAMILTON.**The Underwood**

Is made in various styles to suit the particular requirements of different businesses.

The Underwood Billing Typewriters are revolutionizing the work of the office, especially in the handling of orders and the rendering of bills. They made possible bookkeeping by machinery.

Ask for the book about them.

United Typewriter Co. Ltd.

7 ADELAIDE ST. EAST, TORONTO.

DOMINION BANK**GUELPH****Total Assets - \$49,000,000**

A General Banking Business Transacted.
Savings Bank Department in connection
with all offices of the Bank.
Deposits of \$1.00 and upwards received.

Bankers for the O. A. C.

Manager Guelph Branch

H. C. SCHOLFIELD**College Pins**

DIAMOND HALL has unexcelled factory facilities for the manufacture of all CLASS PINS, PRIZE CUPS and TROPHIES. Upon request, original designs will be forwarded embodying School Colors, Crests, or any other special features desired.

Our prices will be found as reasonable as is consistent with the high standard maintained by this House.

RYRIE BROS., Ltd.

134-138 Yonge Street

TORONTO

*The Burgess Studio**HIGH-CLASS PORTRAITS**Special Rates to Students*

We are at your service for good
Photographs. Call and see us.

J. W. ROGERS

STUDIO OVER DOMINION BANK

Walter E. Buckingham, B.A., LL.B.

BARRISTER

Solicitor, Notary, Conveyancer, Etc.
Douglas Street, GUELPH.

Office Phone, 175.

House Phone, 404.

-- GO TO --

PETRIE'S**DRUG STORE**

For Medicines and
Toilet Articles,
Seed Bottles, Etc.

Headquarters in Guelph for all kinds of

Photographic Supplies.

Films developed and prints made.
Latest designs in Comic and Picture
Post Cards. Remember the place.

Petrie's Drug Store

Lower Wyndham Street.

PRINGLE THE JEWELER

Entomological Supplies,
Magnifying Glasses, all qualities,
Fountain Pens
Rubber Stamps,
O. A. C. and Macdonald Institute
College Pins

The Busy Book Store

O.A.C. and Macdonald Students
cannot do better than come to us for
all College Supplies. A full line
always in stock.

Buy a Sterling Fountain Pen and
stop dipping.

SCOTT & TIERNEY

Phone 72

Lower Wyndham Street

Economical - -**- - - Clothing**

The best value for your
money is always got at our
Store. We can clothe you for
little money, and we can give
you as high-grade garments as
are made in Canada. In fact,
all our garments have CLASS
about them. A call solicited.

J. A. SCOTT**Designer of Men's Garments**

'Phone 72

McHUGH Bros.,
26 Lower Wyndham St.

Are prepared to supply students with the finest range of Pipes, Tobaccos, Cigars, Cigarettes, Pouches, etc., at prices consistent with quality.

The finest assortment of goods shown in the city. Come in and see us.

**DID YOU EVER
 SEE A PRINTER
 PRINT LIKE
 THIS PRINTER
 PRINTS? . . .**

J. J. KELSO

Opposite Post Office, - Guelph

Snowdrift
Peoples
Maple Leaf

Three well-known brands of Flour.
 Ask for them and be sure you get them.

The James Goldie Co., Limited
GUELPH

Telephone 499

HEADQUARTERS

FOR HARDWARE AND
 SPORTING GOODS AT
 LOWEST PRICES.

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 P. M.—12:15, 12:35, 12:55, 1:15, 1:40, 2:00, 2:20, 2:45, 3:05, 3:30, 3:50, 4:15, 4:35, 5:00, 5:25, 6:50, 6:15, 6:40, 7:00, 7:20, 7:45, 8:05, 8:25, 8:45, 9:10, 9:30, 9:50, 10:15, 10:35, *10:55.
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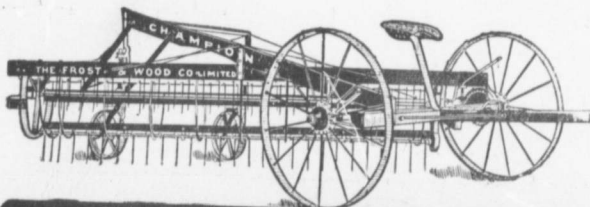
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