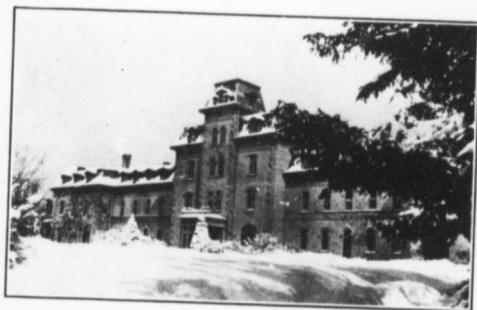


Volume XXV.

Number 4

O.A.C REVIEW

JANUARY



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1913

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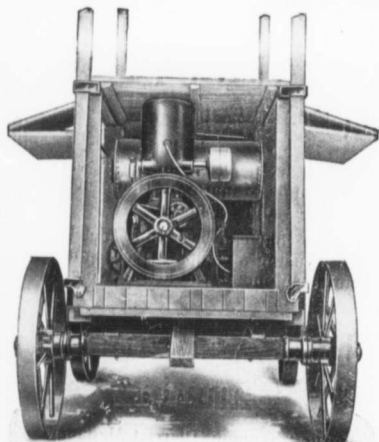
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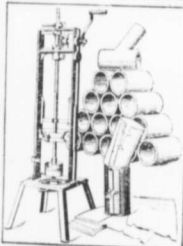
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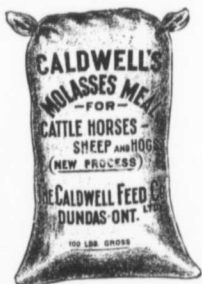
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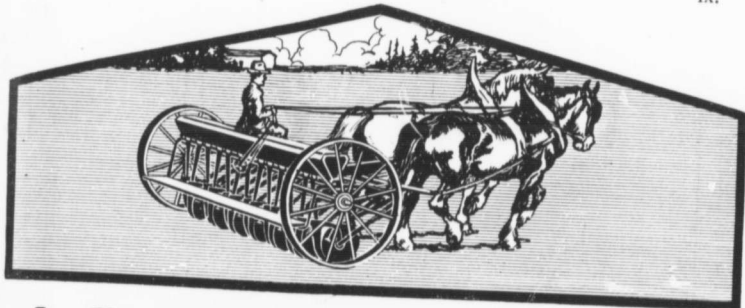
Wood Sole Shoes, per pair, \$2.25.

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GET a Cockshutt Drill. You will benefit for many years. You will give your seed and your land a fair show. You sow in rows six inches apart. This means you get three to five extra bushels, just by using a Cockshutt drill. Remember this is profit. These extra bushels are found money for every acre you seed with a Cockshutt. Plan right now for a new seeder—write us a letter asking for details.

THE Cockshutt Drill is made with a strong I-beam frame that keeps all discs at the same height. It is carried on wide-tired wheels revolving on short axles with renewable bushings. The draft is always light. The discs are self-cleaning. They drop trash automatically. The boots cannot clog with mud. The discs are self-oiling. The feed won't smash, break or bruise the kernels—is always accurate.

Your Crop Needs a "Square Deal"

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Series C.

Guelph, January, 1913.

No. 1

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TO WORK IN
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ONTARIO

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

H. A. MACDONALD,
Director of Colonization, Toronto, Ont.

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"60 SPEED"
GASOLINE ENGINE**

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A farmer's power house on wheels. Agents Wanted.
GILSON MFG. CO., Ltd., York Street, Guelph, Ontario

THE O. A. C. REVIEW

THE DIGNITY OF A CALLING IS ITS UTILITY

VOL. XXV.

JANUARY, 1913.

No. 4

Welcome to the Short Course Students

A



N institution like the Ontario Agricultural College, with its large staff, many buildings, and every facility for work, should open its doors to any person who is interested in any way in the improvement of agriculture, particularly in the Province of Ontario. After all is said and done, our long courses attract but a small percentage of the eligible farmers' sons of this country. The ninety and nine remain at home and together with their older brothers and their fathers get very little benefit directly from the College, except such information as can be picked up by an occasional visit or by reading our reports and bulletins.

This is hardly fair; and so we have tried to make it possible for these brothers and fathers to come to us during the winter months for special instruction in some particular branch of farming in which they are most interested at home. These short courses have become very popular and the numbers in attendance are increasing each year. We are glad to see them come; we want them to feel that they have as much right here as students who stay four years; we want them to use our laboratories and libraries; and we want them to ask questions of everybody who can tell them things that they do not know regarding their life work on the farm, whether it be dairying, stock judging, handling of seeds, fruit growing, poultry raising, or the management of bees. Each and everyone will receive a warm welcome from the authorities at the College when they arrive in January and February to take up some work of special instruction.

And to these men we would say, further, that perhaps a short course is not all that they need before returning to their own homes for the rest of their lives. Perhaps they should take one or two full winters' work and get familiar with some of the sciences underlying the general practice of Agriculture. So many of our best farmers admit that they would be much happier in their work if they knew why, as well as how, to do things.

Farming is changing; old methods are passing away and new processes are being brought in every year. If some of the men who come to us after Christmas get an inspiration for further research, we shall be glad to see them in our longer courses if they can find it convenient to come; but in the meantime, may they get all the information they can during these short courses and return to their homes determined to do better farming in the future than they have been able to do in the past.

Come then and inspect our work. Come and meet the members of our staff and make them your friends. Come and see how the public funds are being spent. Come and show by your presence that you believe in more education for the farmer, in order that he may be happier in his work, more methodical in methods, and that he may make more money in his business.

—G. C. CREELMAN.

THE LIBRARY UNIVERSITY OF TORONTO

The Sheep in Canadian Agriculture

J. B. SPENCER, B.S.A.

OF the standard classes of live stock kept on the farms of Canada sheep are by far the least popular. While the numbers of horses, cattle and swine have in greater or less measure kept pace with the general march of agricultural progress, sheep

and to enrich and clean our fields. In 1881 we actually exported more than 354,000 sheep and lambs, while during the single month of August, 1912, we imported for consumption more than 15,000 carcasses of mutton and lamb. For the six months ending with September our imports of

Mr. Spencer is editor of the Publications Branch, Dominion Department of Agriculture. He says: "Having for a number of years kept in touch with successful sheep raisers in every province, and having bred sheep extensively upon an Ontario farm I have no hesitation in saying that as a source of revenue and as a help to good farming no other class of animals equals the sheep."

have not only ceased to follow the van, but have actually been travelling in a backward direction.

During the past thirty years the agricultural development of Canada has as a whole been tremendous. In this time our annual wheat production has risen from 32,350,000 bushels to 215,850,000 bushels, our oats from 70,500,000 bushels to 348,000,000 bushels, and our barley from 16,850,000 bushels to 40,640,000 bushels. In these three decades our horses have increased from 1,060,000 head to about 2,200,000, our cattle from 3,524,000 to 7,300,000, while our swine during this time has gone from 1,208,000 up to some 3,000,000 head. Beside these growing branches of the farming industry, sheep present a sorry spectacle. Whereas in 1881 we possessed 3,050,000 head we are able to count upon our much more numerous and more extensive farms at the present time something like 2,250,000 head. Had our sheep raisers kept step with our horse and cattle men we should have had more than 6,000,000 sheep to feed and clothe our people

these meats amounted to 2,591,640 pounds.

These facts are practically inexplicable in view of the fitness of Canada for the raising of good mutton and wool. In parts of Ontario, Quebec and the Maritime Provinces are districts in which low-priced, well-watered, hilly lands offer natural and peculiar advantages for the raising of sheep. In the better farming parts of these provinces sheep respond fully better than other stock to good treatment. In the Prairie Provinces sheep are not only very profitable where kept, but they are badly needed if grain-growing is to be continued successfully.

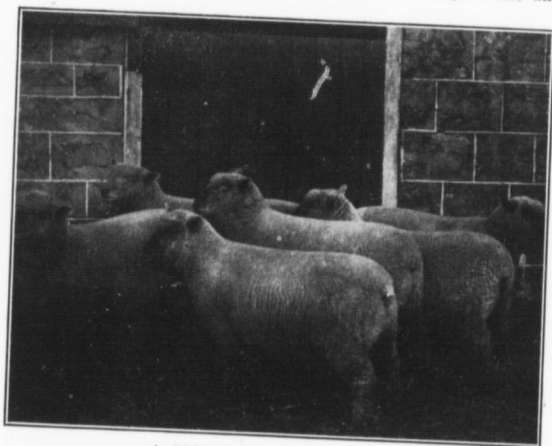
Why are the farmers of Canada behind those of other countries in the matter of sheep keeping? Germany, with a total area less than one-seventh the size of the agricultural part of Canada, maintains some 9,600,000 sheep; Great Britain, upon one-twelfth the area of our farming belt, carries upwards of 38,000,000 sheep, whereas if we kept sheep in

proportion to our agriculture, as do the farmers of the Argentine Republic, our flocks would number about 86,000,000 head.

The reasons for our little confidence in the sheep as a revenue producer are varied and numerous, but perhaps the most potent is that sheep are not properly appreciated and understood. Having for a number of years kept in touch with successful sheep raisers in every province and having bred sheep extensively upon an Ontario

do, because if eaten an objectionable flavor is likely to be imparted to the milk. And so the cow pastures must be broken up or cleaned in some other way to maintain a moderately clean farm. The sheep, on the other hand, relishes a variety of diet and actually searches out the weeds which, when consumed, cause no injury to either the flesh or the fleece.

In this country there is an undoubted mistaken notion that there is no room for sheep on the dairy farm.



A GOOD TYPE OF SOUTHDOWN.

farm I have no hesitation in saying that as a source of revenue and as a help to good farming no other class of animals equals the sheep. When kept in small flocks the food consumed is scarcely missed on the ordinary farm while the labor required to look after them is not a task compared with the tending and milking of cows and the feeding of hogs. And then the sheep, well provided with an all-wool covering, costs little to house.

As a rule cows pass by the weeds in the pasture field and it is as well they

Sheep are blamed for cropping the pasture too short for the cows. What kind of a dairy farmer do we find confining his cows to a closely cropped field? There are such in almost every district, but happily they are becoming fewer and fewer as the light of true economy filters into their hazy brains. Go where one will in the farming sections of Great Britain, he will find flocks of sheep sharing the crops of even dairy farms with the cattle and other stock. The sheep are known to be as necessary as the

cows in carrying on a successful agriculture. There the cows go knee deep in pasture which is not injured, but rather improved by the trodding of the "golden hoof" when given its turn in the cow pasture.

Can a reasonable objection be taken to sheep on a grain farm? "Yes," remarks the big fellow with his thousands of acres of open prairie, "they demand fences and these are expensive." To grow wheat requires other things that are expensive. In their

ter for their presence. An extensive wheat grower near Brandon who kept a flock of sheep was the only farmer in the district whose wheat was not docked for weed seeds and poor quality. Others were usually docked from two to seven bushels to the load. To continue to grow grain requires a proper rotation of crops and when sheep are kept such a rotation naturally follows with all its attending benefits. A flock of sheep not only cleans the land of weeds, but it com-



SHEEP AND WHEAT RAISING GO WELL TOGETHER.

study of agricultural conditions in the Prairie Provinces, the lands department of the Canadian Conservation Commission discovered that in some of the older sections land that has been under cultivation for a number of years is yielding fourteen per cent. less per acre than it did twenty years ago. Weeds are increasing all through the west where sheep are almost unknown.

Observation and experience lead to the conclusion that when sheep are kept on wheat farms the crop is bet-

ter for their presence. An extensive wheat grower near Brandon who kept a flock of sheep was the only farmer in the district whose wheat was not docked for weed seeds and poor quality. Others were usually docked from two to seven bushels to the load. To continue to grow grain requires a proper rotation of crops and when sheep are kept such a rotation naturally follows with all its attending benefits. A flock of sheep not only cleans the land of weeds, but it com-

And what about sheep on the fruit

farm? One of the chief problems of the orchardist is to keep down his fertilizer bills, but few think of keeping sheep to supply manure. Is there a good reason why much of the cover crop grown to ripen the wood should not be turned into mutton? Revenue from mutton is just as valuable as from fruit, and the uncertainty of returns after transportation and commission fees are satisfied. But that is not all; "dropped" fruit is usually a menace to the orchard because of the larva it contains. Sheep are fond of apples, and will with advantage clean up those that fall early in the season before they are sufficiently mature to be useful. Hogs would probably do the same work, but not without fouling the ground. Few fruit farms are so completely planted as to have no space for growing sheep feed. In the cases of the few it would usually pay well to buy in a flock of lambs in the late summer to fatten upon the cover crops and fallen fruit that is better destroyed.

There are here and there exposed sections where it is desirable to have the snow lie on the ground to protect the roots of the trees against severe frost. Under these circumstances, more especially when the orchard is young, it is well to allow the cover crop to remain as late as possible to catch the snow.

Sheep are especially valuable in sod orchards that cannot readily be cultivated. In his report of fruit growing conditions of Canada. Mr. Wm. H. Bunting speaks of an apple grower living on the bank of the St. John river who is able to maintain his sod orchard in fine condition by grazing it with sheep. The foliage of the trees was remarkably healthy and the fruit of good size and remarkably clean, forming a remarkable con-

trast to other orchards in the neighborhood where the ordinary sod culture obtained. When pasturing a young orchard a precaution has to be exercised in order to prevent the trees being barked. A bit of tar paper or other suitable material wrapped round the trunks will not only protect them from the sheep, but from the mice in winter as well.

If a farmer of any class will but become acquainted with the requirements and habits of sheep and the profits that are easily procurable from a flock when properly cared for will assuredly maintain at least a few head on his land. Those who have kept sheep and given them up will almost invariably be found to have regarded them of little account, and to have treated them accordingly. It is an entirely mistaken idea that sheep require no care. They will get along with very little, but the returns from the flock will usually correspond. The hog raiser that gives no careful heed to his stock will raise mean pigs and few of them. Heavy cockerels in October and plenty of eggs in January are never secured by the indifferent poultry keeper. High records need not be looked for on the farm of a man who dogs his cows and exercises niggardly economy with their feed. Likewise one hundred and fifty per cent. lamb crops, eight dollar lambs in May, prime wethers in winter and clean uniform fleeces at shearing time are attainable only as the reward of intelligent and persistent care given the flock.

From the standpoint of profits, sheep, as compared with other live stock, rank very high. When sympathetically treated, no other class of stock is more pleasant to work among. In the hands of a shepherd the sheep is a docile and friendly creature, but

because of its natural timidity becomes a nuisance to an owner who treats it as a wild thing, compelling it almost to steal its living. There are few farms that have no room for at least a small flock of sheep. If the truth of this statement were properly understood the sheep population of Canada would not lag behind that of other classes of stock, but would

on account of the ease with which they are increased, surpass the horses, the cattle and the swine in rate of increase and approach more nearly the standing of the flocks in Great Britain, than which no country possesses a more shrewd class of farmers or a more advanced agriculture.

FIGHT IT OUT!

Does Destruction seem to lurk All about?	Do the portals of your brain Freedom lack?
Don't believe it! go to work! Fight it out!	Never let them thus remain; Push them back
Danger often turns and flies From a steady pair of eyes; Ruin always camps apart From an undefeated heart.	Do not give the efforts o'er, If they number half a score; When a hundred of them fail, Then a thousand might prevail.
In the spirit there is much, Do not doubt,	Germs beneath a clod must lie, Ere they sprout;
That the world can never touch! Fight it out!	You may blossom, by-and-by; Fight it out!

All the lessons of the time
Teach us fair,
'Tis a blunder and a crime
To despair!
When we suffer, 'tis to bless
Other moments with success;
From our losses, we may trace
Something better in their place.
Everything in earth and sky
Seems to shout,
"Don't give up until you die;
Fight it out!

—Will Carlton

Commercial Fertilizer Experiments in Norfolk County

J. E. SMITH, B.S.A.

FARMING is simply the preliminary step in manufacturing. The farmer is the manufacturer. His farm is the plant. The business is run to transform the inert chemical elements in the soil and air into plant tissue, in which condition they can be marketed — fodder or grain—or put through another transformation and sold as the finished product in beef, mutton, pork, fowl, eggs, butter, wool or other live stock product. The successful farmer is the one who keeps his plant in good repair and up-to-date. The supply and availability to crops of these chemical elements is the foundation of successful farming. Continuous cropping of the virgin soil with little cultivation or addition of manure exhausts the natural supply of the three most essential elements of plant growth, namely, nitrogen, phosphorus and potash. No one element can take the place of another, hence every plant is dependent upon each individual element it may require. Under present conditions, most of our Ontario farms are unable to procure full crops and, in many cases, even profitable crops through the lack of one or more of these elements. How can we renew these soils to profitable productiveness quickly and cheaply? This is our problem. Increasing the number of live stock per acre was the popular method of the past. Such a method is rather slow. We are in an intensely strenuous age—an age of smaller acreages and heavier

yields. Long rotations to renew the soil are being superseded by direct applications of plant food. The soil is looked upon more as a machine which, under an efficient engineer and with a proper supply of raw material, will produce ten, twenty or even an hundred fold. Only the efficient farmer can secure the best results from feeding his soils commercial fertilizers. Ontario has been very skeptical as to the value of artificial plant foods. To-day she realizes that "used intelligently" they can be made a source of great profit. In other words, "commercial fertilizers pay." The experience of a hundred years has proved this to the farmers of Europe. We are to-day realizing that this method must be employed in rejuvenating our run-down fields where large yields are necessary to offset increased labor and other expenses.

The past season has been favorable in showing the effect of fertilizers on the various truck and fruit crops on which we have been experimenting in Norfolk County. Our experiments cover tomatoes, goose-berries, turnips, potatoes, onions, corn, raspberries and strawberries. For the man who is seeking insight, the following results are worthy of close study. The price of fertilizers used were in all cases, nitrate of soda, \$56.00 per ton; superphosphate, \$18.00 per ton; sulphate of potash, \$51.00 per ton.

Experiment 1.—Tomatoes — Five-plot test on light sandy loam by Frank Shearer:

FERTILIZER EXPERIMENT WITH TOMATOES

On Farm of Frank Shearer, Norfolk Co.

Plots 2x10 rods.

No. of Plot	Fertilizer Applied.	Yield per plot in lbs.	Yield per acre in bush	Increase in yield per acre.	Value of increase at 25c per bush	Cost of fertilizer per acre.	Profit or Loss
1	No fertilizer	675	90				
2	Nitrate of Soda, 19 lbs.... Superphosphate, 50 lbs.... Sulphate of Potash, 25 lbs.	1430	190 2-3	100 2-3	\$25.17	\$12.95	\$12.22
3	Nitrate of Soda, 19 lbs.... Superphosphate, 50 lbs....	1217	162	72	\$18.00	\$7.85	\$10.15
4	Nitrate of Soda, 19 lbs.... Sulphate of Potash, 25 lbs.	757	101	21	\$5.25	\$9.35	\$4.10
5	Superphosphate, 50 lbs.... Sulphate of Potash, 25 lbs.	1380	184	94	\$23.00	\$8.70	\$15.30

The soil in the foregoing experiment is a light, poor sand, and like many of the light soils over Ontario, shows a great deficiency in phosphorus. Using commercial fertilizer on Plot 5 gave a clear profit of \$15.30 per acre. Near this plot some immature turnips were turned under the previous fall and on this, the yield was equal to that on Plot 5, again

indicating the need of potash. On the other hand, on Plot 4, there is a loss of \$4.10 indicating the loss that may occur on any farm from a lack of knowledge of the requirements of a soil or crop. It is about time we, as farmers, were beginning to test our soils as to their fertilizer requirements.

Experiment 2—Tomatoes:

FERTILIZER EXPERIMENT WITH TOMATOES

On Farm of David Johnson, Norfolk Co.

No. of Plot	Fertilizer Applied.	Yield per plot in lbs.	Yield per acre in bush	Increase in yield per acre.	Value of increase at 25c per bush.	Cost of fertilizer per acre.	Profit or Loss
1	No fertilizer	600	80				
2	Nitrate of Soda, 19 lbs.... Superphosphate, 50 lbs.... Sulphate of Potash, 25 lbs.	1900	253 1-3	173 1-3	\$43.33	\$12.95	\$30.38
3	Nitrate of Soda, 19 lbs.... Superphosphate, 50 lbs....	1770	236	156	\$39.00	\$7.80	\$31.35
4	Nitrate of Soda, 19 lbs.... Sulphate of Potash, 19 lbs.	1440	192	112	\$28.00	\$9.35	\$18.65
5	Superphosphate, 50 lbs.... Sulphate of Potash, 25 lbs.	900	120	40	\$10.00	\$8.70	\$2.30

PLOT 1 AS CHECK

	Plot 2 Bush.	Plot 3 Bush.	Plot 4 Bush.	Plot 5 Bush.
Increase yield per acre, in bushels.....	173 1-3	156	112	40
Value of increase at 25c per bushel.....	\$43.33	\$39.00	\$28.00	\$10.00
Cost of fertilizer per acre.....	\$12.95	\$7.83	\$9.35	\$8.70
Profit and loss	\$30.38	\$31.35	\$18.65	\$2.30

The soil here is also poor and would be greatly benefitted by the use of complete fertilizers, though phosphate and nitrogen would be specially helpful.

Experiment 3—Gooseberries:

Does it pay to use commercial fertilizers? A perusal of the foregoing tables will answer the question. The men who have tried these experiments this year are convinced of their value where used intelligently. Our experiments with raspberries, turnips, corn and in the apple orchard all lead us to believe that the time

has come when Ontario farmers cannot afford to be without them for all heavy producing crops. Commercial fertilizers are expensive. The farmer, who would know how to use them best, must experiment. He must in some way learn what his particular soil requires, for, in the hands of men, there should be no unfertile lands. Our problem is not only to conserve but to supply the balance of ready plant food required by the growing crop, as milk or prepared food is supplied to the growing child. The crop says in effect: "Feed me and I will feed you."

FERTILIZER EXPERIMENT WITH GOOSEBERRIES

Plots 2x10 rods.
On Farm of Watson Woolley, Norfolk Co.

	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5
	No fertilizer.	Nitrate of Soda, 19 lbs. Superphosphate, 50 lbs. Sulphate of Potash, 25 lbs.	Nitrate of Soda, 19 lbs. Superphosphate, 50 lbs.	Nitrate of Soda, 19 lbs. Sulphate of Potash, 25 lbs.	Superphosphate, 50 lbs. Sulphate of Potash, 25 lbs.
Total pounds harvested all one picking...	798	1103	697	1044	814
Yield per acre	6384	8824	5576	8352	6512
Increase in yield per acre in lbs.....		2440	Loss	1968	128
Value of increase at 5c per lb.....		\$122.00	\$40.40	\$98.40	\$6.40
Cost of fertilizer per acre.....		\$12.95	\$7.85	\$9.35	\$8.70
Profit or loss		\$109.05	Loss \$48.25	\$89.05	Loss \$2.30

Standard value of fertilizers per ton—	
Nitrate of Soda.....	\$56.00
Superphosphate	\$18.00
Sulphate of Potash.....	\$51.00

"ALL TOGETHER."

"The man that uses hook and line pulls in his single fish,
But who join hands and pull a seine get all that heart can wish,
And each man's share is greater far, in size as well as weight;
The secret of success is this—Co-operate."

—David Chalmers.

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Practical Poultry Education for the School Children

GEO. L. WOLTZ

FOR some years a number of the district representatives of the Ontario Department of Agriculture have been trying to devise some means by which they could interest the farmers of their own district in the breeding of a high grade of utility poultry. In some instances a fair degree of success was realized, but in the majority of cases, farmers either lacked the necessary confidence in the promoter of such a scheme, or they were contented to follow in the same rut that their forefathers traversed years before their time. Little confidence seemed to be placed in the ability of the men who were trying to revolutionize the poultry industry. The possibilities of selective breeding were a delusion rather than a reality, and often those skeptical people did more material injury towards the upbuilding of the poultry industry than the few boosters could right in a long time. In consideration of all this, it was thought expedient to resort to some other method of stimulating the interest of the public in this important phase of agriculture. Some thought it would be wise to try and work through the public schools, and the following is a result of that experiment here in this county up to the present time.

Early in the summer of the present year, the writer received a consignment of twenty-five settings of eggs from the poultry department of the Ontario Agricultural College, the eggs being from choice utility stock, and to be used as a special feature in connection with our rural school fair.

There were to be five schools in the competition, and the eggs were to be divided equally among the schools. In the very beginning there was a scramble to see who would be the lucky ones, but the teachers carefully placed all eggs in the hands of the most responsible boys and girls, and those who would give them the most careful attention. Promises were readily made and the eggs were borne home by eager children. Children were eager for results in their work, being spurred on by a feeling of rivalry which is so characteristic in public school children.

The ultimate result of the experiment was that in almost every case there were more and better results from those eggs, despite the distance they had travelled, than the parents of the children had with their home produced stock. Numbers of enquiries were received from parents as to how this difference could be accounted for, and the invariable explanation given was that these eggs were the product of specialized poultry work. The breeding pens were mated up with birds that had records of performance in egg-laying that were worth mentioning, and, in addition to this, only those birds of strong constitution and vitality, as indicated by several factors in conformation, were used as breeding birds. It is a well established fact that "like begets like," so then, how could we expect birds of poor constitution to beget vigorous offspring? Surely the reason was plausible, and it carried weight.

Under specific instructions, these chickens were reared to maturity, and when the day for the school fair arrived, poultry was the principal feature of the fair. It was here that the Department had the first opportunity of forming an estimate of the success of the season's work. Leaving out of consideration one pupil who lost the eggs she received, by mere ill luck, there were sixty-nine per cent. of the chickens hatched and raised to maturity. It was clearly evident that the boys and girls were proud of their stock, for, even to their inexperienced eyes, they could see wherein their chickens surpassed those of the home grown stock. The prizes were so arranged that every exhibitor got a prize, these ranging from one dollar downwards. It was deemed wise to do this, realizing how easy it is to discourage a child, and even though the lower prizes might not have amounted to more than ten or fifteen cents, yet it was a little encouragement to enter the fight another year with renewed energy and determination.

It is hard to predict what the ulti-

mate outcome of the work will be, but from present indications, it promises fair results. It is a self-evident truth that "we learn to do by doing," and this maxim is exactly what the Department of Agriculture here had in mind when they inaugurated this scheme of interesting the public in Lanark County in producing better poultry. We have seen results already, but before next spring, after the stock has had a chance to prove its egg laying ability against the inferior stock peculiar to most farms, then we shall see results in brilliant colors. The parents have unconsciously become enthused, and many a proud father shows his neighbor the result of his son's work, and while the rural school is being used to give elementary education in this work, the children are being supplied with a high grade of stock to serve as a foundation to build upon. This movement is only in its infancy, and it is to be hoped that every rural school will soon take up the work, thus giving the rising generation a more wholesome idea of the dignity of poultry husbandry.

GOOD SPEECH.

Think not, because thine inmost
heart means well,
Thou hast the freedom of rude
speech; sweet words
Are like the voices of returning birds
Filling the soul with summer, or a
bell
That calls the weary and the sick to
prayer.
Even as thy thought, so let thy
speech be fair.

—Archibald Lampman.

Sandy McGregor's Ruse

R. H. YULE, '16.

HEH! Billy! Has 95 arrived in yet?"

"No word yet about her, Shorty; she'll be stuck to-night, I'm thinkin'."

The post office sorters at Toronto were sitting around on their cases, waiting for "Special 95" to bring in the mail bags from the west. Outside, a wild blizzard was raging across the sleeping city, and sending a cold blast across the office every time the door was opened. Because of this storm "Special 95" was now four hours over due, but every man who knew her way to the west, knew also of the "long grade cut" at Gillies Station, and therefore the reason.

"Billy, do you remember the night '95' was robbed and Sandy McGregor lost his 'registers'?" questioned one of the waiting men.

"I sure do," said Billy, with a shake of his head. Bully Jordan opened mail bags; so when Billy chose to talk everybody listened. Not because Billy's position was superior, or that his manner of speech carried an audience by its eloquence, but simply because if they didn't, and got into Billy's bad books, he could make it extremely nasty for them.

"Poor Sandy sure got a stunner that night," went on Billy.

"Tell us about it, Bill," came from one of the juniors waiting there.

"Well," went on Bill, "Sandy worked on this staff for a good many nights, when one night the superintendent drifted down, and started him on the 'North Shore' run, with 'Special 95.' All went like clockwork with Sandy till a year ago now, on St. Patrick's Day, when it was blow-

ing a hurricane all night. The 'long grade cut' filled to the wires, and '95' stuck in the middle of it. When she was pushed out and landed at the station, Sandy was on the floor and considerable blood lying with him. How did it happen? I don't know, and Sandy swears he doesn't, or at least, if he does, he won't tell. I only know it did, and the registers were gone, and it wasn't long till Sandy was too."

"Better beat it, men, while you've got a chance; '95's' stuck in ten feet of powder and likely to stay there till daylight," called the boss, and there was soon a move towards home.

Many a mile away in the middle of the swish of cutting ice flakes, an entirely different scene was taking place. Covered with ice and snow, groaning and panting like a great animal, No. 770 drew up at Gillies Station. Harcourt, the agent, ventured towards her and climbed to the cab, where Skip O'Connor and Pete McIntosh were busily at work.

"Say, Skipper," howled Harcourt above the storm, "the wires are down, and I've sent a plough out and it's stuck somewhere in this cut. Are you going to try the run?"

"Sure we are. It'll take more than this to stick '95,' with '770' pulling her. We'll shove the fire to her and make her push the whole blessed snow-drift out of the other end of the 'cut,'" said O'Connor.

"Oh, sure you will; I think I have heard all that stuff before," shot back Harcourt and ducked just too late to miss a squirt of heavy oil from the driver's oil-can.

"Give us those sheets and let's get out of this, Harcourt, or I'll swat you one with the broad side of this shovel that will make you think you've been in front of a Texas steer out for exercise," yelled O'Connor.

Sputtering and cursing Harcourt gave over the order sheets and "770" started slowly on her way. The storm seemed to increase in violence, and the wind shrieked around the train, driving the ice crystals with it, like fine particles of quartz. The very steam seemed to be blown away, and Pete McIntosh had all he could do to keep the pressure to standard.

"Slide in the coal, Pete. You'll have to fire like the very devil to get through this stuff," Skip said.

Pete nodded, and increased his energies at the shovel. He was far too busy with other thoughts to pay much attention to the engineer's orders. Not noticing Pete's silence, the driver continued:

"Do you remember last 'seventeenth,' Pete, how the wind and snow pretty near blew everything off this part of the continent?"

"Yes, I guess I do," answered Pete. "I have a sort of distant recollection of it."

"Well, sir! I remember it allright," said O'Connor. "I got stuck here that night, and before we got started the mail clerk had been hit on the head, and the registered bags stolen. I guess you read about it. That was some night, and I think this will be as bad."

They had almost forgotten the snow plough, and not till he saw a red light waving through the snow and only a few feet away, did O'Connor remember it. With a quick move the throttle closed, and the air brakes bit the wheels. Pete stopped work and looked up, although he knew the rea-

son before. In front of them, and partly turned around, was the snow-plough. This meant a delay and a serious one, too.

"Seven Seventy" pulled close to the scene of the derailment, and O'Connor pulled up the wind shield and climbed down to the rails, cursing the plough crew and Harcourt most fervently, turn and turn about, all the while. As soon as his face became accustomed to the snow he saw where he was. The plough had struck the planks at the Balsam Grove crossing and lay just at the junction of the steel and the road.

After a useless attempt to see ahead of him, Pete resumed his shovel. Many turbulent thoughts rushed through his mind, thoughts which he could not erase. A year before Pete had been busy and happy at a far different occupation; now he was certainly busy, but far from happy. Three short, quick jerks of the emergency whistle brought Pete "back to earth." No need to repeat them, for right well he knew their meaning. Quickly picking up the nearest tool handy (a large double wrench) he dropped from the cab and hurried along to the mail car. He was not first either, for bending over the red and white striped bags, Pete made out the form of Herbertson, the brakeman. It did not take long to hoist himself into the car and not much longer to stretch Herbertson on the floor with the wrench. Pete glanced at the forms of the brakeman and the mail clerk and then stepped to the cupboard at the side of the car and got a stimulant, by means of which he revived the latter.

"So you got him, eh? I'm glad of that," said the clerk.

"Yes, you can bet your bottom dollar I got him, and I've waited quite

a while, too, Leigh," replied Pete.

"Well, what the deuce! Where in the world did you come from, McGregor? I thought you had left the country," exclaimed Leigh, the mail clerk.

"Oh, I just happened up from the engine, when I heard you pull the ropes. Evidently I got here just in time, or else that scoundrel would have got those bags again," replied McGregor.

"Well, sir, it beats all," went on Leigh. "So you have been firing on this train and I didn't recognize you."

"Yes, I have been shoving away coal for some time, but I'm glad you didn't know me, because I wanted a chance to get that chap over there, and I've got him. He got me a year ago. Now it's my turn," explained McGregor.

"Here, Leigh, give me a hand' and we'll truss him up and stow him away so that he won't be in the road till we get in," directed McGregor.

Leigh did so, and Herbertson was securely bound, and laid on the bags for the rest of the trip. After a few moments McGregor left the car and went back to the engine where O'Connor was waiting for him.

"Come on, here, you loafer, get a move on. We've wasted five minutes here waiting for you. Don't you know you've been breaking rules leaving here without me knowing it? I'll report you to the train master when we get in. Just you wait and see," yelled O'Connor.

"Oh, dry up, Skipper, you sound like a megaphone," answered McGregor, getting down to the shovel again, and leaving O'Connor cursing everything in general, and Pete McIntosh in particular.

A glance around the car showed Leigh that some more government letters had nearly disappeared. Leigh

began to think of his recent conversation with the fireman. Why did fate allow McGregor to be on the same train that Herbertson planned to rob? How did Sandy get his job as a fireman, and why? Suddenly the answer dawned on him. McGregor had been assaulted in the same place, and under the same conditions, as Leigh had, and no doubt by the same person. He had been downed so quickly that he had no time to see his assailant clearly, and when the post office superintendent had interviewed McGregor, he had been unable to give a satisfactory explanation. As a result he was "let out" on circumstantial evidence. The rest was quite clear to Leigh. McGregor had secured a job as fireman under an assumed name. He had watched the man he suspected, and best of all, had caught him.

When the city was reached and Herbertson given over to the authorities, Leigh walked up towards the engine.

"What have you been doing, Leigh?" enquired O'Connor.

"I got hit on the head by Herbertson, and if it had not been for Sandy McGregor, alias Pete McIntosh, he would have got away with the registers," explained Leigh.

Skip O'Connor looked at Sandy, and then held out his hand.

"McGregor, I'll beg your pardon. I thought you were loafing," he said.

"Oh, that's all right, Skip. I knew you'd get wise to it before long," answered Sandy.

Sandy soon explained to headquarters, and was duly reinstated. Herbertson, when questioned, soon admitted having taken advantage of the other snow blockade to rob the mails, and had tried it again, but failed because of the long-delayed ruse of Sandy McGregor.

Points from the International Stock Show

The outstanding features of the great Chicago Exhibition

BY THE STAFF REPORTER.

THE Thirteenth International Fat Stock Show held at Chicago during the first week of December, 1912, was full of interest, information and inspiration to the farmer, stock breeder and student of agriculture. Perhaps nowhere else on the continent of America is gathered together such a large number of high class animals of the various kinds and breeds, as is the case at Chicago. Heavy draught horses, beef cattle, sheep and swine form the chief exhibits at this great show. And they have such uniform excellence and quality that they attract visitors from all parts of the United States and Canada. Not alone from the country districts, but also from the cities, for after all there is something about this show of live stock, so full of type, quality and style that attracts and interests the city bred as well as the country born.

Some idea of the magnitude of the International may be obtained by a consideration of a few facts. Exhibitors were present from Ontario, Manitoba, Saskatchewan, Montana, Wyoming, Texas, New York and that great stretch of country included in these boundaries. There were over 1,200 entries in horses, 1,150 in cattle, 850 in sheep, and 1,000 in swine. In addition to these there were the carload exhibits in sheep, swine and cattle. Then in the judging ring were to be seen at one time a class of horses numbering anywhere from twenty to seventy-five, and two

classes, sometimes three, of cattle, in each of which there would be from ten to thirty-five or forty head. There were eight breeds of horses, five of cattle, ten of sheep and six of swine, besides grades and crosses represented at this great show.

Canadian exhibitors were not very numerous, but they brought fame to Canada and won honor and distinction for themselves. J. D. McGregor, of Brandon, Manitoba, captured the grand championship for the best fat animal with his grade Angus steer, Glencarnock Victor, which weighed over sixteen hundred pounds. J. and J. D. Campbell, of Woodville, Ontario, won the grand championship in sheep on their pure bred yearling Shropshire wether. The McGregor herd won several firsts and both the male and female championships in Aberdeen-Angus cattle. R. J. Caswell, of Saskatoon, had an exhibit of Short-horns which attracted the attention and admiration of many visitors. In the breeding classes of sheep Canadian flocks were always strong, and in Leicesters, Oxfords and Lincolns secured nearly all the prizes. In Clydesdales, Graham Brothers of Claremont were very strong in the stallion classes, winning the grand championship on their aged stallion, Lord Gleniffer, a magnificent horse, perhaps a little upstanding, but with lots of substance, excellent quality and true, straight action.

The popularity of the Percheron amongst the farmers and horsemen

of the United States was an outstanding feature of the show. There were over six hundred and fifty entries in this breed, more than all the other breeds of horses combined. It is a clean-legged horse of large size and good quality. The point which makes it a favorite with many is its ability to do heavy work and keep at it day after day. Combined with this it has a good disposition, is easily broken to harness, and is alert and active.

A good deal of time is spent, and profitably, by many visitors at the show in viewing the carload exhibits of cattle. These, perhaps, give a clearer idea of what the market demands in first-class stock than do the individual entires. Here were to be seen load after load of the best beef cattle that have ever been brought to the Union Stock Yards. All the beef breeds were well represented in the yearling, two-year-old and three-year-old classes. The grand champion lot was a load of Angus yearlings, weighing over twelve hundred pounds each. This is the tenth time the "doddies" have won out in the car lots since the first International in 1900. The Herefords have won twice and the Shorthorns once. The champion load was a bunch of low-set, smooth, thick, evenly-fleshed steers, which were well finished. There were several other car loads nearly as good. A bunch of Shorthorn yearlings ran the Angus steers very close for first place. A study of these fat animals, the cream of the country's production, gives the feeder and producer a knowledge of the type and quality required in a good beef animal, which is invaluable to him in his business. There was a uniformity and a finish about the fat cattle that could not help but leave its impres-

sion in the practical farmer, and shows one what is possible in the production of fat cattle. The type the market calls for and the one most profitable to feed is a low-set, deep, thick animal, smooth over the shoulder and hooks, and having good spread of rib and width of loin, with a thick, firm covering of flesh on top. A young animal can be fed more profitably than an older one and produces flesh of better quality, which consequently commands a higher price on the market.

Perhaps the chief lesson taught to Canadian farmers by the International which has just passed, is the fact that a steer bred in Canada and fattened on Canadian-grown hay and grain won out in competition with the best which came from any of the states in the great corn belt. So that the theory that corn is an essential feed in the production of beef animals of the highest quality, has been dispelled. It must also be remembered that corn-fattened animals cost much more to produce than formerly on account of the large increase in the price of corn. There are large areas in both eastern and western Canada admirably suited for the growing of barley and alfalfa. So that it would seem Canadian farmers and stockmen have a splendid opportunity to go more largely into the production of beef cattle. The supply of good cattle on the markets is light. We can grow the feed. We have the foundation stock. If men with capital, energy and ability take up this branch of agriculture, there is nothing to prevent Canada, especially Western Canada, from becoming one of the chief producers of high-class beef in the world.

—L. F. T.

Pruning the Apple

A brief summary of common-sense rules for pruning

P. C. DEMPSEY, B.S.A.

IN DISCUSSING the why, how and when of pruning the apple, we must recognize the fact that local conditions affect the time of pruning and the severity of cutting back. This article, being based on experience gained in the district along the north shore of Lake Ontario, applies more directly to this section than to other sections in the matter of dates for pruning, though much of it is directly applicable to all apple growing sections.

Why prune? Since man first claimed the apple tree from the forest it has been his desire to grow the largest and most desirable fruits possible. The observing man noticed that the tree with thinnest top and dying branches gave the reddest apples, and wondered, "why not make other trees do the same?" Experiment taught him that it could be done, and time has brought us many theories and much scientific data on pruning.

In this age of commercialism it has become a matter of bread and butter to the would-be apple grower that he should know how to prune most effectively. For it is now a matter of producing the best fruit or seek some other means of earning a living. Pruning is one important factor in making a tree produce a maximum crop of the best quality. The successful pruner must see more than a strong, healthy frame in his apple tree. He must see openings for light to develop fruit buds and room for fancy apples to "get the color."

No longer can the would-be apple grower let his trees grow wild for the first few years, then reclaim

them. The day of the high-headed orchard is past. Growers dislike them, pickers refuse to pick them, sprayers cannot spray them, and they cannot produce the same quality of apples at as low a cost as the lower-headed orchards.

In order to be able to stay with the game in these days of close competition in growing apples, the would-be apple grower must follow a new line of action.

Commencing with the one or two year old tree which is planted, it should be trimmed into a whip and cut back to a height of twenty-four to thirty inches from the ground.

In the second year several branches that started out in the first season need cutting back from one-half to two-thirds of their length to make them stocky. This should be followed up each year until a strong tree is formed after the ideal in the mind of the grower.

There are two systems—the vase and the central leader system—forming the head of the tree. The former has a hollow head with no branches in the centre. The latter has a central leader running up the side branches, coming out at intervals along it. Space will not permit a discussion of the merits of these two systems. Both are good in theory, but in practice it is a difficult thing to make every tree in an orchard conform to either, and it is best to make the best of each individual tree as it is formed. Seldom do two trees present the same problem, so modifications of one or the other of these systems must be used.

As the tree reaches bearing age its weak points appear. If a tenden-

cy to split is shown, wires may be stretched across from limb to limb to support the top.

These wires, fastened by screw-eyes to the branches, prevent splitting of the tree and hold the branches in an upright position. This latter aid is very important in that the upward movement of the sap enables it to mature the fruit at the ends of the branches. This would not be done if the branches were allowed to droop to the ground, or near it. Examples of this may be seen in any orchard where props are used. Fruit is much even in size and better colored on limbs held up than on those which are allowed to droop.

On large bearing trees, where the orchard is large and each tree can be pruned only once in three or four years, several rules may be considered before cutting anything from the tree:

1. Remove all dead wood.
2. Cut off all limbs too low to be left on until the next pruning.
3. Remove cross limbs, taking, where possible, the under one. This saves exposing a wound on the upper side of the branch left.
4. Thin the tree by cutting from the out side. Limbs or leading branches may be cut back to where they are from one-half to three-quarters of an inch in diameter.
5. Leave only what sap shoots are necessary to renew the tops, if such be needed.
6. Don't keep on cutting after the tree is finished.
7. If the tree needs wiring, put it in at once.

A few rules for cutting may be noted:

1. Cut only with instruments that leave a smooth cut.

2. In sawing off large limbs, saw from underneath before sawing from the top, as this prevents splitting down.

3. Saw off as near to the large limbs as possible, that the cut may heal without waiting to cover up a stub.

4. Avoid cutting so that the wound is on top of a limb.

5. Make all cuts slant so that the rain will run off.

6. Where possible cut back into the live wood.

To gain experience thinning trees it is best to study the most profitable tree of each variety and thin the rest to its standard. Much valuable information can be gathered from such study. If in Snow or Duchess your most profitable tree is one with a very thin top, thin out the others to somewhere near the ideal producer.

When prune? Pruning may be done here with best results from late February to June. Results from experiments indicate that wounds heal in proportion as the time of the cut nears spring.

The best instruments for pruning are those which make smoothest cuts. Many fancy pruning saws are on the market, but any fine-toothed saw will make a smooth cut.

As for clippers and other cutting devices they are often necessary. Care should be taken to avoid those which bruise the bark on the side of the cut next to the tree.

Dressings for wounds have varied from grafting wax to tangle foot and from white lead to coal tar.

Wounds should be disinfected with a solution of corrosive sublimate and then covered with something to prevent excessive evaporation and infection. Tangle foot or coal tar gives excellent results.

Poultry Husbandry and the Agricultural College

Some practical problems which must be solved
by careful investigators

M. A. JULL, Macdonald College

IN reviewing the pages of the history of the poultry industry of Canada two facts stand out pre-eminent; the first, the phenomenal though natural growth of the industry, particularly within the last five years, and the second, the lack of unity in effort and co-operation among the leading poultrymen in establishing a Canadian poultry industry. The rapid development of the industry is common knowledge. It has been due largely to the increased population of the country and to the increased per capita consumption of poultry products. Now that eggs and dressed poultry are being marketed in better condition they are more popular, and there is a larger demand for them. Prices have risen and they seem to be rising simultaneously with the rise in popularity of the products. Within recent years Canada has been changed from an exporter to an importer of poultry products. Such a change would lead one to believe that the supply is not keeping pace with the constant and increasing demand, and while there is no market like the "home" market, still we know that many thousands of dollars are being lost annually in the business of poultry keeping. In many cases we are not producing eggs and dressed poultry as economically as might be done, and we also know that we are actually losing a considerable portion of the value of the products

through poor methods of marketing. While these deplorable conditions exist there is little hope that the profits of the producers will be increased; so that what is first needed is to change the conditions.

To whom shall we look to bring about these changes? In reply we can but suggest the Governments and the Agricultural Colleges. Of the work of the Governments little need be said; present indications are that the Federal Government is taking a more active interest in poultry matters than formerly and in view of the comparatively little it has done in the past it is hoped it will realize its increased responsibilities in the present. But what of the Agricultural Colleges?

While the Agricultural Colleges throughout Canada have done much for the poultry industry of the country, the responsibility of the Colleges and the demands made upon them are greater than ever. They have done much to make farm poultry keeping more profitable. But now there is a larger poultry industry, as a result of rapid growth, and conditions have changed. The industry has assumed a new aspect and the great need of the time is systematic organization. The formation of a well-organized Canadian poultry industry will fall upon the various Government bodies and the Colleges should supply the Governments with men to carry on this work. In Canada, at the present

time, there is need for several competent poultrymen to carry on work which is being undertaken by the Dominion Government. Additional assistance is being required in the various Provinces from time to time. Where are these men coming from? They should be supplied by the Colleges and the supplying of these men is one of the new responsibilities of the College. It is a question if the present poultry husbandry curriculum in the majority of the Colleges should not be advanced and enlarged.

ously considered. A short comment from Professor Atwood on this point is worthy of note. "Not only is the industry whose problems we are studying a large and important one, but poultry husbandry as carried on at the present time, with its artificial methods and appliances, is a development of recent years and there is behind this business no such accumulation of facts and experiences as is the case in the other branches of live stock industry that have been carried on for a much longer time.



ADMINISTRATION BUILDING, POULTRY DEPARTMENT, MacDONALD COLLEGE, QUE.

It is not suggested that the poultry option should be a major. It does seem, however, that a course in poultry should be given embodying more advanced scientific work and along with which a liberal amount of work should be taken in other branches of agriculture, particularly horticulture, dairying and animal husbandry. Poultry raising is an important industry, though naturally not as significant as the other industries just mentioned. But the point to be made here is that poultry raising, which involves a few fowls on nearly every farm, is more important than previ-

Consequently there are numerous new problems awaiting solution, and new difficulties arising which demand the attention of investigators in this line of work. In fact, the problems which we may select for study are so numerous that there is some danger that we may spread our energies over too wide a range thus interfering with the quality of our work. The ideal is to concentrate effort on a few specific problems until final results are achieved and presented to the public."

Here we have a timely suggestion for concentration and co-operation

among the various Agricultural Colleges and also among the Governments and the Colleges.

Quoting further from the extract in the report of the American Association of Instructors and Investigators in Poultry Husbandry. "Questions of this nature must be settled to a large extent by each investigator according to his equipment, local conditions and his ability to carry out a certain line of work. But, speaking generally, it would seem

3. Further studies are needed in the theory of feeding fowls for the production of meat and eggs, as most of our knowledge in this respect is vague, and based on insufficient evidence.

4. The production and handling of market eggs should be studied with reference to the quality of eggs; egg preservation, and cold storage.

5. Investigations should be carried on concerning diseases and parasites, and those more general factors



CONTINUOUS LAYING HOUSE AT MacDONALD COLLEGE.

This house is 15x60 feet, and is divided into three pens, each accommodating 50 birds.

that the main lines of improvement lie somewhat in the following directions:

1. Investigations should be conducted in the production of eggs better suited for incubation than those generally produced. A large amount of money is lost in this country each year in the incubation of eggs wholly infertile or with weak germs. This should be remedied.

2. Investigations are needed in incubation and brooding, so that a larger percentage of chicks can be brought to maturity.

which have to do with the efficiency of fowls, including the subjects of housing and management."

These questions involve the responsibilities of the College as an educational factor. It might not be amiss to mention that the Government should undertake some of this work, such as the cold storage problem, the handling of market eggs, egg preservation, the establishing of breeding stations, and the distribution of pure bred stock.

The poultry department of the College also has the commercial side.

This is practical, and should be so for the producer's benefit. It may not be advisable for the College to undertake the breeding of poultry for exhibition, but certainly well-bred standard breeds should be maintained.

In closing, permit me to quote a few words from the report of the Committee on Education and Experimentation of the American Poultry Association, regarding the importance of investigation in poultry husbandry, and which suggests problems for the colleges.

"The practical poultryman encounters difficulties at every turn. Why are so many of the eggs infertile? Why do so many chicks die in the shell? Why do so many chicks die after incubation, and what is the remedy? How should little chicks be fed for best results? How should one feed various breeds during different seasons for egg production? What is the best type of house for winter egg production? How should one mate fowls in order to obtain certain desired qualities in the offspring? What is the cause and remedy for White Diarrhoea, for Roup, and other serious ailments? How do the constituents in

various poultry foods differ in digestibility?

How many hens can be kept in one flock to best advantage? How many chickens can be reared in one flock most profitably? How does food effect the color and flavor of eggs, of flesh? What is the best combination of foods, and most economical ration and method for fattening? What is the comparative value of poultry foods and various by-products? Is grit essential? How should fowls be fed during the moulting season? What is the importance of green food and free range, as compared with bare yards?

Who knows the chemical and embryological changes that take place within the egg during incubation? Who knows the chemical and physical changes which occur in the keeping of poultry products inside or outside of cold storage? Who knows the life, history and rapidity of multiplication of external and internal poultry parasites, several hundred of which have been discovered and named?"

These are a few of the more important practical problems now before us. They are all capable of solution.

"KINDNESS."

A summer rose is fair to me,
 With pearly dewdrops glittering bright,
 And beautiful the sweet spring flowers,
 Blue violets and lilies white;
 They lend rich fragrance to the morn;
 Of innocence and joy it tells:
 I love them well, but dearer far
 I love the heart where kindness dwells.

Dairy Records

Eliminating the "boarder" from the herd

THE country of Denmark is constantly being held up as an object lesson, and we certainly can learn a great deal from the business-like methods of this thriving little country. Since the farmers of Denmark began to specialize in dairying, they have been able to more than double the annual production of each cow. This has been done by careful testing, systematic selection, and by breeding only from the highest producing cows.

What started the Danes keeping individual cow records? The story is interesting. About the middle of the nineteenth century Denmark was engaged in a war, from which she emerged victorious, but with a heavy national debt. A short time afterwards she was forced into war again, but this time she was defeated. The debt was enormous and the able-bodied men few. Taxes soared to five dollars per acre, and money could hardly be borrowed. To make matters worse, the exportation of beef into England was restricted by laws which compelled Danish animals to be quarantined from two or three weeks to two months after arriving in England before they could be disposed of. The Danes were apparently up against it, but what better they had shipped to England had a good reputation, so they devoted their attention to dairying.

In 1888 their cows averaged about 112 pounds of butter per year. This was too low for dairy herds, so some of the wealthier Danes imported some dairy cattle, but the climate did not

suit them. Consequently they soon deteriorated until they were worse than their old stock. There was only one thing to do: that was to gradually change their beef animals into dairy animals, and in this they succeeded admirably. Today the average annual production per cow is more than twice what it was in 1888. They have gone at this building up and improving process in a thorough and systematic way, and not in that haphazard way that is too often followed in Ontario. That is, by trying to judge by appearance rather than by performance.

In keeping dairy records, there are three things to be kept in view: First—How much milk does each cow give in one year? Three or seven day tests are all right in their place, but the real benefit comes from the yearly test. Second—How many pounds of butter-fat does that milk contain? And Third—What does it cost to feed each cow per year? Very high yields of milk and butter are not always profitable, because the cost of production is often more than proportionately increased. It is net profit that counts. We must strive for economical yields. Foods with a high percentage of digestible protein as oilcake, produce a large flow of milk, but continued high feeding of such material is not economical, as the cow loses her capacity and her ability to turn roughage into milk. The returns from a herd fed largely on concentrates are undoubtedly large, but the profits are usually smaller than they would have been

had the right class of cows been fed more roughage and less concentrates.

There are a class of cows that will eat a certain amount of feed, digest part of it and turn the digestible part into meat. They are suitable for beef animals. Another class, under the same conditions, will turn most of the digested material into milk. That is the kind that the dairyman must raise and develop. A third class of cows eat just as much, but produce neither meat nor milk. That class is not wanted anywhere, but, unfortunately, they are quite numerous. To find what animals belong to the second class it is necessary to weigh each cow's milk after each milking, and also to have each cow's milk tested for butter fat at intervals. If this is done, the owner will certainly be surprised at the great variation between the cows. In many cases he will find that

what were considered the poor cows were really the money-makers and vice versa. If the owners were to govern themselves by the records, it would be impossible to estimate the benefit it would do. Dairymen in Ontario have increased their annual output from twenty to fifty per cent. in a few years without keeping more animals or feeding more grain, although as soon as a person finds out his money-making cows, he naturally feeds them better.

Farmers are naturally poor business men. As long as they have a slightly increased bank account at the end of each year they are generally satisfied, although by a little systematic work this increase could have been doubled. What is needed in the dairy industry today is more improvers of our dairy breeds and not so many dealers in high-class dairy stock.

—C. W. S.



ALFALFA

What makes the landscape look so fair,
What blossoms bright perfume the air,
What plant repays the farmer's toil
And will enrich the worn out soil?—

Alfalfa.

What grows in loam and clay and sand,
What lifts the mortgage off the land,
What crop is cut six times a year
And no foul weeds in it appear?—

Alfalfa.

What makes the swine so healthy feel,
And never raise a hungry squeal,
That wholesome food that never fails
To put three curls into their tails?—

Alfalfa.

What makes all other stock look nice,
And brings the highest market price,
What fills the milk pail, feeds the calf,
And makes the old cow almost laugh?—

Alfalfa.

What makes the poultry good as gold,
When eggs are at a big price sold,
What makes the happy colts all play,
While mothers graze thruout the day?—

Alfalfa.

What is the crop that always pays,
And will mature in forty days,
Resisting drought, the frost, the heat,
Whose roots reach down one hundred feet?—

Alfalfa.

Rhubarb Forcing

THOMAS DELWORTH, WESTON

THE forcing of rhubarb is a very interesting operation that will sometimes present some puzzling problems to the amateur. Any article on the subject would be incomplete unless it considered the field culture as well, for unless the roots to be used have had good cultivation in the field, it would be impossible to have the best success in forcing.

We usually commence operations in early spring by dividing up old roots into single crowns and setting them out in rich soil in rows three feet apart, the roots spaced two feet apart in the rows. Cultivate thoroughly and manure freely. Rhubarb is a gross feeder. Do not pull stalks during summer from roots intended for forcing, but keep all seed stalks cut out before blooming. The roots will be best for forcing when two or three years old, after that crowns are all the more numerous but smaller. Plough out roots intended for forcing late in fall and let them lay on top of the ground, with soil adhering to them, and freeze thoroughly before taking them to the greenhouse. I have seen roots that have been brought into the greenhouse without being frozen rot without starting a sprout, while others brought in two or three weeks after freezing start a vigorous growth right away. Empty root cellars or

under bench spaces in greenhouses are most commonly used for this work.

The market requirements are a good sized stalk, firm in texture, and deep red in color. The less leaf the better. The main factors in producing these are: first, temperature, which should be from forty to forty-five degrees; much warmer than that will tend to produce "pithy or punky" stalks of light color. Second, moisture; if allowed to get dry after starting growth, the crop will be shortened considerably.

The question of controlling leaf development can be easily settled by excluding light. Rhubarb grown in the greenhouse in full sunlight will produce large leaves and very short stalks; the opposite is the case when grown in darkness. Most growers practice growing in total darkness. Rhubarb roots during the forcing process appear to simply use up and exhaust the vitality stored up during the growing season in the open ground.

A word as to varieties. For general trade I find nothing better than the Myatt's Lenneans. If you want a few very large stalks, try Victoria or the Sutton. In this connection, I don't advise raising rhubarb roots for commercial purposes. I find that they usually present too many varietal differences to be satisfactory.

How I Edited an Agricultural Paper

MARK TWAIN

I DID not take temporary editorship of an agricultural paper without misgivings. Neither would a landsman take command of a ship without misgivings. But I was in circumstances that made the salary an object. The regular editor of the paper was going off for a holiday, and I accepted the terms he offered and took his place.

The sensation of being at work again was luxurious, and I wrought all the week with unflagging pleasure. We went to press, and I waited a day with some solicitude to see whether my effort was going to attract any notice. As I left the office, toward sundown, a group of men and boys at the foot of the stairs dispersed with one impulse, and gave me passage way, and I heard one or two of them say, "That's him!" I was naturally pleased by this incident. The next morning I found a similar group at the foot of the stairs, and scattering couples and individuals standing here and there in the street, and over the way, watching me with interest. The group separated and fell back as I approached, and I heard a man say, "Look at his eye!" I pretended not to observe the notice I was attracting, but secretly I was pleased with it, and was proposing to write an account of it to my aunt. I went up the short flight of stairs, and heard cheery voices and a ringing laugh as I drew near the door, which I opened, and caught a glimpse of two young rural looking men, whose faces blanched and lengthened when

they saw me, and then they both plunged through the window with a great crash. I was surprised.

In half an hour an old gentleman, with a flowing beard and a fine but rather austere face, entered, and sat down at my invitation. He seemed to have something on his mind. He took off his hat and set it on the floor, and got out of it a red silk handkerchief and a copy of our paper.

He put the paper on his lap, and while he polished his spectacles with his handkerchief, he said, "Are you the new editor?"

I said I was.

"Have you ever edited an agricultural paper before?"

"No," I said, "this is my first attempt."

"Very likely. Have you had any experience in agriculture practically?"

"No; I believe I have not."

"Some instinct told me so," said the old gentleman, putting on his spectacles, and looking over them at me with asperity, while he folded his paper into a convenient shape. "I wish to read you what must have made me have that instinct. It was this editorial. Listen, and see if it was you that wrote it:

"Turnips should never be pulled, it injures them. It is much better to send a boy up and let him shake the tree."

"Now, what do you think of that?—for I really suppose you wrote it."

"Think of it? Why, I think it is good. It think it is sense. I have no doubt that every year millions and

millions of bushels of turnips are spoiled in this township alone by being pulled at a half-ripe condition, when, if they had sent a boy up to shake the tree—"

"Shake your grandmother! Turnips don't grow on trees!"

"Oh, they don't, don't they? Well who said they did? The language was intended to be figurative, wholly figurative. Anybody that knows anything will know that I meant that the boy should shake the vine."

Then this old person got up and tore his paper all into several small shreds and stamped on them, and broke several things with his cane, and said I did not know as much as a cow; and then went out and banged the door after him, and, in short, acted in such a way that I fancied he was displeased about something. But not knowing what the trouble was, I could not be any help to him.

Pretty soon after this a long, cadaverous creature, with lanky locks hanging down to his shoulders and a week's stubble bristling from the hills and valleys on his face, darted within the door, and halted, motionless, with finger on lip, and head and body bent in listening attitude. No sound was heard. Still he listened. No sound. Then he turned the key in the door, and came elaborately tiptoeing toward me till he was within long reaching distance of me, when he stopped, and, after scanning my face with intense interest for a while, drew a folded copy of our paper from his bosom and said:

"There, you wrote that. Read it to me—quick! Relieve me. I suffer."

I read as follows, and as the sentence fell from my lips, I could see

the relief come, I could see the drawn muscles relax, and the anxiety go out of the face, and rest and peace steal over the features like the merciful moonlight over a desolate landscape:

"The guano is a fine bird, but great care is necessary in rearing it. It should not be imported earlier than June or later than September. In the winter it should be kept in a warm place, where it can hatch out its young.

"It is evident that we are to have a backward season for grain. Therefore it will be well for the farmer to begin setting out his corn-stalks and planting his buck-wheat caks in July instead of August.

"Concerning the pumpkin—This berry is a favorite with the natives of the interior of New England, who prefer it to the gooseberry for the making of fruit-cake, and who likewise give it the preference over the raspberry for feeding cows, as being more filling and fully as satisfying. The pumpkin is the only esculent of the orange family that will thrive in the North, except the gourd and one or two varieties of the squash. But the custom of planting it in the front yard with the shrubbery is fast going out of vogue, for it is now generally conceded that the pumpkin as a shade tree is a failure.

"Now, as the warm weather approaches, and the ganders begin to spawn—"

The excited listener sprang toward me to shake hands, and said:

"There, there—that will do. I know I'm all right now, because you have read it just as I did, word for word. But, stranger, when I first read it this morning, I said to myself, 'I never, never believed it before, notwithstanding my friends kept me under watch so strict, but now I believe I am crazy;' and with that I fetched a howl that you might have heard two miles, and started out to kill somebody—because, you know, I knew it would come to that sooner or later, and so I might as well begin. I read one of them paragraphs over again, so as to be cer-

tain, and then I burned my house down and started. I have crippled several people, and have got one fellow up a tree, where I can get him if I want him. But I thought I would call in here as I passed along and make the thing perfectly certain; and now it is certain, and I tell you it is lucky for the chap that is in the tree. I should have killed him sure as I went back. Good-bye, sir, good-bye; you have taken a great load off my mind. My reason has stood the strain of one of you agricultural articles, and I know that nothing can ever unseat it now. Good-bye, sir."

I felt a little uncomfortable about the cripples and arson this person had been entertaining himself with, for I could not help feeling remotely accessory to them. But these thoughts were quickly banished, for the regular editor walked in. (I thought to myself, "Now, if you had gone to Egypt as I recommended you to, I might have had a chance to get my hand in; but you wouldn't do it, and here you are. I sort of expected you.")

The editor was looking sad and perplexed and dejected.

He surveyed the wreck which that old rioter and those two young farmers had made, and then said, "This is a sad business—a very sad business. There is the muscilage bottle broken, and six panes of glass, and a spittoon, and two candlesticks. But that is not the worst. The reputation of the paper is injured—and permanently, I fear. True, there was never such a call for the paper before, and it never sold such a large edition or soared to such celebrity. But does one want to be famous for lunacy and prosper upon the infirmities of his mind? My friend, as I

am an honest man, the street out here is full of people, and others are roosting on the fences, waiting to get a glimpse of you, because they think you are crazy. And well they might after reading your editorials. They are a disgrace to journalism. Why, what put it into your head that you could edit a paper of this nature? You do not seem to know the first rudiments of agriculture. You speak of a furrow and a harrow as being the same thing; you talk of the moulding season for cows; and you recommend the domestication of the pole-cat on account of its playfulness and its excellence as a rat-ter! Your remark that clams will lie quiet if music be played to them was superfluous — entirely superfluous. Nothing disturbs clams. Clams always lie quiet. Clams care nothing whatever about music. Ah, heaven and earth, friend! If you had made the acquiring of ignorance the study of your life, you could not have graduated with higher honor than you could today. I never saw anything like it. Your observation that the horse-chestnut as an article of commerce is steadily gaining in favor is simply calculated to destroy this journal. I want you to throw up your situation and go. I want no more holiday—I could not enjoy it if I had it. Certainly not with you in my chair. I would always stand in dread of what you might be going to recommend next. It makes me lose all patience every time I think of your discussing oyster-beds under the head of 'Landscape Gardening.' I want you to go. Nothing on earth could persuade me to take another holiday. Oh! Why didn't you tell me you didn't know anything about agriculture?"

"Tell you, you cornstalk, you cabbage, you son of a cauliflower? It's the first time I ever heard such an unfeeling remark. I tell you I have been in the editorial business going on fourteen years, and it is the first time I ever heard of a man's having to know anything in order to edit a newspaper. You turnip! Who wrote the dramatic critiques for the second-rate papers? Why, a parcel of promoted shoemakers and apprentice apothecaries, who know just as much about good acting as I do about good farming and no more. Who review the books? People who never wrote one. Who do up the heavy leaders of finance? Parties who have had the largest opportunities for knowing nothing about it. Who criticise the Indian campaigns? Gentlemen who do not know a war-whoop from a wigwam, and who never have had to run a foot race with a tomahawk, or pluck arrows out of the several members of their families to build the evening camp-fire with. Who wrotes the temperance appeals, and clamor about the flowing bowl? Folks who never draw another sober breath till they do

it in the grave. You try to tell me anything about the newspaper business! Sir, I have been through it from Alpha to Omaha, and I tell you that the less a man knows the bigger noise he makes and the higher the salary he commands. Heaven knows if I had been ignorant instead of cultivated, and impudent instead of diffident, I could have made a name for myself in this cold, selfish world. I take my leave, sir. Since I have been treated as you have treated me, I am perfectly willing to go. But I have done my duty. I have fulfilled my contract as far as I was permitted to do it. I said I could make your paper of interest to all classes—and I have. I said I could run your circulation up to twenty thousand copies, and if I had had two more weeks I'd have done it. And I'd have given you the best class of readers that ever an agricultural paper had—not a farmer in it, nor a solitary individual who could tell a watermelon tree from a peach vine to save his life. You are the loser by this rupture, not me, pie-plant. Adios."

I then left.

DOWN ON THE FARM

How dear to our hearts was the old horse and cutter,
The old horse and cutter we knew long ago;
We would get them both out with the first snowflakes flutter,
And keep them both going six hours or so.

The old-fashioned pair—how we'd grumble and mutter
When the wood pile was white and the north wind was raw;
For the horse was a saw-horse, and as for the cutter—
It was only an old-fashioned, jerky bucksaw.

—Chicago News.



QUERIES


Question.

Concord, Dec. 13th, 1912.

Query Department
O. A. C. Review.

Dear Sir—My last two churnings would not come, only just like foam, and when it did the butter was more like ice-cream, and would not stay together when it was done. Will you kindly let me know the reason or what I can do to get it right? I would like to know soon, before I churn again. For winter I always have the cream to the heat of between sixty and seventy degrees, and in summer I have it at sixty degrees and never have any trouble. I have tried everything I can think of but could not get the butter the last two times. Is it anything in the feeding? We feed mangles and millet.

Yours very truly,
Mrs. G. C.

Answer.

Your trouble is a common one in the winter time, when cream is often too cold at the time of churning, or too thin—that is, having too much skim milk in it—or the trouble you mention may have been caused by an abnormal fermentation.

If you use a separator, I should advise changing the cream-screw so as to give a fairly rich cream—not more than one gallon and a half of cream to ten gallons of milk. We should also advise churning at a temperature between seventy-two and seventy-four degrees, assuming that your thermometer is correct.

If this does not overcome the dif-

ficulty, then we would advise pasteurizing—that is, as soon as you have sufficient collected for churning, set your cream can into a can or tub of hot water at about one hundred and eighty to one hundred and eighty-five degrees; stir the cream until it reaches one hundred and sixty degrees, then remove from the hot water, allow to stand for ten or fifteen minutes, then put into cold water and stir until it is cooled to seventy degrees; next add for each three gallons of cream about one pint of good flavored sour skim milk or butter milk to start the ripening process; stir this thoroughly through the cream, cover the cream can and set in a moderately warm place, such as near the stove, for about twenty hours, when the cream should be ripe and ready for churning. Churn this cream at about sixty-eight or seventy degrees, and it ought to give you butter in about twenty or thirty minutes. We do not think there is anything in the feeding which would cause the trouble which you mention.

Question.

Madoc, Dec. 16th, 1912.

Query Department
O. A. C. Review.

Dear Sir—I am milking a few cows this winter. I have some good ensilage and a little alfalfa hay and turnips and good oat straw.

I can buy cottonseed meal for \$35 per ton, oil cake for \$33.50 per ton, "Shoemaker" for \$28.00 per ton, molasses meal for \$35 per ton, oat

chop for \$25 per ton and wheat bran for \$24 per ton.

What would you advise me to feed and how much? Yours very truly.

W. T. H.

Answer.

Would suggest the following ration for milk cows during winter: 30 to 40 pounds of corn silage, 8 to 10 pounds of alfalfa hay or some other good clover hay, all the oat straw which the cow can eat, if you have it to spare, and from half a bushel to one bushel of turnips, although turnips are generally considered risky feed for a cow, owing to the fact that they taint the milk. We would give this amount of feed to each cow in two feeds, every night and morning, except the oat straw, which may be given to the cows at noon.

For meal ration we would suggest 3 to 4 pounds of bran, 3 to 4 pounds of oat chop, and 1 to 2 pounds of either oil cake or cotton seed meal. At the prices quoted to you, viz.: cotton seed meal \$35.00 per ton and oil cake \$33.50, I think I would prefer the oil cake for milk cows, although usually cotton seed meal is cheaper than oil cake. We would advise you to mix the meals together, and give half in the morning and half at night on top of the silage, hay and pulped roots, in case you are cutting your hay and pulping your roots and mixing with your silage for some time before breeding, which is the better way where you have apparatus for cutting hay and pulping roots. After all, a person has to use a good deal of common sense in preparing rations for and in feeding them to cows; also the relative prices of your meals must be taken into consideration.

Question.

Hagersville, Ont., Dec. 20, 1912.

Query Department

O. A. C. Review.

Dear Sirs—I have a field with a quicksand bottom. If it were drained, what crops would be most suitable to grow on it to bring it into condition? Top soil is black muck, about ten inches deep. How would you dig the ditch to prevent caving in, and how would you lay the tile to prevent them from filling with sand? It grows nothing but June grass.

H. J. L.

Answer.

Dear Sir—If there is very much water in the sand you are likely to have considerable trouble in ditching your field. However, it can be done. Dig only a very short piece at a time, say enough for three or four tile. You can prevent the ditch from caving in by packing sods very firmly against the sides as you go down. Then, as you get near the bottom, scrape out a place large enough for one tile, lay the tile in position and place a spade over the end to keep the sand from filling it. The spade can be held in position by placing a crow-bar in a horizontal position across the ditch, back of the spade. If possible, place a piece of burlap around each joint, and then cover the joint with sods, fill in the top soil next the tile and pack it to hold the tile in position. Now scrape out a place large enough for another tile and proceed as before.

When this land is drained it should be suitable for any farm crop. The best kind of crop to bring it into condition would be a hoed crop. This, if well cared for, would rid the land of June grass, and bring it into a good state of cultivation.

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Question.

Forest, Lambton County, Ont.
Dec. 10th, 1912.

Query Department

O. A. C. Review.

Dear Sir—I purpose setting out forty acres to apple orchard. What standard varieties would you advise me to plant? Would you advise using fillers? If so, what varieties would be best? Would you recommend planting in squares or diagonally? Would you also suggest some crops that would be suitable to grow on the land till the trees came into bearing? What makes the best cover crop?

J. B.

Answer.

Dear Sir—In planting out an orchard of that size, it would be well to use a number of varieties, so as to distribute your work over as long a period as possible. The following varieties make a good assortment, and mature in the order named: Duchess, Alexander, Dudley, Grovenstein, Cayuga, Red Streak, Snow, McIntosh Red, Blenheim, Baldwin, Grimm's Golden, Spy, Spitzenburg and Tolman Sweet.

Whether or not it would be wise to use fillers is a question which you must decide for yourself. Some people use them successfully, while others do not. If properly managed, there is a decided advantage in us-

ing fillers. The objection is that most people leave them too long and so spoil their permanent trees. If you can remove them at the proper time, there is no good reason why they should not be used. The best varieties to use for this purpose are: Duchess, Wagner, Wealthy and Alexander.

Regarding the system of planting, we would recommend planting in squares. You get more trees in by using the diagonal system, but the disadvantage in tilling the land and spraying the trees more than offsets the advantage, unless land is scarce. Your permanent trees should be at least forty feet apart.

Intercropping may be practiced with advantage for a few years. The crops used should be such as require cultivation during the early part of the season, and should be harvested in time to sow a cover crop. One of the best crops for this purpose is early potatoes. Strawberries are also used, but where such are used they should be well mulched.

Your cover crop should be sown in the latter part of July. Hairy vetches makes a good crop, but, unfortunately, the seed is expensive. Other good crops are, rye, buckwheat, crimson clover and field peas. This cover crop should not be plowed down till spring.

THE SNOW KING

But the fierce Kabibonokka
Had his dwelling among icebergs,
In the everlasting snowdrifts.
He it was who sent the snowflakes
Sifting, hissing through the forest,
Froze the ponds, the lakes, the rivers,
Drove the loon and sea-gull southward;
Drove the cormorant and curlew
To their nests of sedge and seatang
In the realms of Shawondasee.
—From "Hiawatha."

THE O. A. C. REVIEW

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Editorials

Our Query Department

We are commencing in this number a query department in our paper. In this department will be answered fully and concisely any questions which any subscriber sends in. We are in a unique position in this respect, as we can obtain at first hand the most reliable information that is accessible to farmers. All branches of agriculture are included, and the correctness of the replies will be guaranteed. We heartily invite all subscribers to write us about any problems which have vexed them in the past. If a prompt answer is desired, enclose stamped and addressed envelope. Address Query Editor, O. A. C. Review, Guelph.

The Land Tax

The question of land tax is receiving a great deal of attention at the present time. It applies with equal force to both urban and rural districts. The taxing of improvements has long been a sore point with progressive farmers, and indeed it seems

scarcely reasonable to levy heavier taxes upon a farmer who is investing his profits in new barns, silos and other improvements, while his shiftless or unthrifty neighbor who grazes his land and ekes out a bare living, allows his farm to become an eyesore to the community. Farm improvements show a gain in wealth of the individual farmer, but they also are added wealth to the township and to the nation. The problem is assuming more of a political aspect, and it is out of our province to discuss political questions. But farmers would be wise to express their own views on the subject to their representatives in the Legislature.

The Jarring Elements

Every fellow in the college knows what they are. Some of the English students and students from other lands do not harmonize very well with the Canadian boys, and vice versa. It is a pity that this is so, but the fact remains. The Cosmopolitan Club formerly attempted to bring the students of all the nationalities repre-

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sented at the college together, and combine them in one harmonious whole. But evidently it has become discouraged, for little or no effort is made to attract Canadian students into the club. As a means of consolidating all the various elements at the college it has proved a failure. Is there then no other method which might be adopted that would bring about this highly desirable state?

It seems to us that the erection of a new residence for third and fourth year students, which would accommodate all of these two classes, would be a good step in this direction. There is available space for this building on the campus, just west of the Biology Building, if no better site could be found. Such a residence should be strictly modern in all details, so that the fellows would feel some pride in it. It should be under student government, thus ensuring against roughhouse usage, and should include a common or lounging room. Here the boys could gather for a chat in the evening over current events, literature, music and kindred subjects. We Canadians could learn much from an intimacy with the best type of English public school men we have at the college. As a rule we have rough edges which ought to be rounded off before we leave the college. We get a good grounding in science in our course here, but unless, as rarely happens, we are particularly interested, our knowledge of world politics, of the family life of other nations, of painting, music, and all the fine arts, is limited. On the other hand, many of the outside students are coming to Canada to live, and they would learn much of the details of Canadian life and of politics, economics and new-world literature, which would broaden

their sympathies and make them better citizens. As regards meals, these could be taken either at the college dining-room or at other places, so that the most fastidious diner would be suited.

We think this suggestion deserves some consideration from the authorities. Further details could be given which would bring minor advantages. And then, too, think how much it would mean to be removed from the temptation to which three of our fellows recently succumbed, with such an unhappy conclusion!

Term Exams

In three months we will be grinding over notes and textbooks in preparation for the decisive spring exams. There is usually such a large number of diversions, amusing and otherwise, in the winter term that studies are neglected until the last moment. This should not be. The present examination system in schools has been abused from all quarters. It is a heavy strain on the students for two weeks, and is a serious handicap to a nervous man. Why not have more exams through the term? They really give a better test of a student's ability, and even if they do nothing else they force him to study and thus prepare him for the final grind. Many fellows lose three-quarters of the benefit of the lectures simply because they do not review their work, and they attend lectures and take notes in a state of partial darkness as to the object of the lecturer. Of course it is simply a matter of will-power and self-discipline to get down and "plug" in the middle of the term, but it would help if occasional small exams were set.



COLLEGE LIFE



Philharmonic Concert.

"Say, wasn't it great?" Such said everyone who went to the annual concert of the Philharmonic, which was held in the gymnasium on Friday evening, Nov. 29.

The Choral Club and the College Orchestra were assisted on the program by Mrs. J. H. Hare, soprano, and Mr. Paul Hahn, of Toronto. The orchestra, under the leadership of Mr. H. K. Black, of Guelph, rendered several excellent selections, including the "Eternal Waltz," "Dances from Henry VIII.," "Sizilietta" and "Tiger Lily."

We had for some time wondered at the strange noises issuing from Macdonald Institute, and although questioned the members of the Choral Club would not divulge any secrets. We were told to wait and there being nothing else to do, we did so. After careful training by Mr. Ernest M. Shildrick, of the city, the Club gave five most pleasing numbers, these being "Hail to the Bride," "The House that Jack Built," "All Thro' the Night" (Welsh air), while Mr. Shildrick and the male chorus sang "Hail to the Chief." We were fully satisfied and gave our consent to stand more weeks of agony if the results were to be so pleasing.

Mrs. J. H. Hare, of Whitby, the soloist of the evening, sang "Manning's Song," and "The Years at the Spring." The extent to which the audience appreciated her singing could be well judged by the hearty applause and the beautiful bouquet that was presented to her.

Mr. Paul Hahn took Mr. Blanchford's place on the program, this latter gentleman being unable to fulfil his engagement. The music from his 'cello—not to mention his German accent—took with the audience, and he was obliged to play several encores.

"My Lord in Livery" was the title of a one-act farce that was played by the Dramatic Club during the latter half of the evening.

Lady Sybil Amherley (Miss Verna Smith), in the presence of her friends Laura (Miss Amy McEwan) and Rose (Miss Evelyn Bucke), reads a letter in which she is warned that a certain young man, Lord Thirlmere, is coming to the house disguised as a servant and has wagered that in half an hour he will have her ring in his possession. The ladies, for the novelty of the adventure, decide to dress as maid-servants and thus meet him half way. In the meantime Hopkins (M. T. Smith) has been engaged as the new footman by Spiggott (G. G. Peren), the old family butler, but the girls, imaging him to be the nobleman, are repulsed by his ill-manners. Spiggott declares that he must be a burglar, and when Lord Thirlmere (R. Dougall), at last arrives, the old butler so terrifies the ladies by proving that this is an accomplice, that Robert (V. C. Puleston), the page, is sent immediately for assistance. Her fears overcoming her, Lady Sybil finally gives him all the valuables, but entreats him to spare their lives. This is a surprise to the young lord as he had had no

idea of the position the fears of the young ladies were placing him, but he decides to let them continue in this state of mind for the present. In consenting to dance a minuet with him Lady Sybil regains all her jewels except one ring. Thirlmere hearing that the loss of this was occasioning much discomfiture, returns it, and on asking for pardon, is granted it.

Great commendation is due to all participating in the program, both musical and dramatical, and it must not be forgotten that a good deal of the success of this latter was due to the efforts of the stage manager, Mr. E. W. Hart.

Mr. L. E. Hipple, as our College representative attended the annual dinner of the Literary and Scientific Society of University College, held at Toronto, to which other colleges were invited to send delegates.

Three men from the college attended the Annual Boy's Work Conference, held at Galt, on Nov. 23-24, where upwards of six hundred men and boys from various parts of the Province attended.

The O. A. C. was also largely represented at the Student Volunteer Conference, held at Peterborough, on Dec. 1-2, to which four hundred and twenty-five students from thirty-three colleges in both Ontario and Quebec collected. Missions, both foreign and domestic were discussed by such men as President Falconer of 'Varsity; Mr. J. L. Murray, New York; the Secretary of the movement, Dr. J. A. MacDonald, Toronto, and Dr. Margaret McKellar, India.

The football team, the two cham-

pion basketball teams of the Hall and a few members of the junior faculty of the institute, were given a dinner by Dr. Annie Ross and Miss Watson, after which general games were played.

A few weeks later the lucky rugby team gave another dinner to which each member of the team were to take a lady friend. A few hours of dancing were spent, the only objection being the speed with which the time flew by.

The Wellington Field Naturalists' Club.

This Club was founded in March, 1900, its aim being to promote biological research in Ontario, but more particularly in Wellington County. The organ of the Club, the Ontario Natural Science Bulletin, is an annual devoted to the fauna and flora of Ontario. Regular meetings are held in the Biological Building. These should be of interest to all students of natural science as they are of a general biological character.

The program for this season will be as follows:

Jan. 9—Plant Ecology, Prof. J. W. Crow.

Jan. 23—Fur-Bearing Animals, Mr. L. N. E. Lafontaine.

Feb. 6—Bee-Keeping in Various Lands (Illustrated), Mr. Morley Pettit.

Feb. 20—Progress and Method of Nature Teaching in the Schools, Prof. S. B. McCready.

Mar. 6—Ferns and Their Haunts, Prof. J. E. Howitt.

Mar. 20—(Some botanical subject), Mr. L. J. Moore.

Mr. A. Kelly-Evans will give an evening lecture in January on

"Game Protection," and Mr. W. E. Saunders will, some time in February, give an illustrated talk on "Bird Study."

E. W. C.

Stock Judging Competition.

The following are the results of the students' stock-judging competition at the Winter Fair. The first prize is \$10 and the following nine each decrease by one dollar:

Sheep

1. W. Shields, '16
2. R. B. Hinman '15.
3. M. Kelleher, '14.
4. J. S. Knapp, '14.
5. J. B. Grange, '13.
6. C. F. Neelands, '14.
7. W. Thompson, '15.
8. J. F. Lindsay, '15.
9. J. L. Dougherty, '16.
10. D. McEwen.

Swine.

1. J. E. Bergey, '14.
2. A. E. McLaurin, '14.
3. C. F. Neelands, '14.
4. J. E. McRostie, '14.
5. G. Wilson, '13.
6. J. E. Lattimer, '14.
7. G. C. Duff, '14.
8. T. E. Francis, '15.
9. J. N. Allan, '14.
10. R. H. Abraham, '16.

Horses.

1. P. S. Harding, '13.
2. G. G. Bramhill, '13.
3. W. J. Tawse, '15.
4. G. C. Duff, '14.
5. J. E. McRostie, '14.
6. H. M. McElroy, '13.
7. G. Elliott, '16.
8. P. Stewart, '14.
9. R. Dougall, '13.
10. H. B. Gerown, '13.

Beef.

1. C. A. Webster, '13.
2. A. R. Mitchell, '16.

3. W. G. Nixon, '14.
4. E. F. Neff, '13.
5. C. A. Tregillus, '13.
6. W. J. Tawse, '15.
7. H. Cooke, '13.
8. T. F. Fairles, '15.
9. R. Diaz, '13.
10. H. M. McElroy, '13.

Dairy.

1. J. C. Pope, '14.
2. W. Davison, '13.
3. H. R. Hare, '14.
4. R. B. Hinman, '15.
5. D. R. Irvine, '14.
6. J. W. Lawrence, '15.
7. R. Riach, '15.
8. W. C. Hinman.
9. G. Wilson, '13.
10. D. J. Bennington, '15.

Totals:

- ('13) 4th Year—3,295 points.
 ('14) 3rd Year—3,615 points.
 ('15) 2nd Year—3,257 points.
 ('16) 1st Year—2,994 points.

Year '14 are again champions. They won last year, and if they do so next year, the Day Trophy—a cup donated by Prof. G. E. Day to the year who makes the most number of points in the judging, and to become the property of that class who win it in three successive years—will be theirs.

RESULTS OF ELECTIONS.

Fellows, show more interest in your College elections. Nominate more men, enabling the electors to have a greater choice. On polling day turn out and record your votes.

Literary Society.

President—G. G. Bramhill.
 Treasurer—J. N. Allan.
 Secretary—R. H. Stratford.

O. A. C. Review.

Editor—J. H. Winslow.
 Artist—A. Cory.

Philharmonic Society.

President—J. M. Creelman.
 Vice-President—J. E. McRostie.
 Treasurer—A. E. McLaurin.
 Secretary—P. D. Vahey.
 Orchestra Manager — A. E. McLaurin.
 Dramatic Manager—E. W. Hart.
 Leader of Rooters' Club—A. Burrows.

Orchestra Manager—J. B. Lund
 Choir Manager—P. D. Vahey.

Y. M. C. A.

Honorary President — Mr. L. Caesar, B. A.
 President—W. G. Nixon.
 Vice-President—R. B. Hinman.
 Treasurer—J. W. Lawrence.
 Secretary—E. L. Small.
 Chairman of Mission Study Committee—C. M. Laidlaw.
 Chairman Bible Study Committee—M. H. Winter.
 Chairman Music Committee—P. D. Vahey.
 Librarian—A. M. McDermott.

COLLEGE THEATRE NIGHT.

On the evening of Nov. 19, a torch light procession of the whole student body marched down from College Heights to tick of drum, and advanced on Guelph, with a few starched collars among the fourth year students, and a white chrysanthemum adorning each third year man, to relieve any anxiety among the citizens of Guelph that it might be the advance guard of the German army.

Before the curtain rose the year mascots paraded before the foot-lights. The seniors had an owl and an alligator in an express wagon. These allegorical figures probably had some reference to the omnivorous appetites acquired by four years pat-

ronage of the residence dining hall, or maybe to their habits of industry, both animals being more or less torpid during bright, sunny days, and getting into mischief after dark.

The juniors had a take-off on the Botanical Department. A big white gander in a gaily decorated wheelbarrow with a portion of a rock quarry in tow, showed "Howitt was done Wright in drawing Stone."

The Sophomores put on an immense rooster of a breed not on the Winter Fair prize lists, which with lusty crows announced that '15 was:

"Cock of them all
 Boss o' the Hall."

and his spurs have still several years to grow.

Four Freshmen escorted a dear, little dark-eyed damsel, which they claimed for all their own.

Appropriate and tastefully arranged bouquets of cabbage and beet foliage, with swede turnips as thirst quenchers travelled over the cable to the foot lights, for the College fellows who sang or clog danced during intermission.

Some students and friends were discovered in the pit and were nearly smothered by confetti from the "bi-plane." One old gentleman immediately beneath the balcony circle was heard congratulating himself on his location, as he thought, from the way the confetti tickled his top, that it would make his hair grow.

The students kept good order during the performance, and Miss Lloyd rewarded their appreciative attention with many extra songs, the boys accepting joyfully her invitation to lift several of the choruses. Many floral tributes shot down the wire to the stage for Miss Lloyd, and the ladies of the cast, and, no doubt, the grape

juice that found its way over the same route was quite acceptable to the gentlemen.

S. G. F.

THE CONVERSAT.

The Conversazione this year is to be held on the evening of January 31st. The programme is to be varied slightly from other years. Commencing at nine o'clock, there will be twelve proms., which will be over at twelve. The orchestra, which up to this time will be stationed in the well, as usual, will then break up, part going to the dining room, the floor of which will be put in excellent shape for dancing, and the remainder to the gymnasium, and dancing therefore will go on in both places. In this way it is hoped that the most unpleasant

crowding, which has formerly been noticed in the gym, will not occur this year.

Dancing will continue for two hours, comprising ten numbers in all, which will be the usual alternating two-step and waltz.

A musical programme will be rendered during the course of the evening, the artists including Miss Carey of Hamilton, Mr. Russel G. McLean of the Conservatory of Music, Toronto, and the London Harpers. Refreshments will be served on the third floor. Cars will be provided at late hours for the benefit of the guests.

The preparations are in charge of the Junior Year, assisted by a committee from Macdonald Hall, and invitations may be secured from these sources.



"LO! THE POOR INDIAN!"

On the trail in Northern B. C.

—Photo by E. W. White, '12.



ATHLETICS



SANCTUM CHATS.

The success of the football team during the past season has been such as to make the wise ones sit up and take notice. It aptly illustrates the very thing that this journal has been harping on all year—consistent training and team work.

Now that the football team has erected a precedent, let other teams follow. Individual stars and grand stand play won't win games, neither will making Hiram Walker and Sleeman's declare extra dividends. We have had teams at this College within memory of the writer, which were composed of brilliant individual players, but those same teams have time after time gone down before teams composed of players of only fair ability. Why? Because the other teams played as a team, and because they could go the route at a fast pace. Bear this in mind, boys, its worth remembering; and now get out and try and catch a place on one of the College teams.

There seems to be a growing tendency for a baseball team, when it gets trimmed, to blame the umpires for the defeat. This applies more particularly to baseball than to any other game, for in this sport the arbitrator is more open to criticism.

On behalf of these men let it be suggested to the College body that they are only human. They will make mistakes, but surely there is no one so narrow-minded as to suggest that an umpire will deliberately favor one particular team. They are put there on their honor, and they conscientiously do their best.

It might also be intimated, if a team does not agree with a decision of the umpire's, that it is not necessary for the whole team and all its supporters tell him so in order to have him realize the fact that he is wrong, in their opinion. It is the place of a captain and of no one else on the team, to question a decision, and that task should be left to him.

In the winter term it is the object of the baseball management to place the games completely in charge of the umpires. It is to be hoped that the boys will give these men their best support, and make their task, at any time a difficult one, easier.

INDOOR BASEBALL.

The fall practice series produced some exciting games. In the first game the Seniors defeated the Sophomores, and following on this the Juniors trimmed the Freshmen. The final game between the Juniors and Seniors was very close, the Juniors finally coming in on the long end of a 15-13 score. In a game for the cellar championship the Freshmen asserted their superiority over the Sophomores. The final standing was as follows:

	Won	Lost
Juniors	2	0
Seniors	1	1
Freshmen	1	1
Sophomores	0	2

Some good material was spotted during these games, and it is the hope of the management to turn out a winning team this winter. Correspondence is being carried on with other colleges with a view to arrang-

ing games. In addition to these games the inter-year contests promise to be very interesting.

FOOTBALL.

The football season is over, and while we did not win the Canadian championship, we did the next best thing—we lost the final game. However, the boys won the Junior Intercollegiate championship of Canada, and therefore brought to the University of Toronto her only football honor of the season.

The game for the Intercollegiate championship against St. Lamberts, played here, was a regular procession.

The easterners, while proving themselves a bunch of good sports, could not commence to play the game on a par with that put up by our boys. The final score was 50-2.

The following Saturday, on a field rendered treacherous by a recent fall of snow, the Junior Alerts of Hamilton won the Canadian championship. On the day's play the better team won. But with a dry field the O. A. C. boys would have very nearly copped the honors. Under the prevailing conditions speed was an unknown quantity, and here is where our boys have shone all season. The final score was 14-7.



Fencing

making of a successful Italian fencer; a woman may rise to the top in the French school." Scientific fencing dates from the sixteenth century. From Henry III. down to Louis XVI. the tradition of the French school was kept, and the return of the Bourbons after the fall of Napoleon was a signal for a great revival of the art. The banner of the art was held high in the year 1825 by Bertrand, Gean Louis, Boersiere, Saint George, Lafaugere and Charlemagne. In the modern time we have Merigriac, Prevost, Senac, Tacoby and many others.

Two schools of fencing are prominent, the French and the Italian. Both are founded on the old sword play of Spain. The Italian resembles more the original Spanish fencing in which it requires vigor and brute strength. The French style is modified, and it requires all the agility, grace and sensitiveness of touch a man or woman is capable of manifesting. An authority, in comparing both styles, said: "A Hercules is required in the

"Fencing is the knightliest of sports," said Breck. "You are here in actual touch with your opponent; the delicate rod of steel in your grasp is a lightning conductor that instantaneously flashes through your brain the knowledge of what attack your adversary is meditating. Every faculty of your brain, every muscle of your body, every nerve of eye and hand, all are on the alert; and you live more

intensely, more vividly, in an assault of a quarter of an hour than most people do in a week."

The practice of the foil is considered as applied to the most laudable of purposes, namely, the enjoyment of salutary recreation, and the acquisition of a graceful and well-trained deportment. The beneficial effects of moderate fencing to persons of weak constitution, or of studious and seclusive habits, have been widely recognized. To the public speaker, the practice of the fencing room has been found to impart an ease and freedom of gesture attainable by no other exercise. For, while the use of the foil and the broadsword diffuses ease, elegance and grace all over the body, and imparts to the look and gesture an appearance of intellectual vigor, it also teaches invaluable lessons of patience and self command, and contributes to discipline the temper. **Women and Fencing.**

The women of Canada could be more graceful, if instead of dedicating an hour before the mirror every morning, they would practice fencing for half an hour. The other half hour could be spent before the mirror. Fencing reduces surplus adipose tissue, making the figure trim and comely, rounds the muscles, develops the bust, and improves the complexion by stimulating the circulation of the blood.

Fencing is as conducive to lightness of foot and gracefulness as dancing. In this country we have women remarkably expert in execution of the various thrusts, parries and feints. Of Miss Coupie Lowther, champion of the English women's fencing world, Senac says: "She is more than a match for many a man who considers himself a capable performer."

R. DIAZ.

HOCKEY.

Our hockey team has withdrawn from the O. H. A., and will play in the Intermediate Intercollegiate series. This change was considered advisable when it was found we were in a six-club group, double schedule, and had to declare winners before February 1st. It meant games without practice, and with the present poor train connections, too much time lost.

In the Intercollegiate we are up against Varsity II., Trinity and McMaster. This league does not start till February, so the boys will have ample time to get in condition. Games may possibly also be arranged with St. Jerome's and Woodstock College.

* * *

COLLEGE EMBLEMS.

We desire to call the attention of our readers to the recent change in the number and design of College Emblems.

The regular "O. A. C.," which was previously of blue, will henceforth have a red border. This will make it most distinguishable on the present color of the College sweater coat and jersey.

A new emblem is being given for members of teams winning the championship of their district. This emblem is very handsome, the prevailing colors being red, silver and blue, the College crest being worked in these colors. A man, by winning one of these, is also entitled to his "O. A. C."

For men who break College records a new shield-shaped emblem is being given. This consists of a red "O. A. C." on a white background. As in the case of the previous emblem, a man winning one also gets his "O. A. C."

BASKETBALL.

The Seniors defeated the Freshmen 36-18 in the only basketball game played in the fall term. Although the score looks as though it were a loosely played game, it was far from that. The Seniors started out with a rush, and at half time had the score 20-2 in their favor. The second half was a tie, each team making 16 points.

The first year team put up a splen-

did game after they recovered from their attack of stage fright, and with a little more practice and confidence, will no doubt play a much better game.

Judging from the present second year's showing last year, and the good exhibition put up by the Freshmen in their only game, it looks as if there would be some close games in the winter series.

The Art of Self Defence

"Then foot and eye and point opposed
In dubious strife they darkly closed."

The noble art of boxing, practiced as far back as the twenty-third Olympian games, has truly become a British one, and while looked on askance by some when impartially compared with other forms of sport, the foundation for this idea will be found to be the sands of prejudice.

Boxing is a form of sport which offers more advantages than most others and generally speaking, carries with it fewer compensating disadvantages. The list of injuries, fatal and maiming, received through boxing, are very small. A little spilt gore is decidedly beneficial to the full-blooded youth, and even a knockout is an insignificant thing. More severe injuries than these are seldom heard of.

It is a true "recreation," and offers a training which, without unduly straining any organ, muscle or set of muscles, lends a strength and tone to all which will enable a man all through life to better stand the wear and tear of ordinary and extraordinary occasions. It renders the muscles supple and agile with resultant ease and grace of motion. The eye becomes

quicken, the brain is taught to receive and impart messages with greater speed, in fact, the whole nervous system is improved. Moreover, not only is physical self-control and confidence gained, but to become proficient, the boxer must at all times restrain his angry passions, and the windy boy is sure to run upon the rocks of retribution sooner or later.

Underlying the present style of boxing is quick and neat footwork, for in the most economic use of strength many blows must be avoided rather than blocked or parried, and it is most essential to be able to "follow up" quickly. Equilibrium should ever be retained and the knees should be kept slightly bent, that a spring may ever be in waiting.

The orthodox position of hands and feet is the one which has been found in theory and practice to offer the greatest advantage, but individuality must be considered, and like most other boxing practices, this may be altered to suit the participant, but generally speaking, it should be adhered to as closely as possible.

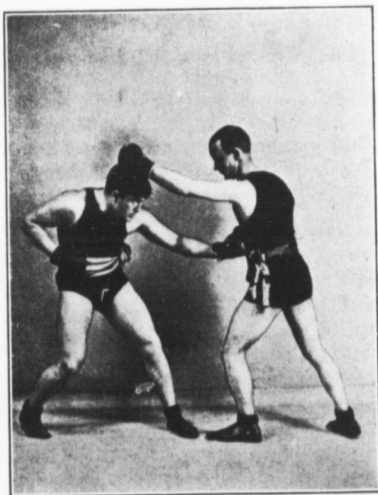
The eyes should be kept closely glued to those of your opponent, except for purposes of deception, for

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his eyes are most expressive of his next move, and his whole anatomy may be observed. Conversely your own must give him as little information as possible.

While boxing is called the art of self-defence, and ducks, side-steps, blocks and parries must receive careful study, the "defensiveness of aggressiveness," if it may be so expressed, must not be lost sight of, and

and in the aggregate more annoying to the "recipient," and oftentimes opens or covers the way for the slower and heavier swing. Hooks are more deceptive than leads and generally more effective. Swings are essentially the heavy blows and must be handled with care, for in the event of them not landing, the would-be giver loses his balance and places himself in a dangerous position.



Ducking left head lead and sending in left to body with right to follow.

methods of attack should also be thoroughly studied.

Care must be taken with all blows, that they land squarely, otherwise the bones of the thumbs or wrists are endangered and blows are not so effective. Flips and slaps are showy by way of sound, but ineffective.

A straight left lead or jab is the simplest and quickest blow, and while not so damaging as a hook or swing, is comparatively safe to the "donor,"

Feints are a form of deceit where-with to allure an opponent into a tangled web, and make an opening for a blow or an analysis of his style and tactics. This innocent and very necessary form of deception also works the other way, and by leaving a carefully watched opening, a man may be led on and duly punished for his gullibility.

Style may be defined no better than by using a simile and comparing it

with a horse's action. It is the reflection of the character and temperament of the boxer, and is the "symmetrical" practice of those things which, put together, go to make up the science of boxing. Good style is the outcome of a thorough knowledge and balanced practice of the science, and comes by royal road to no one.

other man's style and tactics quickly and accurately must be cultivated by the ambitious boxer. Generally speaking, defensive tactics are the best and an aggressive opponent may frequently be led to waste his strength, expose his weak points and virtually beat himself.

With regard to practice—go light,



A Straight Left to the Jaw while a man is pulling his left back for a left hook or swing (showing the superior speed of a straight blow).

Brain work more commonly known as generalship and tactics, must be varied with different opponents, for the tactics successful with one may be useless with another. A long distance boxer could not be reached by tactics which are successful with an in-fighter. The ability to analyze an-

Boxing will be infinitely more pleasurable, ease and speed of motion are better acquired, and on the approach of a competition or on necessary occasions strength may be added. Learn to take your medicine like a man and above all, don't get a swelled head.

—R. L. Ramsay.



THE BRITISH UNIVERSITY OF CYPRUS



ALUMNI



THE CLASS ELEVEN DINNER.

"There was a sound of devilry by night,
And all of nineteen-'leven had gathered there."

The graduates and associates of Class '11 held a dinner in the Royal Canadian Cafe on Friday, December 13th, to talk over old times and plan for new ones. When the class held its graduation banquet it was decided to hold a grand reunion in 1915, to which everyone was to bring his estimable life-partner, if he had succeeded in acquiring one. When someone suggested a few months ago that an intermediate affair take place in Winter Fair week the suggestion was jumped at, and the success which attended the feast proved the merit of the plan.

A total of thirty-nine old 1911 boys gathered round the table when the bell was rung by "Jack" Baker, as assistant dean, and as many of them had not met for years there was much to talk about and laugh over. Wade Toole presided over the gathering, and called upon "Parson" Light to ask the blessing, which duty he performed with appropriate dignity and solemnity. After blessing was pronounced the "hash" was set upon ravenously, as in the old days of residence life, and it soon disappeared.

The Menu:

Oranges	Grape Fruits
	Oysters
Sliced Chicken	
	Mashed Potatoes
	Pudding a la Fruit

Celery	Fancy Cakes
Cafe Noir	Ice Cream
Fruit	Cigars.

Between courses there were numerous songs and speeches given by the supervisor and by "Fertilizer" Innes, causing the former to choke on an oyster while the latter expounded on the virtues of his best potato grower. After everything edible had been removed from the field of action, chairs were pushed back and the weeds were lighted.

This matter disposed of, short impromptu speeches were delivered by everyone, many and varied experiences coming to light. Just about this time George Callister, an associate, appeared on the scene from nowhere in particular. He is now travelling agent in the eastern states for the German Kali works, with headquarters at Baltimore. He was received with enthusiasm, and had some interesting yarns to spin.

Auld Lang Syne, with hands joined around the table, was the closing ceremony. The following is a list of the class present:

Wade Toole, London.
I. B. Whale, London.
H. A. Dorrance, Orangeville.
C. L. S. Palmer, Markdale.
C. W. Buchanan, Dutton.
R. Schuyler, Paris
J. C. Steckley, Newmarket.
F. C. McRae, Walkerton.
P. C. Dempsey, Trenton.
R. J. R. Shorthill, Belleville.
P. E. Light, Toronto.
P. A. Fisher, Burlington.
F. N. Marcellus, O. A. C.
J. Spry, O. A. C.

S. H. Gandier, O. A. C.
 F. Palmer, O. A. C.
 A. W. Baker, O. A. C.
 A. J. Galbraith, O. A. C.
 H. L. Keegan, O. A. C.
 G. S. Peart, Burlington.
 S. H. Culp, Vineland.
 W. H. Smith.
 F. Shephard, Berlin.
 F. E. Birdsall, Birdsall.
 T. O. Clark, Toronto.
 P. French, Victoria, B. C.
 Harley, Harley, Ont.
 Martindale, Caledonia.
 Mr. Coke.
 R. Boddy, O. A. C.
 Howell, Jerseyville.
 C. Hoffman, Plattsville.
 R. W. Innes, Toronto.
 H. Webster, Science Hill.
 Duncan, Don.
 S. Taylor, Toronto.
 G. C. Taylor, Toronto.
 R. Austin, Welland.
 Geo. Callister, Baltimore, Md.

L. B. H.

Toastmaster Toole called upon Charlie Palmer to propose the toast to the King. He could not have called upon a more cosmopolitan man, for Charlie was born in India, raised in Australia, received his primary education in England, and now lives in the land of his adoption. The toast was drunk in pure (save for the presence of some CaCO_3) H_2O , and the National Anthem was sung in response.

Harold Dorrance proposed the toast to our Alma Mater, who dwelt upon past incidents of college life, such as the music of "Gal" and the effect which such associations had upon one's after life; Jack Baker responding in a very humorous speech, interrupted frequently by suggestions from Parson Light and Walter Smith.

After the toasts had been disposed of the President brought up some matters pertaining to the class. A hearty vote of thanks was tendered to "Cap" Gandier for his faithful and energetic work on the executive, in gathering the class and arranging the details for the evening, to which he replied in his usual bright and cheery manner.

Much discussion followed as to the nature of a gift for the first one of the class to become enmeshed in the net of matrimony, and after amendments, motions, suggestions, amendments to amendments had been poured in, it was finally decided that this fortunate individual be presented with a neat little four-wheeled rubber-tired vehicle.

Next in order came the discussion on the formation of an O. A. C. Alumni Association, which is now badly needed. C. L. S. Palmer suggested the publication of a booklet every two years containing the names of graduates and associates. Bob Innes outlined the plan at Macdonald College, where they have a circulating letter containing names and addresses and any incidents which may be of interest to their fellow classmates. A committee of five was appointed to look into the question and confer with other years concerning the formation of this Association; the committee to be Messrs. Spry, Gandier, Galbraith, Jack Baker and Marcellus.

* * *

The first week in January is the best time in the whole year to renew. If you send us your renewal at that time you confer a distinct favor upon the Managing Department of the paper. Last year, at our request, a large percentage of our subscribers

obliged us in this way. Will you help to make this percentage still larger this season?

* * *

In November Dr. Creelman attended the annual meeting of the American Association of Farmers' Institute Workers and the annual meeting of American Agricultural Colleges and Experiment Stations at Atlanta, Georgia. While there he met a number of O. A. C. graduates who hold prominent positions in the United States; among them: F. B. Linfield, Director of Experiment Station, Montana; R. S. Shaw, Dean of the Department of Agriculture, Agricultural College, Lansing, Mich.; A. N. Soule, President Agricultural College, Athens, Georgia; W. J. Kennedy, Director of Extension Work, Agricultural College, Ames, Iowa; W. N. Hutt, Professor of Horticulture, Raleigh, North Carolina; G. I. Christie, Director of Extension Work, Lafayette, Indiana, and H. A. Morgan, Director of Experiment Station and Dean of Agriculture, Knoxville, Tenn.

Prof. C. A. Zavitz attended the meeting of Experiment Station Directors at the same time.

* * *

"Answers," published in Old London, has an interesting account of an interview with "Bill" Heurtley (1911), on his emigrant training farm, at Woking, Surrey. The interviewer was met at the station by a Canadian buggy and "it was noon when we reached the farm, and a dozen or so young men, dressed in rough flannel shirts, wearing colored handkerchiefs around their throats, wideawake hats, breeches, and big leather belts and rough boots had just knocked off work. They looked typical Canadian farm hands, but

when they spoke it was in the cultured tones associated with the public schools and universities. They were gentlemen who had chosen the life of the agricultural laborer, and, as Mr. Heurtley expressed it, "they were picking up the hundred and one things to save them from going out to Canada, Australia or New Zealand quite green."

The "Answers" man inspected the farm in the role of a new student. He vainly endeavored to hitch up the buggy, but succeeded in almost upsetting it when he commenced to drive. He successfully, after one runaway, piloted a wagon and team across a field, but his efforts in the direction of plowing and of extracting the lacteal fluid from a patient bovine were absolutely fruitless. In conclusion he remarked "It's all very well for the Editor to talk, but I'm not going to be emigrated for anyone."

* * *

The following changes have been noticed recently in the staff of District Representatives:

W. W. Emerson, '12, left Perth, and is now with the Farmers' Advocate, Winnipeg.

F. C. Beaupre, '12, is now assistant at Paris, Brant County.

R. Green, '12, is now assistant at Galt, Waterloo, Ont.

G. P. McRostie, '12, representative at Chatham, Kent County.

A. McMillan, '12, is assistant at Port Hope, Durham County.

C. L. S. Palmer, '12, is assistant in Grey County.

C. W. Buchanan, '11, is representative in Elgin County (Dutton) and is being assisted by J. T. Johnson, '12.

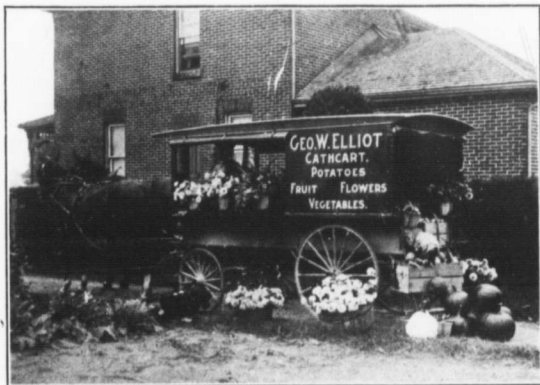
F. C. McRae is assistant in Bruce County.

G. W. Elliot entered college in 1900. After taking the Associate Course he started farming at his present home, Cedar Lawn Farm, Cathcart, Ont., where he is at present specializing along a number of different lines.

His dairy herd of Holstein grades has been brought to a high state of efficiency, by the weighing of each

growing of plants, such as tomatoes and cabbage, and is also used for growing flowering plants, of which Dahlias and Gladioli are the chief varieties.

Considerable attention is paid to fruit growing, three apple orchards having been rented for a term of five years. These orchards are sprayed



cow's milk, enabling the accurate location and consequent dismissal of the boarders from the herd.

The accompanying illustration shows some of the products of the farm. Potatoes are a specialty. Other vegetables and small fruits are grown somewhat extensively. A greenhouse built two years ago, facilitates the

with a spraying outfit that is run by a two and a half horse-power gasoline engine. This does efficient work.

In 1906 "George" succumbed to the inevitable and his home is now brightened by a daughter and son, who are now receiving their early training preparatory to a course at Macdonald Hall and O. A. College.





MACDONALD



The New Term.

THE day returns, and brings the pretty round of irritating concerns and duties. Help us to play the man! Help us to perform them with laughter and kind faces. Let cheerfulness abound with industry."

Well may we echo the brave words of the beloved R. L. S. as we contemplate the prospect of another term's work. Back we come from the happiness of Christmas at home for a few more weeks of the "process of education" before the hydra-headed spectre of examinations again looms across our path. Was last term short? This is shorter, and we speak who know. So it behooves us to make the most of every minute of our time, welcoming and helping the new girls and doing what we can to smooth the way for our older classmates.

The *Conversazione* is close at hand, and all the committees hard at work. But a good committee is of little use unless backed up by the enthusiastic support of the whole school. It is the one occasion when we show the outside world what our skill and training can do in the running of a big entertainment. Let us, then, do our allotted parts thoroughly and well, for "perfect parts make perfect whole." Each of us should be able to say, "No one else could have achieved more than I did with my materials."

Last, but by no means least, comes the subject of our more serious work at the Institute. Those of us who were here last year can tell how work

piles up in the spring term so that it is impossible to plan any extra study then. If one feels that there is any deficiency in one's class standing, the Winter term is the time to make it up, for it will be impossible later. It would do most of us no harm to undertake a little extra reading while we have Massey Library and the Institute Library at our disposal. We can never regret taking full advantage of our opportunities while here, so get busy, girls.

The Short Course Party

The date, Thursday, December the fifth, perilously near examinations, nevertheless those of us who were studious accepted with pleasure the invitation of those of us who were frivolous, to be present at a reception from five till seven. All day long the gymnasium doors were guarded jealously, and all the hall wondered. Promptly at five the "student body" in its best bib and tucker arrived and the festivities began.

The receiving hostesses were Miss Ethel Barnard and Miss Verna Smith, the Presidents of Homemaker C and Short Course Classes respectively, and very charming hostesses they were. The gymnasium was quite transformed, being decorated as a drawing-room with palms, rugs tables and chairs. A long table near the platform held the tea things, a beautiful basket of scarlet carnations at the centre, with streamers of scarlet being the only decoration. Music was supplied by a three-piece orchestra from down town.

Mrs. Fuller and Mrs. Creelman

poured tea and coffee, while a busy corps of waitresses passed "eats," which were thoroughly appreciated by their fellow (or should one say sister?) Macites. The staff was well represented and seemed to enjoy this unique entertainment as well as the girls themselves. Shortly after six the music grew really too tantalizing, and when a waitress was seen waltzing with a cup of coffee the rugs and chairs were soon placed aside, and the party ended in true Macdonald style.

Our Berlin Trip.

On Thursday, Nov. 7th, the Macdonald Senior Chemistry Class made its annual trip to Berlin, under the direction of Professor Harcourt. The chief object in taking this trip was to see something of the manufacture of sugar, but we were also shown through the button and rubber factories.

At the button factory we saw the whole process, from the cutting up of the ivory nuts and clam shells, from which most of our buttons are made, to the finished product, sewn on cards and packed in boxes.

To go through a sugar factory is a day's work in itself. The plant of the Dominion Sugar Company is large, well equipped and particularly interesting. We shall not attempt to describe the manufacture of sugar as we saw it, but we recommend any who have the opportunity of inspecting such a plant to do so, in spite of the discomforts of terrific heat and unpleasant odors.

There are two rubber factories in Berlin. We visited the Merchants' Rubber Company. Here we were treated most courteously. The party was divided into groups of seven, each group being given a guide who

explained the whole process, from the treatment of the raw rubber to the drying of the finished shoes. The quickness and perfection of the work of the cutters and shoemakers was remarkable. In their hands these rather despised articles "rubbers" commanded great respect, and though we may still complain about the high cost of rubbers, we can better understand it.

The Senior Chemistry Class was a very weary and worn out aggregation when it arrived home at Macdonald Hall, but it had spent a very pleasant and profitable day.

Basketball.

The chief activity which has held sway in Macdonald Hall this autumn has been basketball. It was taken up early in the term by teams from the different classes, and the interest was first aroused by a match played between the Homemakers and Seniors. The memory of this game the Seniors fondly cherish as it was their one and only victory, the thought of which alone upheld them when subsequent and overwhelming defeat fell to their share. After this match practises went on smoothly and uneventfully till Thanksgiving, when Miss Watson announced that she would give a party to the two champion teams. Then indeed the girls did work, for each one wished most ardently to share both in the glory and the party. Matches were played off quickly and for a while it was thought that the Associates and Seniors would be the luck teams till one day the Junior Normals said they would like to enter the contest. They came in late and had to begin at the bottom and work up; nobody thought there was much chance for them until their first match with the short

course, when, in spite of the splendid guarding, the Normal forwards got in ball after ball. When the next day, flushed with their victory, they beat the Homemakers, we were not surprised, as we already knew the calibre of their captain, whose straight, sure throws did much to win the game.

The next match to come off was between these same Junior Normals and the Associates, who had already won name and renown within our

could the poor Seniors hope for but defeat at the hands of this team which had already acquitted itself so nobly. We will pass over the score lest some Senior reading this might blush and tell only that when the Junior Normals realized they were truly champions, Macdonald Hall was hardly big enough to contain them. The next day the last match was played off between the Seniors and Associates, with the re-



THE JUNIOR NORMAL BASKETBALL TEAM, WINNERS OF THE FALL TERM SCHEDULE.

walls. None could tell just what the outcome of this game would be, as both the teams were splendidly matched, but we all felt that it would be the match of the season, and none were disappointed. The gym rang with wild shouts of applause as score after score was made, and it was only in the last second almost, when the whistle was blown, that the Normals threw their last ball and won the great game. Then only the Seniors stood between them and the championship, and what

sult that the Associates had second place.

Thus it was that on Thursday night, November 21st, the champion Junior Normals and their worthy rivals, the Associates, were entertained in most royal style, along with the champion rugby team and the resident teachers of Macdonald Institute at Miss Watson's and Dr. Ross' supper party. I am sure that all will agree that it was a most fitting celebration of the victory, and each member of the teams felt re-

warded for the noon hours spent in practice.

Just at present we are resting on our laurels and are thinking of tak-

ing up field hockey, but next term we hope to feel strong enough to challenge the world and have some interesting matches.

R. G. T.

Much Ado About Nothing

Crash!

"Oh, dear, are you hurt?"

A moan.

"What is it?"

"Oh! I've ripped my hair-net in-
to ribbons!"

By Their Speech Ye Shall Know Them."

The following are some typical remarks heard in a class now in attendance at Macdonald. The curious who wish to find out the perpetrators may do so at their own risk:

"Heavenly day, woman! What is it?"

"Ding bust it! My pen leaks."

"Well, isn't that the dizzy limit?"

"Just a trifle."

"I call that simply punk!"

"Oh, heavy! Hit it kid!"

"Food Values by the Pound.

My friends, to what the doctor says,
Attention if you please,
And learn what food most nourishes,
And those of less degrees,

The very best of meals (thought it
Would seem to need a foil),
Would be a liquid one—to wit,
A pound of olive oil.

And after that, to soothe the lips,
Perhaps to make them sputter,
The meal all others to eclipse
Would be a pound of butter.

Almonds should form your next re-
past;

Then chocolate, then cheese.

Although it makes you look aghast,
You'd gain much strength from
these

Your sixth best food is sugar, let
Your seventh be of cake—

A pound of pound-cake, don't forget,
Or some such simple make.

The calories from corn and rice

Are equal; and roast beef
Comes number nine, if fat and nice,
Though many think it chief.

Then dates and figs stand on a par;

Both just above ice-cream;
Then bread, then luscious salmon are
Successive in the scheme.

The fourteenth in this list of food

Is beef, described as "round"—
That is, when stewed, pied, boiled,
ragout'd,
And reckoned by the pound.

Next poultry figures on the list—

First in the form of eggs—
And then (O, happy table-tryst!)
The form with "drumstick" legs.

Below the fowl, green peas come in
(No mention of the bean);

And ending where we all begin,
Is milk—number eighteen.

—Youth's Companion.

Agriculture in the Schools

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

In the June number of the Review a letter from Miss Barker, dated December 14th, 1911, was published. This letter received during the summer shows how plans for giving instruction in the Indian Mission School progresses. It will be remembered that Miss Barker attended the Normal Teachers' Class in Agriculture in the spring of 1911, and that her fellow students voluntarily subscribed monetary support of her work.

MOOSE Fort, via Cochrane, Ontario, May 23, 1912.

My Dear O. A. C. Friends:

I received an acknowledgment from the Royal Trust Company of your very kind gift of \$265.00, which was paid in by your secretary, Miss Ada Neelands..

You will no doubt be very glad to hear that we are able to send soups and other luxuries to a number of our sick Indians, and also meat to some poor ones who were unable to buy any and yet were in great need of it.

It was extremely nice to feel that we could assist them through the kindness of my fellow teachers, of whom many have written very helpful and encouraging letters, for which I am also very thankful.

We were also able to give the children a Christmas tree here, procuring some things from the Hudson Bay Company, as the things sent to me have gone to Albany, and I will not be able to get them till the summer, which will soon be here now. The children enjoyed themselves very much indeed, and, as there were several mouth organs, we had music for a good time afterwards. It does one good to see the little ones enjoying themselves, as I am sure every teacher realizes.

I am sending for a knitting machine and wool, and hope that next winter I will be able to teach the girls and widows to use it, and so help them to earn a little when hunting is slack or they are unable to go into the bush. I trust and pray that it may prove beneficial to the Indians wherever I may be stationed.

The item of great interest just now has been the breaking up of the ice on the river. It commenced on the 8th of May, and on the 9th we had a holiday, and the girls did needle work on the bank while watching the ice go out. It was a very interesting sight. The water rose nearly to the top of the bank, which is ten feet high, and, as it rose, it brought large pieces of ice over where the bank was not so high.

On the following day, the river on the other (north) side of the island cleared out and the out ice started floating the other way, going out in massive sheets, turning and smashing pieces as it got up against those not so strong, and leaving others on the bank. On the 10th the river was full of broken ice, and it was a cold day, but in the evening it got warmer and the ice began to move again. On the 11th a party of eighteen surveyors and their men arrived, bringing us unexpected news from the line.

These hope to be around the bay for a year, and I suppose will settle by that time whether it will be worth the expense of bringing us a railway.

They came down just as the ice was blocked opposite our house, and they had not been on the bank half an hour when it began to move, and soon they saw the river they had travelled down full of ice travelling along at a good speed. It gave them a good idea of what the river was like here at the break up; only it is rarely twice the same, and no one can tell what kind of a break up it is going to be.

There is another party of surveyors expected soon, so we will have more chances for letters this year than formerly; and we have heard that someone is even going to try and fly down here. If that is so, we will have great excitement. It still freezes very hard at night, and so we have not been able to start our gardens this year, whereas last year by this time the seeds were all sown.

I have transplanted 150 cabbages and 50 cauliflowers. My 100 tomatoes are ready for transplanting and are fine, healthy looking plants, and the celery is coming on well; but the lettuce does not seem to thrive indoors, nor do the onions; they are not worth the trouble. I sowed my seed about the middle of April in boxes.

I teach the children in the school and they take a very great interest. They have sown seeds and transplanted cabbages and cauliflowers, and, on being told, brought tins with soil so that they might have plants of their own kept in the school. It aroused great interest, and all the children transplanted their own cauliflower and made their own labels. I felt quite pleased to see them take such an interest. They write short accounts of their work, and so learn writing and spelling at the same time.

The Geraniums and Sweet Williams they transplanted in the autumn have grown very well indeed, and the children are very interested and pleased to see them looking so well. The currants and raspberries that Mr. Crow so kindly sent are beginning to sprout, but the strawberries have not shown any sign of life yet. The children had no idea what they were and seemed very interested, often going to the box to look at them.

I am sure that these Indian children take as much interest in the growing of plants as those outside, and perhaps more, as they do not know much about the growth of plants, except potatoes. I feel sure that if we had a little help we could make this a fine agricultural school and give instruction that would be useful to the children in their after life. Last quarter I had forty-one children attending and an average of thirty. Your two little boys attended regularly and so does the little "waif" I brought with me from Toronto, and the three have kept very well all winter.

Our chickens have commenced to lay, so we feel rewarded for our winter's work. We were unfortunate and lost a young cockeral but fortunately had a second. We hope to set some eggs, but are wondering whether the first year fowls set, and only hope they will. We would be very glad of the O. A. C. book on poultry. I tried to get it, but it was out of print when I applied. I should also be very grateful for any informa-

tion any one can give on setting hens. How fresh should the eggs be? Is it necessary that they all be of one size? Should they be kept in a warm or cool place before they are put under the hen?

I received letters from Misses Margaret Wilson, May Brown, Bertha Shields, A. McGirr, Mabel Kinnear, Maud Avery, Estelle Lett, and have answered them, so that if any others have written, you will know I have not received them.

Thanking you all very much, and hoping this will interest you, I may conclude by saying that I shall be pleased to answer all questions.

With much love to you all.

Yours in His service.

LUCY I. BARKER.



S N O W

Down out of Heaven,
Frost-kissed
And wind-driven,
Flake upon flake,
Over forest and lake,
Cometh the snow.

Folding the forest,
Folding the farms,
In a mantle of white;
And the river's great arms,
Kissed by the chill night
From clamor to rest,
Lie all white and shrouded
Upon the world's breast.

Falling so slowly
Down from above,
So white, hushed and holy,
Folding the city
Like the great pity

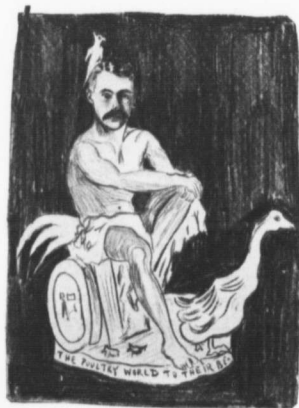
Of God in His love;
Sent down out of heaven
On its sorrow and crime,
Blotting them, folding them
Under its rime.

Fluttering, rustling,
Soft as a breath,
The whisper of leaves,
The low pinions of death,
Or the voice of the dawning,
When day has its birth,
Is the music of silence
It makes to the earth.

Thus down out of heaven,
Frost-kissed
And wind-driven,
Flake upon flake,
Over forest and lake,
Cometh the snow.

—Wilfred Campbell.

LOCALS



SUGGESTIONS FOR CAMPUS DECORATIONS—No 1
(Second prize cartoons)

Knapp, (taking his first class at Y. M. C. A.)—"Yes, fellows, I am trying to follow the divine injunction to cast out the sick, heal the dead, and raise the devil!"

Mr. Stone (to Hirst in Botany Lab.)—"That material looks crushed. It's abnormal."

Jerry—"So am I."

Hales (suddenly finding a spider on his note-book while Mr. Caesar was near by)—"Great Caesar's Ghost! What's this?"

Mr. Caesar—"I beg your pardon, Mr. Hales?"

Mr. Fulmer (to Hirst, in chemical lecture)—"Will you give me some facts regarding water?"

Hirst—"Anything but that!"

Nixon—"Lew Henry is some singer, isn't he?"

Harding—"Yes; he broke the record once when he sang into a phonograph."

Bramhill (picking himself up after a spill at rink)—"Oh, war!"

Miss I.—"Why do you say war, Mr. Bramhill?"

Bramhill—"Well, you know what war is."

Cooke—"Hello! Are you looking for four-leaved clover?"

Leppan—"No; I'm simply looking for a meristic variation in the form of a quadrifoliate specimen of *Trifolium repens*."

Freshman—"Two and two makes four."

Mr. U.—"Why, you have actually learned something since you have been here."

Miss S.—"And what is your Christian name, Mr. King?"

H. M. King—"Henry, but at home they call me Hen for short."

Miss S.—"Why is that?"

H. M. K.—"Because I laid around the house all day."

Bland—"Send a dozen roses to this address."

Salesman—"Yes, sir."

Bland—"Will you trust me?"

Salesman—"Certainly."

Bland—"Then make it two dozen."

CLIPPINGS

Just as Usual.

I took my skates from off the shelf,
 Unfit for use those skates I found,
 And thus I muttered to myself,
 "I think I'd better have them
 ground."

I sent them to the shop straight-
 way—

A shop which every skater knows—
 And steadily, by night and day,
 It froze:

The grinder ground, the time passed
 by,

At last those skates returned to me,
 "Now for enjoyment!" was my cry;
 "To-morrow on the ice I'll be."

To-morrow came, and then, of
 course,

I saw that drizzle was abroad—
 Without a vestige of remorse,
 It thawed!

—Anonymous.

A. D. 2,000

Give me a spoon of oleo, ma,
 And the sodium alkali,
 For I'm going to make a pie, mamma,
 I'm going to make a pie;
 For John will be hungry and tired,
 ma,

And his tissues will decompose,
 So give me a gramme of phosphate,
 And the carbon and cellulose.

Now give me a chunk of caseine, ma,
 To shorten the theremis fat,
 And give me the oxygen bottle, ma,
 And look at the thermostat.

And if the electric oven is cold,
 Just turn it on half an ohm,
 For I want to have the supper ready
 As soon as John comes home.

—Selected.

Ophelia was a dainty little maid,
 Who loved a very melancholy Dane;
 Whose affection of the heart it is said,
 Preceded his affection of the brain.
 When she found he wouldn't wed
 her,

In a river, in a meadder,
 Took a header, and a deader,
 Was Ophelia!

Trinity University Review, from
 W. S. Gilbert.

The Conscientious Cow.

The old cow walked by the dairy shed
 And, in her ruminant way, she said:
 "I'm feeling about as fine as silk,
 But I'd like a drink of my own good
 milk."

And, looking around, she presently
 saw

A pail a-standing beside the door—
 It was buttermilk, about two days
 old,

But the aged vaccine hadn't been
 told;

She only remarked: "It's mean to bilk
 An industrious cow of her own good
 milk."

And she took a drink, and she looked
 surprised,

And she walked away and that cow
 surmised,

She surmised about half-way down
 the lane

And she said in astonishment mixed
 with pain;

"To judge by the flavor of that there
 milk,

I can't be feeling as fine as silk,
 I must be bilious, I'll bet a hat.

When I get to giving down milk like
 that!"

—American Farmer.

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TELEPHONES THAT GIVE THE BEST
SERVICE FOR THE LONGEST
TIME WITH LEAST
TROUBLE



Write and ask for our No. 3 Bulletin, which
tells How Lines Are Built

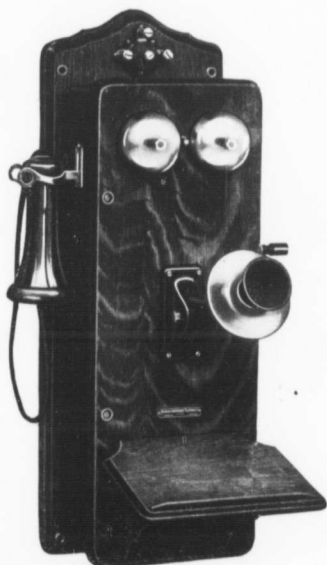


There are between five and six hundred local independent telephone systems in Ontario alone, and many others in the other provinces.

The number of these systems is being steadily increased many of the new Ontario systems being built by municipalities, the Ontario Telephone Act making it comparatively easy for rural municipalities to get into the telephone business.

We have assisted the majority of these local systems in their work of organization and preparation of plans, estimates, etc. Our experience with so many local systems, both companies and municipalities, enables us to give exactly the information required if you are thinking of a local telephone system.

The telephone business is our exclusive



business. The independent local and municipal systems in the East, and the Government-owned systems in the West are our only customers, so that we are specially equipped to look after their wants and directly interested in their success.

We are manufacturing the highest class of telephone equipment on the market and we guarantee it. We are supplying the great majority of the local and municipal systems with their telephones and requirements, from poles and wire to telephones and switchboards. It has been the quality of our telephones, combined with the prompt service we are enabled to give on account of our facilities, that has made our success.

If you are operating telephone lines or are considering building a system we can assist you.

Canadian Independent Telephone Co.

18-20 DUNCAN STREET, TORONTO Limited

Miss —— (at orchestra practise)—“Flute playing makes one bald, doesn't it, Mr. Goodman?”

Goodman—“Why, what makes you think that, Miss ——?”

Miss —— —“Well, just look at Mr. Lewis and Mr. Lund!”

London Free Press, reporting hockey meeting at Brantford: “The Guelph representatives were not present.”

They must have mistaken Little Mac for the bell-boy.

Mac Girls Take Notice, and Be Warned.

A report of the football game between McMaster and O. A. College in the McMaster University Gazette, last fall reads as follows: “The crowd (the McM. rooters) stayed close together during the game, which increased the effectiveness of their vocal efforts and also served as a protection against the pointed glances cast in their direction by the fair co-eds of Mac Hall.” Fie! Fie! Girls.

Some people are always grumbling because roses have thorns. I am thankful that thorns have roses.

Mr. R. Graham—“In your third year there are fewer fellows, enabling us to keep a closer watch on you.”

Nourse—“That's just where the rub comes in.”

Tubby Nourse (looking at exhibit labelled “Dressed Poultry”)—Say, Archie, isn't that a misnomer?”

\$5

For Some O.A.C. Student

IF you had to pass an examination on the subject of “Farm Gates,” and had to answer such questions as—

—what is to be said for and against the old-fashioned wooden Gate

—what are the faults of the ordinary Iron Gate?

—what in your judgment are the requirements of the ideal Gate?

—Is there any maker's Gate which represents your ideal?

—and if so, what are its points of distinction and merit?

What answers would you give?

If you feel like answering these questions, get pen and paper straightway. To the student of the O. A. C. (male or female) who submits the best set of answers, a prize of

\$5 Cash or Books

(to be selected by the winner) will be given,

Competition closes Feb. 15, 1913.

Address correspondence to—

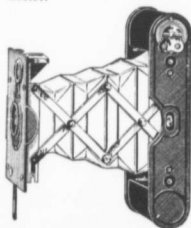
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As small as your note book and tells the story better.

Pictures
1 1/2 x 2 1/2
inches.

PRICE,
\$7.00



Vest Pocket KODAK

Simple, efficient. So flat and smooth and small that it will slip readily into a vest pocket. Carefully tested meniscus achromatic lens. Kodak Ball Bearing shutter. Fixed focus. Loads in daylight, for 8 exposures. Made of metal with lustrous black finish. Quality in every detail.

Catalog free at your dealers or by mail.

CANADIAN KODAK CO., Limited,
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A Fortune in Chicks

His Man and
His Son Made

\$12,000

In One Year
With Poultry



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

112 Page Book-Free

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

Write Your Name on a Postal

and mail it to us at once. We will send the complete book free and postpaid. You will want to know about the new **PRAIRIE STATE INCUBATOR** with **Sam Day**, also the **PRAIRIE STATE UNIVERSAL HOVER** which you can make at home and save money. All leading agricultural colleges and experiment stations order Prairie State Incubators because they "hatch chicks that live." Write for free book.

Ship yours early to us and get highest market prices.

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Made in Canada, of the famous Prairie State Incubators.

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CREAMERY
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OFFICE

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what salt they use. Ninety-nine out of the hundred will tell you "WINDSOR DAIRY SALT". They have tried it out, under every possible condition, and they know that

WINDSOR DAIRY SALT

gives the best results, every time.

It dissolves evenly, works in quickly, and blends perfectly with the butter, giving a delicious, appetizing flavor.

The prize butter-makers of Canada—without exception—use Windsor Dairy Salt.

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Successful Lessons in Poultry Raising

Twenty complete lessons. The Successful Poultry Book. Treatise on the care of Domestic fowls. This book is sent free on request.

O. ROLLAND, Sole Agent, Des Moines
Incubator

Department 20, P. O. Box 2363, Montreal.

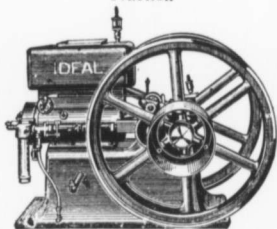
Official Calendar of the Department of Education

January:

1. New Year's Day (Wednesday)
By-laws for establishing the withdrawal of union of municipalities for High School purposes to take effect.
First meeting of Rural School Trustees.
Polling day for trustees in Public and Separate Schools.
2. High, Continuation, Public and Separate Schools open.
3. Truant Officers' Reports to Department, due.
4. Principals of High and Continuation Schools and Collegiate Institutes to forward supplementary report re changes in staff, etc.
Clerks of Municipalities to be notified by Separate School supporters of their withdrawal. Provincial Normal Schools open.
5. First meeting of Municipal Boards of Education.
6. Appointment of High School Trustees by Municipal Councils other than County.
Annual meeting of Rural Municipal Public Library Associations.
7. Annual Reports of Boards in cities and towns to Department due.
Secretaries of Rural School Boards to notify Inspector and Municipal Clerk of names and post office addresses of Trustees and Teachers.
8. Trustees' Annual Reports to Inspectors due.
Annual Reports of Kindergarten attendance to Department due.
Annual Reports of Separate Schools due.
9. Annual Reports from High School Boards and from Continuation Schools to Department due.
First meeting of Public School Boards in cities, towns and incorporated villages.
10. Appointment of High School Trustees by County Councils.
11. Rural Boards of Trustees may appoint Truant Officer if Township Council neglects to.

Brantford Gasoline Engines

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



We also manufacture complete lines of
WINDMILLS

Grain Grinders
Saw Frames, Pumps
Tanks, Water Boxes
Power Spraying Outfits, etc.
GOOLD, SHAPLEY & MUIR CO.,
Limited
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550 Underwoods are sold every day. The Underwood is the "aristocrat" of the typewriter world.

**United Typewriter
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EVERYWHERE IN CANADA.
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A BUILDING WORTH ERECTING IS WORTH PROTECTING

The great destroyer of buildings is fire, and when it comes from without the roof almost always ignites first.

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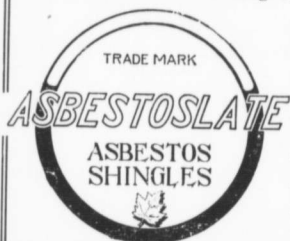
protect a building perfectly from catching fire in this way. Made only of Asbestos and Portland Cement, they are absolutely proof against sparks, cinders or burning brands.

Even when the fire starts within, this fire-proof roofing holds tight, helps to check and smother the blaze, and prevents it from spreading to nearby buildings.

Asbestoslate Cement Shingles are as attractive and as durable as they are protective. Write for booklet G. R. telling all about them.

Asbestos Manufacturing Co., Limited.
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Factory at Lachine, Que. (near Montreal)

60



The Royal Military College of Canada



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

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

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

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

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

The strict discipline maintained at the College is one of the most valuable features

of the course, and, in addition, the constant practice of gymnastics, drills and outdoor exercises of all kinds, ensures health and excellent physical condition.

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

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

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

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

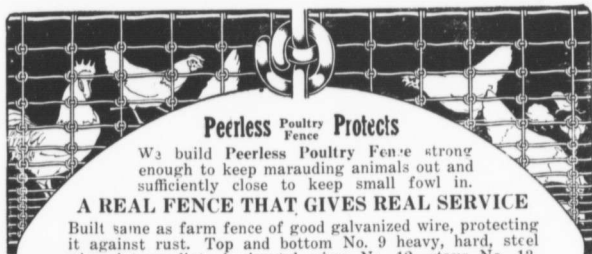
The annual competitive examination for admission to the College, takes place in May of each year, at the headquarters of the several military districts.

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

H.Q. 94-5.

9-09.

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

LOCALS

Mr. Stone—"This seaweed is called brown seaweed because it is brown."
—If you wrote that on an exam paper you would get plucked sure.

Mr. McLennan (lecturing to Second Year)—"Tomatoes should be stored in a cool, dark, dry room, having plenty of light and warmth."

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Fig. 3

Reliable Steel Tanks

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A steel tank must be built to stand the strain when water-filled. It must be thoroughly braced—that is the secret.

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do not bulge out, then start leaking. They are stiffened up so that they cannot budge an inch. They stand right up to their strain.

The material is the finest Apollo galvanized steel. It won't rust. The workmanship of the best.

You probably need a tank. So get free estimates and full particulars from office nearest you. Address:

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WINNIPEG TORONTO CALGARY

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

Feeds, Prints, Counts, Checks, Stacks and Delivers Automatically
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Perfect Register

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

And—What Does This Mean to You?

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

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LONDON, CANADA

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

Stumps Minimize Your Profits



Stumps Blasting

How much of your most fertile land is occupied and wasted by stumps? The stumps take three times the space they occupy, because your plow or mower cannot work up close to them. Now you can remove these stumps or boulders in a short time without much trouble, and reap a large profit from the land they occupy. Let us send you our Booklet on "The Use of Explosives for Farmers," which gives full instructions regarding the use of C. X. L. Stumping Powder.

Many have benefitted by the information contained in this book. One man removed eleven stumps in one hour with C. X. L. Stumping Powder. You can do equally well. Our Stumping Powder is absolutely safe and sure. When properly handled you take no risk in using it.

Send for this Booklet to-day. It is full of valuable information.

Canadian Explosives Limited

Montreal, P. Que.

Victoria, B. C.

Summer Boarder—"Don't you ever come to see the sights of a city?"

Farmer Jones—"Oh, no; we see 'em every summer."—Judge.



A new yell for the Freshmen:

Rah! Rah! Rah!

Ma! Ma! Ma!

Pa! Pa! Pa!

Help!



Ted Darling—"I've paid my Y. M. C. A. fee for four years now, and I don't see that it has done me any good."



Mr. Galbraith—"A geyser is a thermal spring that interrupts at intervals."

ONTARIO VETERINARY COLLEGE

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

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

N. B.—Calendar on application.



ABSORBINE
will reduce inflamed, swollen joints, Bruises, Soft Bunches, Cure Soles, Poll Evil, Quitor, Fistula or any unhealthy sore quickly; pleasant to use; does not blister under bandage or remove the hair, and you can work the horse 24 hours, delivered, 1/2000 7 1/2 free.

ABSORBINE, Ointment for mankind. Reduces Painful, Swollen Veins, Gout, Wens, Strains, Bruises, stops Pain and Inflammation. Price \$1.50 per bottle at dealers or delivered. Will tell you more if you write. Manufactured only by W. F. YOUNG, F. D. I., 177 Lyman Bldg., Montreal, Ca.

Wolseley, Sask.,

March 28, 1907.

Dear Sir:

Have been using ABSORBINE for three months and I have great faith in it, I first tried it on a colt that had got his leg cut in a barbed-wire fence. It healed up and began to swell. I applied Absorbine and it removed swelling in twelve days.

Yours truly,

F. O'NEILL.

A HIGH GRADE ESTABLISHMENT
FOR THE

PRINTING

OF CATALOGS, BOOKS and
COMMERCIAL JOB WORK

Society and College
Work a Specialty

R. G. McLEAN

26-34 Lombard Street

TORONTO, ONTARIO

Telephone, Main 637, 638.



Do You Keep Cows, or Do they Keep You?

A few cows should do much toward making your farm a paying proposition. If not, there is something wrong.

Three things are necessary to make the dairy yield a satisfactory profit:—

FIRST—Good Cows.

SECOND—Proper Feeding and Care.

THIRD—Proper Disposition of the Milk.

No matter whether you have half a dozen cows or half a hundred, it will pay you to take steps to see that you secure the proper returns from this source—be sure that your cows are more than self-supporting.

Some helpful hints will be found in

“PROFITABLE DAIRYING,”

Which may be had
from any

Massey-Harris Agent.



Horatius Moves the Piano.

(The story related in the following pathetic ballad is founded on fact.)

Prologue.

One evening in December last—
'Twas the sixth, if memory serves
aright—

The word around the club was
passed,

"Come over to Mac Hall tonight."

"I say, old chap, what's the game,
you know;"

Then all in turn did cry the ten,
"Hush! Hush! Breathe it only in
whispers low,

We're going to move the piano
again!"

The Play.

Then out spake Archie Campbell,
And out spake Tubby Nourse,
"We'll be there with our dress suits
on,

For we love to dance, of course."

Then Vanderbyl quoth "Count on
me,

With Mollison I'll come,

And follow leader Bobby D.;

Oh, how we'll make things hum."

Then forth the brave band "sallied,"

And through the portals went.

Anticipation led them on,

For the gym their steps were bent;

When, lo! Mrs. F. did bar their
path,

"What wish you, merry men?

Much do I hate to raise your wrath,

But you'll not dance tonight!

Amen!"

Epilogue.

There was cussing (not fussing)
that night at the Hall,

But that dance was postponed for
ever and all.

Modern Farming.

A farmer's fossiliferous
Who thinks his cow corniferous
Will ever be lactiferous

On bran or grass or hay.
Each barnyard covered over,
And a "silo" made of clover,
With a fair per cent. of "stover,"
Is the only modern way.

In raising crops abuminous,
One fact is nearly luminous—
The need of the "leguminous,"

Is something one should know.
Unless your plants endogenous
From atmosphere oxogenous
Extract a bit of "nitrogenous,"
You'll never make them grow.

Get "absorbents" aromatic,
And a float or two "phosphatic,"
And from out your mental attic
Have a care that you are rid
Of all former ways of mowing,
Planting, ploughing, seeding, sowing;
Hay or corn no longer growing,
As your father thought it did.
—Puck.

We Manufacture**Peep Sights**

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

H. Occomore & Co.
GUELPH, ONT.

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

Dentist

(On the Corner)

Over Guelph and Ontario Investment
and Savings Society Bank

PHONE 16

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



THE HERALD PRESS PRINTS IT BETTER

THE GUELPH HERALD has every facility for turning out the best class of printing—real classy work—and with the one idea of giving the customer entire satisfaction. It will be a pleasure to show you samples of

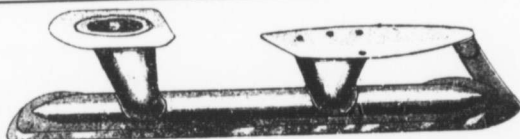
BANQUET PROGRAMMES,
DANCE PROGRAMMES, MENU
CARDS, INVITATIONS,
WINDOW CARDS, TICKETS,
LETTER HEADS, ETC.

Your order will be appreciated.

THE GUELPH WEEKLY HERALD, containing authentic news of O. A. C. happenings, mailed to any address in Canada for \$1.00 per year; U. S., \$1.50.

THE GUELPH HERALD

Phone 17. - 92 Quebec St. E.



Hockey Boots, Skates and Sticks
Sweaters and Sweater Coats
College Cushions
Banners and Athletic Supplies

J. BROTHERTON

550 Ycnge Street, TORONTO, ONT.

SEND FOR ILLUSTRATED CATALOGUE

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

To the O.A.C. Old Boys

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

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

SWORN WEEKLY MERCURY CIRCULATION, 5,700

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

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

J. I. McINTOSH, Publisher and Proprietor.

D. H. BARLOW & COMPANY

GUELPH AND ONTARIO REAL ESTATE, CITY
AND FARM PROPERTY

CONVEYANCING, DEEDS, MORTGAGES, WILLS, ETC.

Fire Insurance—Best Companies

PATENTS procured in all countries

FINANCING—Money to Loan on First Mortgages

D. H. BARLOW & COMPANY,

Phone 411.

29 Douglas St.

GUELPH, ONT.

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THE LIBRARY, UNIVERSITY OF GUELPH

Kandy Kitchen

Is Patronized By Particular People

When you become particular you
become our customer

Our Bon Bons

are irresistibly delicious. Every
chocolate in our boxes of "mix-
tures" furnishes a fresh
surprise. Some are hard,
some creamy, some fruity
—the best you ever
tasted. KANDY
KITCHEN stands
behind its guar-
antee

Kandy Kitchen

LOWER WYNDHAM STREET, GUELPH

Barretts Dairy Co., Ltd.

F. L. BARRETT

P. A. B. CHERRY, B. S. A.

A. G. FLEMING, M. B.

President

Treasurer

Secretary

Besides handling Milk, Cream and Butter we manufacture and deliver to all parts of the city

Devonshire Clotted Cream and Lactic Cream Cheese

Delicacies Hitherto Unobtainable in Canada.

Give us a trial and if satisfied patronize an establishment which was organized and is run by ex-O. A. C. students.

BARRETTS DAIRY CO., LIMITED

Phone 799

2 Carden Street (Market Square)



SPECIAL Cruise Around the World

EMPRESSES OF "RUSSIA" AND "ASIA"

(New C. P. R. Pacific Steamships)

The **Empress of Russia** will leave Southampton April 1st, calling at Gibraltar, Villefranche and Port Said, proceeding via Suez, Colombo, Penang, Singapore, Hong Kong, Sharghai, Nagasaki, Kobe and Yokohama, arriving Vancouver May 31st, 1913.

Empress of Asia will sail from Southampton May 27th, making similar cruise.

Most direct connection for April 1st sailing is via "Empress of Britain" from St. John, N. B., March 21st.

RATE FOR ENTIRE CRUISE, \$639.10

Exclusive of maintenance between arrival time in England and departure of "Empress of Russia."

Get particulars from Canadian Pacific Agents, or write M. G. MURPHY, D. P. A., C. P. Ry., Toronto.

J. HOFFMAN, C. P. & T. A., 32 WYNDHAM ST.

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

LOCALS

Normal—"What was the row last night?"

Homemaker—"The boys burnt Guy Fawkes in effigy."

Normal—"Who's Guy Fawkes; A freshman?"

At the Butcher Shop.

The Bride—"I want a piece of meat without bone, fat or gristle."

The Butcher—"Eggs are thirty cents today, ma'am."

Patronize Review advertisers. It helps you, it helps them and it helps us.

D. M. FOSTER, L.D.S., D.D.S.,

DENTIST,

Cor. Wyndham and MacDennell Streets.
Telephone 14. Over Dominion Bank.

\$20 BLUE SERGE

Suits guaranteed not to fade for two years are our great trade-winners. See them! They look, feel and will wear like \$25 suits. Our

SUITS TO ORDER

at \$15 to \$30 comprise a range of nearly 300 strikingly handsome patterns in the new browns and greys, blue serges, etc. Best fitting clothes and best values in Guelph.



Lyons Tailoring Company

Tailors to Men Who "Know"
47 WYNDHAM STREET

Prescriptions

Do these features count with you?

Quality of Drugs used.

Carefulness in operation.

Cleanliness in our laboratory

If so, bring your prescriptions here.

Alex. Stewart

Dispensing Specialist

Next to the Post Office.

Promptness

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

Ladies' and Gents' Clothes Pressed, Cleaned and Repaired

—AT—

STEWART & WILSON

19-21 Quebec St., GUELPH.

Phone 456. Above R. J. Stewart, Tailor

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, ONTARIO.

Telephone 99.

HEADQUARTERS FOR
Students' Supplies

ASK FOR CATALOGUE

WATERS BROS.

PHONE 350

GUELPH

LOOKEE HERE!

Lee Wing calls for your laundry on Monday and Wednesday and returns it Wednesday and Friday.

WORK GUARANTEED

NOTICE TO STUDENTS

You are invited to make our store your meeting place when down town.

SHERIDAN & O'CONNOR,
Tobacconists,

45 Wyndham Street.

R. H. McPHERSON

Barber

Get your hair cut at 145 Wyndham street. An extra barber employed at the highest wages for your sake.

THE OLD TOBACCO SHOP

A full line of imported cigars, cigarettes and tobaccos always in stock. First store on Quebec Street, opposite Montreal Bank. BBB pipes a specialty.

E. H. JOHNS, Proprietor

Successor to R. Hackney.

Phone 312K

Regal Shoes
For Men.

Sorosis Shoes
For Women.

W. J. THURSTON,

Sole Agent

THE NEW SHOE STORE,

39 Wyndham Street

MIDNIGHT SUPPERS

Bacon, Oysters, Fancy Biscuits,
Olives, Pickles, Chocolates, Etc.

J. A. McCrea & Son

NOTICE

The best and most convenient Barber Shop for O. A. C. Students.

H. H. WORDEN, ST. GEORGE'S SQUARE,
Street Cars every 15 minutes. Three chairs.

No waiting.

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

JAMES H. SMITH

Next to Barrett's Dairy

Melasses Taffy, Walnut Cream and Maple Cream. Best in the city.
Fresh Every Day.

LUNCHES SERVED

LEE LEE & CO.

Best hand laundry in Guelph. Goods called for on Monday and Wednesday and delivered Wednesday and Friday.

SUEY WAH

Hoop la! Come to the Big Laundry. Expert workmen. Hand work only. College calls made Monday, Wednesday and Friday.

16 Wilson St., GUELPH.

KING EDWARD BARBER SHOP

Headquarters for a first-class
Shave and hair cut or shoe shine

CHAS. BOLLEN - Proprietor

**ERNEST A. HALES, 68 St. George's
Square**

Sells the Best Meats
and Poultry

Phone 191. - - Open all Day

Students' Special In

PHOTOS

\$1.50 Per Dozen
Students Only

THE BURGESS STUDIO

FREDERICK SMITH,

PLUMBER, STEAM
AND GAS FITTER

Sanitary Appliances Estimates Furnished.

GUELPH.

"Eclipsed by None."

Walker's Electric Boiler Compound

It removes the scale or incrustation from boiler without injury to the irons, packings or connections, and prevents foaming.

The only reliable boiler compound on the market today. We also handle cylinder, engine and machine oils. Tri-sodium phosphate, engine supplies, etc. Specialty departments, Crystal Separator Oil, Waxine Floor Oil. Correspondence invited.

The Electric Boiler Compound Co., Limited
Guelph - Ontario

Football Boots

Boys, see our Sporting Shoes before buying. We have a special line of Football Boots at \$2.25.

Send us your repairing.

J. D. McARTHUR

"THE HOME OF GOOD SHOES."

16 Wyndham St.

BOYS, BUY YOUR SUITS AND FURNISHINGS HERE.

We carry only the best makes of clothing in correct styles for men who care. Our stocks of fine shirts, ties, collars, gloves, underwear, etc., are complete, and marked at prices that will convince you of this store's value-giving powers.

Pay Us a Visit.

D. E. MACDONALD & BROS.
LIMITED.

We are agents for the House of Hobberlin.

The Yellow Front

MEN'S CLOTHING

We make a specialty of young men's clothing, furnishings and hats at the right price.

THE YELLOW FRONT.
GARNET K. CUMMING

Pringle

THE JEWELER

Entomological Supplies.

Magnifying Glasses, all qualities
Fountain Pens Rubber Stamps

O. A. C. and Macdonald Institute
College Pins.

Fine Job Printing

We execute the finest grades of printing, plain or in colors, promptly. Put us to the test.

Kelso Printing Company

St. George's Square.
Phone 218 Opp. Post Office

FLOWERS

We carry the best selection of Cut Flowers in the city. When you want something choice call on us or phone 866. Prompt delivery and careful attention to all orders.

McPHEE, Florist
WELLINGTON BLOCK.

Look! Look!!

Suits Pressed	-	-	50c
Suits Cleaned and Pressed	-	-	75c
Pants Pressed	-	-	15c
Velvet Collars	-	-	75c to \$1.25
Dry Cleaning	-	-	\$1.25

MONTHLY CONTRACTS

Work Done by Practical Tailors.

C. E. HEWER,

49 QUEBEC ST. - PHONE 808

The College Book Shop

4 Doors Above Post Office	The only shop in Guelph with all the Text Books and requisites in use.	Wyndham Street Upper
---------------------------	--	----------------------

\$1.00 FOUNTAIN PENS.
SWAN FOUNTAIN PENS
EMBOSSED O. A. C. NOTE PAPER
AND PADS.

Special prices to students on all lines.

The Recommended Shop.
The College Book Shop.
C. L. NELLES.

Central Book Store

Opposite where the Street Cars Cross.

Dealers in

BOOKS, STATIONERY,
FANCY GOODS,
CHOICE CHINA.

C. ANDERSON & CO.

LADIES' SUITS
OF
THE BETTER CLASS

GLOVES, HOSIERY, WAISTS
DAINTY EVENING DRESSES

HEWER'S FASHION HALL
St. George's Square.

**BROADFOOT'S
Red Cross Pharmacy****DRUGS AND SUNDRIES**

Fountain Pens, Toilet Articles
Nyal's Family Remedies
Paterson's Chocolates

ST. GEORGE'S SQ., COR. QUEBEC
PHONE 381.

PHONE 719

44 CORK ST.

Jas. K. Readwin

Successor to Chas. A. Kutt

Ladies' and Gentlemen's Clothes
Cleaned, Pressed and Repaired

Goods Called for and
Delivered. GUELPH. French Dry
Cleaner.

HEADQUARTERS FOR**HARDWARE**

AND SPORTING GOODS
AT LOWEST PRICES

G. A. RICHARDSON

Upper Wyndham St., GUELPH.

R. S. Cull & Co.

THE LEADING

*Clothiers and
Furnishers ::*

35 Wyndham Street
GUELPH - - ONTARIO

HELP

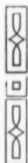
Yourselves by buying any furniture you may need at

J. M. STRUTHERS,

120 Wyndham Street - - Guelph

He will use you right.

Phone 253.

**WANTED!**

500 O. A. C. Students to Get Their Hair Cut at the

New Imperial Barber Shop

48 Cork St. East, Guelph

CORRIGAN BROS., Proprietors.

GET OFF CAR AT CORK STREET

3 Chairs No Waiting 3 Chairs

THE GUELPH OIL CLOTHING COMPANY, Limited

Manufacturers Oiled Clothing, Tarpaulins, Tents, Awnings, Stack and Binder Covers.

Guelph and Ontario Investment and Savings Society

(Incorporated A. D., 1876)

Debentures issued for \$100.00 and over for five years at four and one-half per cent., and for shorter periods at four per cent.

Deposits received and interest paid or compounded half yearly at highest current rate

Executors, Trustees, etc., are authorized by Special Order-in-Council (Ontario Government) to invest trust funds in the Debentures of this Society, and to deposit trust funds in our Savings Department.

Office Hours: 10 a.m. to 4 p.m.

J. E. McELDERRY, Managing Director

Office, Society's Building,
Corner Wyndham and Cork Streets,
GUELPH.

T. & D. CLOTHES

MADE FOR YOUNG MEN.

"T. & D." Clothes are specially made for Young Men, by Young Men, in a hundred fresh, crisp styles of marked attractiveness. You cannot find their superior under any other name; you'll quickly see it's so when you examine the new Fall Models.

"T. & D." Suits, \$10 to \$25.

"T. & D." Overcoats, \$8.50 to \$25.

Our Hat and Furnishing Departments are complete with the newest things in men's wear.

"O. A. C." Pennants, 25c and 50c.

THORNTON & DOUGLAS, Limited

Lower Wyndham. Edwin E. Bell, Mgr.

CITY CAFE

We make a specialty of catering to the wants of the college students



71 QUEBEC STREET

CUT FLOWERS

Choice Cut Flowers always on hand. Roses, Carnations, Valley, Violets and all Flowers in season.

GILCHRIST'S

Phone 436.

St. Georges Square.

JOHN IRVING

"MY TAILOR"

Clothing Made to Order

Pressing, Cleaning and Repairing

49 Cork St.

Phone 739L.

Guelph.

WHOLESALE AND RETAIL.

PHONE 197

THE M. AXLER COMPANY

(M. AXLER)

IMPORTERS AND DEALERS IN

Staple and Fancy Dry Goods, Ladies' and Gentlemen's Ready to Wear Clothing,

Carpets, House Furnishings, etc.

SPECIAL ORDER CLOTHING

107 Wyndham Street

Guelph, Ont.

You could enjoy yourself for a nice meal and a cup of real American Coffee.

Call at the

DOMINION CAFE

104 WYNDHAM STREET.

Phone No. 688

BOND'S

GUELPH'S
BIG
BRIGHT
HARDWARE
STORE
HAS
WHAT
YOU
WANT.



FOOTBALLS
TOBOGGANS
SNOW SHOES
SKATES
HOCKEY GOODS
BOB SLEIGHS
AND
SUMMER GOODS
IN SEASON
DAILY DELIVERY
TO COLLEGE.

HARDWARE

SPORTING GOODS

THE BOND HARDWARE CO., LTD.

COLLEGE BOYS ARE AT HOME IN

Kelly's Music Store

because we keep a full line of

Violins, Guitars, Mandolins, Banjos and Strings. Edison and Victor
Machines and Records. Popular, Operatic and
Standard Sheet Music. Also

The Famous "Bell" Piano

a piano of prestige

Not only is the tone rich and full, touch sensitive, case beautiful, but it has many
individual features which mark "The Bell" Canada's Leading Piano.

Pianos tuned and rented.

All musical instruments repaired.

C. W. KELLY & SON

133 Upper Wyndham St

GUELPH

Fancy Biscuits

A large assortment of Carr's and Christie's dainty and delicious Fancy Biscuits. They're unvarying in goodness—the kind to serve.

Benson Bros.

GROCERIES.

Diamond and Shield

O. A. C. PINS

LEATHER FOBS

Twenty-five Cents Each



SAVAGE & CO.

JEWELLERS

PETRIE'S

Confectionery Store



"The Spa"

CHOCOLATES and CANDY

"The place to buy yours."

LUNCHEONETTE

Served at all hours

We can supply you with a lunch to take to your room.

Corner Wyndham and McDonald Streets.

The Royal City SHOE STORE

Opposite Winter Fair Building.

52 Market Square.

Phone 589

Dealer in

HIGH GRADE BOOTS, SHOES,
RUBBERS, Etc.

Our display of Footwear is now at its best. Shoe Goodness at moderate prices, and Shoe Elegance and Luxury are both in evidence.

The High Knob Toe, Short Vamp, High Heels and Arches, the New Tips and Perforations, and other New Features are here for the College Students.

This is the store for the young people.

See our Window Display.

W. J. HENRY,
Manager.

J. E. SCHMIDT,
Proprietor.

Get your Text Books and all your supplies at the

Students'
**Cosmopolitan Club
Book Department**

This is managed by students and conducted in the best interests of the student body

We know what college men want and keep everything in stock.

ALWAYS OPEN

Ex-Students' Correspondence
Invited.

Rexall
TRADE MARK

Shaving Lotion

25c and 50c

Delightful to use. Allays all irritation caused by shaving. Also a full line of needs for gentlemen who shave—Razors, Strops, Brushes, Mugs, Soap, Etc.

QUALITY IS ECONOMY

John D. McKee, Phm. B.

The Rexall Store

18 WYNDHAM ST., GUELPH
Phone 66.

The
**Kennedy
STUDIO**



Is equipped to produce the best in Groups or Individual Portraits.

A Students' Special in Photos at \$1.50 a Dozen.



The Kennedy Studio
23 WYNDHAM ST., GUELPH
Phone 498



TRY

Petrie's
Drug Store

FOR YOUR

Drugs and Toilet Articles. Kodaks and Photographic Supplies. Developing and Printing

THE BEST IN THE CITY
GIVE US YOUR WORK TO DO

LOWER WYNDHAM STREET.



THE LIBRARY, UNIVERSITY OF GUELPH

"OURS IS SANITARY"

GUELPH STEAM LAUNDRY

We have made special arrangements for this year to the college students, in which we intend doing any ordinary repairing. Our drivers are at the O. A. C. Monday, Wednesday and Friday mornings. A fair share of patronage solicited.

80 NORFOLK ST.

PHONE 95.

G. F. McARTHUR, Manager.



THE BASIS UPON WHICH

we ask your patronage is years of experience in correcting eye troubles.

Scientific instruments for testing the eyes, and our own Lens Grinding Plant for grinding just the Lenses your eyes need.

You get RELIABLE GLASSES if we make them.

A. D. SAVAGE

Guelph's Only Exclusive Optician
"Right at the Post Office."

Phone 627.

HIGH GRADE MEN'S
FURNISHINGS

O. A. C.

HIGH GRADE FURS,
Men's and Women's

Clothes That Distinguish

the wearer above the common must be made for the individual. They must not be made to fit some ideal physique, of which not one man in a million could be a model. Have us make you a suit that will embody all the latest ideas as to style and smartness and will fit you just as you are built. Don't worry about the price. That will be right, too.

Keleher & Hendley

Fine English Neckwear.

Model Merchant Tailors

Hawes Hats—The Latest Style.

Ladies' Golf Sweater Coats.

De Jaegers and Other Makes

The
Royal Bank of Canada

With which is amalgamated **THE TRADERS BANK OF CANADA**

Authorized Capital	-	-	-	\$25,000,000 00
Paid-up Capital	-	-	-	11,500,000 00
Reserve Fund	-	-	-	12,500,000 00
Total Assets	-	-	-	180,000,000 00

Branches throughout all the Canadian Provinces, the West Indies and Cuba, also at London, England, and New York.

Travellers' Letters of Credit and Money Orders or Drafts issued payable in any part of the world. Remittance Drafts cashed at ruling rates. Savings Bank Accounts carried for Students and Staff (interest allowed).

R. L. TORRANCE, Manager

GUELPH

Simple Truths Plainly Told

Is our method of soliciting your business. We never resort to exaggerations of any form in our advertising. We sell good goods only, charge fair prices only and seek the trade of those men who appreciate good values and considerate treatment.

Once we have induced you to give us a trial we have no fear about keeping you as a permanent customer. : :

Our New Fall Goods Are GREAT
—YOU SHOULD SEE THEM

R. E. NELSON

Men's Furnisher and Fine Tailoring

93 Wyndham St., Guelph

G. B. Ryan & Co.
GUELPH, ONT.

Correct Clothes FOR MEN

Ready-to-Wear and Special Order.

Smartly tailored by the best
men's clothing establishments
in Canada.



A complete stock of Neckwear, Shirts,
Hats, and all furnishings for men.

Our Advertisement, Our Aim and Our
Accomplishment—A Square Deal.

NOTICE!!

EVERYBODY'S DOING WHAT?

Insuring Their Life in the London Life,
 Buying St. Catherines Real Estate,
 Subscribing for Canadian Countryman,
 Farmers' Magazine Maclean's Magazine.

College and City Agent.

J. C. POPE

212 GORDON ST. - GUELPH, ONT.

MOORE & ARMSTRONG

Guelph's Ladies' Store

Women's and Children's Garments

Dress Goods and Silks

Exclusive Millinery

Perrin's Kid Gloves

Northway Coats and Suits

Crompton's C-C a la Grace and
 Parisienne Corsets

THE WHITE HOUSE

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

GUELPH

Radial Railway Co.

TIME TABLE

Cars Leave St. George's Square for Elora
 Road, Suffolk, Waterloo Avenue and O. A.
 College as follows:

a.m.	a.m.	a.m.	p.m.	p.m.	p.m.
6.15	8.25	10.35	12.25	4.05	7.55
6.35	8.45	10.55	12.45	4.25	8.15
6.55	9.10	11.20	1.05	4.50	8.35
7.20	9.30	11.40	1.30	5.15	9.00
7.40	9.50	12.05	1.50	5.40	9.20
8.00	10.15		2.10	6.05	9.40
			2.35	6.30	10.05
			2.55	6.50	10.25
			3.20	7.10	*10.45
			3.40	7.35	

Returning, cars leave Terminals ten minutes later.

*Saturday night only.

Cars run to Power House only after last trip.

Young Men Stay in Canada

Advise Your Friends to Come to
CANADA

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

Agriculture

FRUIT-GROWING, DAIRYING—WHAT YOU WILL!

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

The day of CANADA'S PROSPERITY is the day of

Your Opportunity

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

Tell your friends to apply for further information
To

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

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

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There's no good reason why you should wait till spring before getting one

On the contrary you may buy a DE LAVAL NOW and save half its cost by spring. Moreover, if you can't conveniently pay cash you can buy a DE LAVAL machine on such liberal terms that it will actually pay for itself.

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