

PAGES

MISSING

THE O. A. C. REVIEW

"THE PROFESSION WHICH I HAVE EMBRACED REQUIRES A KNOWLEDGE OF EVERYTHING."

VOL. XXX.

DECEMBER, 1917

No. 4

The Aberdeen Angus as a Breed

BY BERT MAXWELL, '18

HORNLESS cattle existed in the earliest age to which we can trace the bovine form. Fossil and semi-fossil remains found in Scotland establish the fact of the pre-historic existence of wild polled cattle in those very districts occupied by the known ancestors of the present Aberdeen-

As can be seen, therefore, the Aberdeen-Angus breed is one of the oldest established breeds of beef cattle. They are black in color and natives of the counties of Aberdeen, Kincardine and Forfarshire in Scotland, where church and state did much to encourage the improvement of the stock by virtue of



Epistos—Grand Champion Bull at International Exposition, 1916.

Angus breed. There is documentary evidence to show that in 1523 the black *homyl cattle occurred in Aberdeenshire, but the first specific mention of polled animals of the breed is that of the prize-winning "black polled" exhibited in 1811 from a well-known Aberdeenshire source, the influence of which is still felt on the breed.

establishing the many Scottish fairs. With the great increase in the demand for beef, as a result of the Queen Ann wars (1604-1714), cattle breeding in Scotland received a great impetus. Englishmen found that their choicest meats came from the Scottish side of the border and it was while this *"polled".

trade was at its height—in the middle and latter portions of the 18th century—that authentic record was made of the breed's progress in Aberdeenshire, Kincardineshire and Forfarshire. In Aberdeenshire we find the breed described as having been "improved" by breeding the best males to the best females, rules being laid down for breeding for both beef and the dairy, which proves the breed to have been originally what we might term of a dual purpose nature. In fact, in their early history they are said to have been excellent milkers, and possibly until the present time they have retained that excellent quality quite as much as any of the other prominent breeds of beef cattle have done, as they practically all produce enough milk to raise their calves well.

The earliest improvers of Aberdeen-Angus cattle include the Watson family, William McCombie, Lord Panmure, Lord Southesk, William Fullerton, Mr. Bowie and Mr. Robert Walker. While many other breeders assisted materially in improving this breed, none accomplished as much as the first two named.

The introduction of Aberdeen-Angus cattle to America was comparatively recent. In 1873 George Grant, of Kansas, brought the first to America. In 1876, Professor Brown, an Aberdonian, who occupied at that time the position of director of the Ontario Agricultural College, imported the bull, Gladiolus and the heifers Eyebright and Leockel Lass 4th. These formed the nucleus of the breed in Canada, achieving a reputation not only as beef cattle but also as producers of milk.

The breed fast became popular especially during the past 50 years, both with farmers and ranchers, many finding their way to Australia, New Zea-

land, Argentine, the United States and to our Dominion of Canada. This smooth early maturing breed is now well scattered from Prince Edward Island in the east, to British Columbia in the west, and has made exceptional records from time to time at the larger exhibitions, fat stock shows and on the block. For the rancher, the Aberdeen-Angus has proved an ideal breeder. They are good rustlers, and being of polled character, there are few losses from cows dropping calves prematurely due to injury.

Great as has been the progress in every department of agriculture during comparatively recent years, there is probably no problem that deserves more attention than the production of meat animals. The war created a demand for foodstuffs, which is continually increasing at a rate nothing short of critical and is of immense importance. We must not overlook the fact that it is to us Canadians that the Allies look for much of their sorely needed wants. The export of meats is of no less importance than the maintaining of a goodly supply of grains to our fighting army and to those of our allied nations.

The war is depleting the breeding stocks of Europe to a far greater extent than most of us know anything about, and before it is brought to a successful conclusion the world's greatest livestock breeding grounds may be so stripped of their good cattle that they will have to depend upon the American Continent for the necessary high class blood to lay a foundation for their breeding work in years to come. This is our opportunity and it is right now that Canadian breeders should be looking ahead and laying their plans to meet what seems almost certain to be a steady demand.

To meet the immediate demand

most economically and at the same time make no mistake in the choice of an excellent breed, we should select the breed of beef cattle which lends itself most appropriately to the situation, that is, a breed which will mature early, produce a smooth, even carcass of nicely marbled beef and will dress a high percentage of carcass on slaughtering. It is in these essential respects that the Aberdeen-Angus breed has made its high reputation in the beef world.

To avoid generalization and at the same time present the true merits of

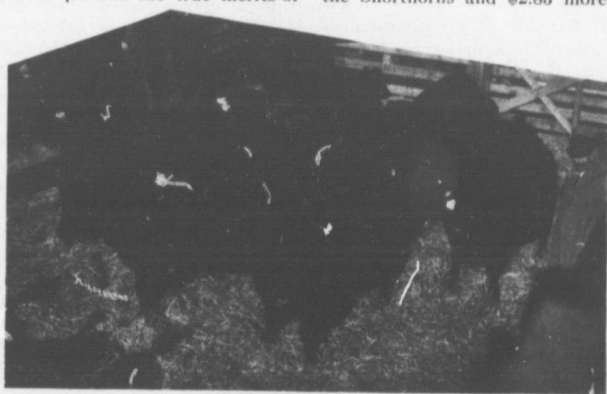
by the prices the packers' and butchers' buyers paid for the best carload lots of the different breeds. The average prices for carload lots of fat steers are as follows:—

10 loads of Aberdeen-Angus steers averaged \$18.58.

10 loads of Shorthorn steers averaged \$15.93.

10 loads of Hereford steers averaged \$15.75.

These figures show that the Aberdeen Angus sold for an average of \$2.65 per hundred pounds more than the Shorthorns and \$2.83 more than



Grand Champion Carload Lot at Chicago International Live Stock Exposition

the Aberdeen-Angus breed of cattle, the results of the leading Live Stock Shows and Exhibitions have been used where the leading beef breeds have been in direct competition in America. The past fifteen years is considered the best criterion of the beef cattle industry in America; therefore the results obtained from such a period are an index of the merits of the rival beef breeds.

Probably the most practical demonstration of the merits of the Aberdeen-Angus in 1916 was presented at the International Live Stock Exposition

the Herefords. A fitting climax and index to the trade was reached when the Grand Champion carload of Aberdeen Angus steers were sold at the world's record price of \$28.00 per cwt., thus showing the fact that excellence is found throughout the breed and not in a few individuals only.

In the Grand Champion Single Steer Awards since 1900 until 1916 at the International Live Stock Exposition, the Aberdeen Angus breed has won ten times, mixed Hereford-Angus and Angus Shorthorn twice, Hereford twice and the Shorthorn once. (there

was no exposition held at Chicago in the years 1914 and 1915 due to the ravages of the Foot and Mouth Disease.)

Out of the grand total of one hundred and sixty-nine, Champion and Reserve Champion Awards in the Single Steer or Heifer Competition since the inception of the "International" in 1910, Aberdeen-Angus won ninety-five, Herefords thirty-seven, Shorthorns twenty-five, and mixed twelve.

A review of the Carcass Competition of the past fifteen International Live Stock Expositions reveals the fact that Aberdeen-Angus cattle have won fourteen of the possible fifteen Grand Championships for dressed carcasses. Analysis of the awards covering the period of fifteen years further shows the superiority of the breed over others on the block; out of a possible of one hundred and forty-two prizes the Aberdeen-Angus won eighty-four which is 59% of all money prizes offered.

At Brandon Winter Stock Show, Brandon, Manitoba, since 1910 the Aberdeen-Angus has won throughout

in the Grand Championship for Single Steer as likewise in the Grand Championship Steer Herd.

At our greatest Canadian Fat Stock Show held in Eastern Canada, at Guelph, an Aberdeen-Angus steer won Grand Championship over all breeds in 1908 and Grand Championship Steer in 1912, 13, 15, and 1916. An Aberdeen-Angus also won Grand Championship over all breeds at Toronto National Fat Stock Show in 1913, 1914, 1915 and 1916.

The immense cattle industry which will no doubt grow to huge proportions and spread over the vast territories of this country must have as its foundation in the use of pure blood, and furthermore, it is dependent on the use of pure bred animals to maintain the standard it has already attained. It is gratifying, therefore, to know of the extraordinary growth of the Canadian Aberdeen-Angus Association, which last year increased its membership 150%, registrations increased by 100 per cent over the previous year, and transfers increased about 150 per cent. That the future of the Aberdeen-Angus breed in Canada is assured is no myth.

The Personal Factor in Poultry-Keeping

BY E. S. SNIDER, '18

IN Poultry keeping as in every other branch of live stock production, there are three main factors which control success. These are:

- (1) Breeding.
- (2) Environment.
- (3) The Personal Factor.

If any one of these factors is neglected or is deficient in any way, success is curtailed to the extent of that deficiency. It is with the last named factor that we wish to deal.

In a business such as poultry-keeping, when the strictest attention to detail is so very important, the Personal Factor naturally plays a very prominent part. Given the same breeding stock and similar housing facilities, no two men will attain to the same degree of success, due entirely to the personal factor. This personal factor is the keystone to success, because if it is efficient, a reasonable degree of success may be obtained

with only very ordinary breeding and environmental factors.

One can readily lay down general rules which apply to the feeding of breeding stock for the production of eggs for hatching, yet with equal feeding and environment factors, one man will obtain a much larger percentage of fertile eggs and of strong healthy chicks than will his neighbor.

This factor is always in evidence through the whole life of the hen. It makes its appearance in the brooding of the chicks. Many poultry plants have failed for no other reason than that the operator was unable to renew the flock. To be sure the environment was often to blame, by which I mean the brooding system, bad weather or something of that nature. Very often however, when you come to the final analysis of the case, you must put the blame on the personal factor. The operator may have known his business well enough, but he lacked that intuition or whatever else you may wish to call it, that told him to do the right thing at the right time.

As an example of this I wish to relate several instances which came under my personal observation. A flock of some five hundred chicks was placed under a large coal heated house, situated in a large, well lighted warm room, and brooded them for several weeks. They did well for a time, but after three weeks began to die, because they should have been moved to the brooder house when they could have had access to an outside runway. They were moved soon after this but too late, and continued to die off rapidly even after being allowed out doors. When they were finally moved to the colony coops there were only some eighty seven chicks left. The same man fed them that fed other lots which had a low rate of mortality.

In another instance a colony coop full of chicks was ruined simply because the stove which heated the house was not properly attended to. The temperature was irregular, the chicks being alternately chilled and overheated until they learned to crowd in a corner, after which they were past redemption. This state of affairs was due partly to a lack of knowledge of the proper care of a coal burning brooder stove and perhaps partly to neglect. The personal factor was strongly in evidence here. It would have paid better to kill and bury the whole flock then and there, then to try to raise them. They have been dying off all summer and are still dying and what few remain are practically useless. Many flocks of fine chicks are ruined due to the inability of the operator to keep the chicks comfortable and consequently they learn to crowd, which condition is very frequently fatal before it can be stopped.

The personal factor is also very much in evidence with the growing stock out on range. The operator must know just when he is giving the correct amount of ventilation and when to stop feeding milk and mash in order not to have his pullets lay too early and consequently moult. He should remove the cockerels, keep the coops free from vermin, and never allow the drinking supply and food supply to run out, else there will be trouble.

If the breeding and environment factors have been right and the personal factor efficient, the operator will have a fine flock of well grown and healthy pullets to move to the laying pens in the fall.

Here again the personal factor is in evidence. If it is efficient, the laying pens will be sweet and clean and the pullets will be moved to their new quarters in good time.

Then there is the question of caring for the layers. One man will have his pullets laying early and keeping up a steady egg yield during the whole winter. His pullets will be very tame and will always be busy scratching and singing merrily. He is the man who will be busy gathering eggs when they are selling at sixty cents per dozen.

Another man with equal opportunities as far as stock and environment are concerned will have his pullets laying erratically, being checked by every change in the weather. His pullets will not lay during cold weather. They will be wild and afraid of him, and will not be busy and singing, but will sit around in groups looking grouchy and dejected. These pullets will not produce nearly as well as will the others.

When the personal factor is efficient the attendant will always be on the jumps, busy doing some seemingly unimportant jobs, but which help to make the stock comfortable, while the inefficient attendant is sitting or standing about telling yarns or smoking his pipe to pass the time.

In fattening chickens the personal factor comes in also. Some men seem to have an intuition as to how to feed the chickens to obtain the best results. This was fairly well demonstrated in the Fourth Year fattening experiment.

Thus we see that the personal factor plays a very important part in poultry keeping and that it is well worth while for the poultryman to make himself as efficient as possible, and to give the closest attention to every detail of his business because only in this way can he attain to the highest degree of success.

CHRISTMAS'

The time draws nigh the birth of Christ;
The moon is hid; the night is still;
The Christmas bells from hill to hill
Answer each other in the mist.

Four voices in four hamlets round,
From far and near, on mead and moor,
Swell out and fail, as if a door
Were shut between me and the sound.

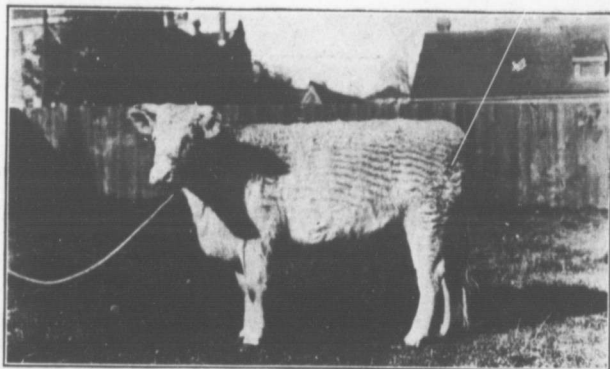
Each voice, four changes of the wind,
That now dilate and now decrease;
Peace and goodwill, goodwill and peace,
Peace and goodwill to all mankind.

—Alfred Tennyson.

Live Stock Sale at the O. A. C.

THE annual sale of pure bred live stock was held in the college judging pavilion on Thursday November 1st. A large crowd of prominent breeders and farmers from all parts of the province, together with some intending purchasers from other provinces and the United States, gathered early with the result that spirited bidding was in order. It may be safely said that never before has the college been able to offer to the farmers of

ous treatment the College gives to purchasers. Farmers are realizing that since this sale comprises animals of many breeds there are not enough of any one breed to attract many buyers from across the line, and consequently they obtain these fashionably bred animals at reasonable prices. The beautiful white yearling heifer Augusta Snowdrop that topped the sale at \$1,100.00 went to John Miller, Jr., Ashburn, Ont.



Augusta Snowdrop, of the Augusta family, that sold for \$1100 to John Miller, Ashburn, Ont.

this province such a fine collection of richly bred animals. These animal sales are becoming more and more popular owing to the fair and gener-

The Shorthorn as a breed continues to retain its popularity, nine averaging \$444.00; five dairy shorthorns averaged \$284.00. Below are the results:

BEEF SHORTHORNS.

MALE	PRICE	BUYER
Proud Champion.....	\$325.00	W. A. Galbraith, Iona Station
College Diamond.....	450.00	John Pagget, Sundridge
Lancaster Reserve.....	400.00	J. & E. Chinnick, Chatham, Ont.
Lancaster Pride.....	285.00	Albert Smith, South Woodslee
Augusta Jewel.....	275.00	Gibson, Bros., Bratton, Sask.
Lavender Royalist.....	200.00	John Miller, Jr., Ashburn, Ont.

FEMALES

Proud Lady Hope.....	365.00	Geo. Amos & Sons, Moffat, Ont.
Roan Lady O.A.C. 4th.....	600.00	E. S. Croxton, Angola, Indiana (with bull calf at foot)
Augusta Snowdrop.....	1100.00	John Miller, jr., Ashburn, Ont.

DAIRY SHORTHORNS.

MALE

O.A.C. Major Hope 2nd.....	135.00	Wm. G. McNaughton, Monckton
Major Maude.....	185.00	John Pagget, Sundridge
O.A.C. Darlington Prince.....	100.00	H. Watson, Brampton, Ont.

FEMALES

Puddington Solo.....	525.00	A. MacLaren, Buckingham, Que.
O.A.C. Waterloo Baroness 3rd.....	475.00	A. MacLaren, Buckingham, Que.



A cross-bred Angus-Shorthorn steer that sold to A. Barber, of Guelph, at 20c. per lb.

HOLSTEINS.

MALE

One month old bull calf.....	20.00	A. Barber, Guelph
Count Rattler Pontiac.....	250.00	W. J. Fraser, Streetsville
Sir Hengerveld Tensen.....	80.00	Fr:d Bagg, Hespeler, Ont.
Sir Pontiac Rue.....	100.00	C. A. Redding, Angola, Indiana

FEMALES

Daisy Posch Johanna.....	210.00	W. J. Fraser, Brampton, Ont.
Molly Rue Boutsje Lass.....	210.00	A. Gies, St. Jacob's, Ont.
Mercena Lassie's Pride.....	90.00	T. O. Dolson, Brampton, Ont.
Mercena Netherland O.A.C. 2nd.....	205.00	J. G. Sharp, Guelph
Beauty of O.A.C. 3rd.....	225.00	W. D. Gooding, Islington, Ont.
College Toitilla Rattler.....	175.00	A. Merryweather, Bridgeburg,
Molly Rue Rattler 3rd.....	152.50	School of Agriculture, Kemptville
Margaret Cornucopia 6th.....	90.00	J. H. Turner, Milton, Ont.

AYRSHIRES.

MALE

Floss 5th Masterpiece.....	70.00.....	J. Ballantyne, St. Mary's, Ont.
Soncie's Masterpiece.....	55.00.....	Jas. R. Fallis, Brampton
O.A.C. Minnie's Masterpiece.....	47.50.....	A. Merryweather, Bridgeburg
O.A.C. Daisy's Masterpiece.....	50.00.....	Arsene Denis, St. Marbot, Que.

FEMALES

Bud's Minnie.....	155.00.....	Jas. R. Fallis, Brampton
Floss' Guarantee 2nd.....	150.00.....	A. Merryweather, Bridgeburg

JERSEYS.

MALE

Dulcie's Astor O.A.C.....	75.00.....	W. R. Flatt, Waterdown, Ont.
Tapon's Noble.....	80.00.....	B. H. Bull & Son, Brampton
O.A.C. Reverence.....	55.00.....	Henry Martin, Port Carling, Ont.

FAT CATTLE

1 Shorthorn steer at 19c.....	A. Barber
1 Cross-bred steer at 20c.....	A. Barber
19 Yorkshire sows, bred to farrow in December, at an average of \$73.95.	
10 young sows sold at an average of \$37.50.	

Germs

BY PINUS MUGO

"WAS you acquainted with Lew Rogers, when you went to the College, down there at Guelph? They called him "Mule"—I dare say, because he was a stubborn, mulish chap, even to his ears."

Pete Rowley, the agricultural missionary of the county, replied that he could drag no such cognomen from his cold storage.

"How long ago is it, since he was there?" he inquired.

"A-a-hum, let me see.—It's six years since Harry Pine built his barn, and I mind, at the dance they gave, that they was roasin' Lew quite a bit about bein' a scientific farmer; and he had just finished his course that spring."

"I guess then that was just a shade before my time."

"Well I never did have no use for

modern farmin' methods, till he come home and started in to try out a few of the notions he'd gathered."

The district rep. smiled. He had heard of old Mat. Devlin's pre-historic tactics in the by-gone years, but had never been enough interested to dig out the circumstances surrounding his conversion. But one thing he did know; old Mat could grow excellent oats, and proved it, by garnering, annually, high honours for his horse feed. Moreover, his whole establishment advertised thrifty progress.

"No, siree! I didn't think them well-groomed professors at the Model Farm knew beans about actual farmin'. Of course, they scattered them perennial blue books, full o' undeniable sta—statistics, among us farmers; but as regards payin' interest and makin' the mill-wheel go—well, I thought

they didn't know how. And I'd heard that the College was nothin' more'n less than a matrimonial bureau, and a nest o' devilment for any young fellow as was fool enough to go."

"But, as you see", sweeping his prodigious paw around to the various signs of improved soil culture, "I've quit muckin'".

"But here I am, tellin' you about myself, when I started in to spin the bi-o-graphy of Lew Rogers."

Lew was a good chap, big, Herculean, and an old Nick to work. However, he had gotten a poor start. At twenty-four, he had been left the hundred acres next Mat's, with three healthy dents in it. There was already a small mortgage on the place, and he had had to put on more, to pay the shares of his two sisters as well; the farm was no Eden, having twenty acres of wet swale, and the back part cut up by a gravel ridge. So, you see, Lew wasn't in a box-stall.

He had "niggered" it for two years, with nothing more than hard biceps to show, and had reached that mental point, where many would express it in five elementary words, when he plodded up to the turn.

He was plowing the front field, one day, early in September. The ground was hard, and he was giving his puffing team its semi-round breathing space, when along cantered Del Robinson. Seeing Lew meditating against the plow-handles, she became inspired with desire to loose her ever-flexible tongue, so she pulled into the fence, and beamed down upon him.

"Hello, Lew!" she chirruped, "how's it going?"

"Rotten!"

"That's too bad".

"I suppose you'll be goin' back to school soon", he turned, non-desirous of dwelling on his lot.

"Yes, on the eighteenth"—She was a senior of Macdonald, this fall, and, as soon as Lew struck it about the Mac, plain Del hid behind a lofty tone and a conscious bearing.

"Why don't you enter the O.A.C., Lewis? I should say it would solve your agricultural difficulties, if you did. The training that you would imbibe there would fit you for the proper tilling of the soil." She further tainted her words with a patronizing smile.

Lew shoved back his soil-dyed straw, and turned over a fresh, juicy cud of Old Chum, several times.

"Say, Del, I believe you're right. One thing sure, I ain't goin' to get nowhere at the present rate".

"Gosh!—I was only joking".

"Well joke or no joke, there's sense to it."

She imitated a frightened clam, so battered was her well-practised poise, and, when Lew took a prolonged fit of extreme thinking, she grabbed the opportunity to jog along.

She saw him once, afterwards, and learned that he had procured a married man to run the place, and was preparing to honour the O.A.C. One thing she thanked her stars for: the Mac opened one day ahead, and, once there, she would be better able to stall off any of his rustic advances.

So she arrived at the station, on the morning of the eighteenth, secure in the fact. But around the corner strode Lew, fussy in a new, twelve-ninety-eight suit, and a pair of squeaky shoes.

Instantly, a heavy frost emanated from her charming person; but he had a long rain-coat on, and apparently, never felt it. With blushes and broncho feet, he lugged her grip into the coach, planted it beside his own, and shoved over the back of the next seat.

The disgrace! And yet more!

Half-way there, a classmate of Del's

boarded the train and of course—immediately spied the outraged Del. Lew was most gallant, and straightway robbed his pocket for three sickly oranges.

When they got off at Guelph, Del concocted a stratagem to outwit him, but he was so mucilaginous that he rode up the hill beside them. At the landing, he pressed to carry their luggage right into the hall, but a landslide of forceful negatives prevented him.

After lectures, one afternoon, at the beginning of the week, Lew outflanked Del. From behind a spruce, he swooped down upon her, among a group of co-eds, who committed the heinous crime of deserting her.

His promotion, from grubbing farmer to assimilator of knowledge, had introduced a foreign element, ambition, into his anatomy, and, moreover, had pumped fully fifteen gallons of hydrogen into it; the chief objective was—naturally—Del, a goddess slowly taking human shape.

"Good-day, Del!" he carolled, taking a stinging dab at his cristy.

A man-eating nod.

"Nice afternoon, ain't it?"

"It was."

"How'd y'u mean?"

She stopped, stamping her little pumps on the grass, and slammed forth: "Look here, Mr. Lew, I want you to preserve inside your head the fact, that the wider the space between you and me, the better I'll like it."

Lew wilted like a banana-tree in Greenland. Indeed, such was his stage of collapse, that Del pressed the soft pedal.

"It isn't that I don't like you, but we've seen more or less of each other all summer, and you know, a change is invigorating to everyone. I think too, it'll be much better for you", a

tiny smile tugging at the corner of her mouth.

He paddled his leaden feet beside her, for a little distance, then, slowly and mournfully, to the muffled beating of his heart, trudged back across the campus.

O cruel Fate, 'twas hard—a double dose.

Next evening, midst blood-thirsty faces, the severing Snip! Snip! of the shears carved Lew's luxuriant top-growth, to the accompaniment of shredded, unrepeatable words.

But you can't put a good man down.

The rugby squad boasted a husky new member, possessor of buttress shoulders and concrete head; Lew managed to make left scrim on the thirds.

Yes, and he raided a downtown tailor's, and was fitted for a blue serge; and he heartlessly peeled off a V for a pair of shoes; and more good shekels for a hat and gloves.

His external metamorphosis was complete—and all at the expense of his best Durham cow.

"Clothes don't make the man", said an old sage—a very old one. If you had never doubted that statement before, you would have, if you had seen Lew's internal displacement.

He launched another attack on the hall of "natural beauty", and, this time, Del was not displeased to learn that he wished to purchase tickets at the Opera House.

"Why, Lew, how sweet of you! Of course I'll go."

Alpha.

There followed an orgy of fussing, that gnawed so persistently at Lew's black pocket book and time for study, that he took feverish turns at counting and figuring, both in dollars and days. He simply had to jamb on the brakes.

"Lew", purred Del, one evening, soon after she had scented his doubled embarrassment, "I think you ought to get down to work. You don't want to fail you know."

Omega.

He now wooed his books and an all-gripping desire to strangle Willis, a certain dexterous third year man.— And his only sup was English.

The winter term bloomed and died; and, once more, the pleasant aroma of fresh-turned loam tickled his nostrils. Then came five months of sweat, sleep, and eating—and occasionally driving Del to church on Sunday evening—at which his neighbors were deeply disappointed, although it gave a new twist to the gossip.

He worked hard in his second year—there being no Sirens—and carried more away with him than his Associate Diploma.

One hot, Sunday evening, in July, a year later, Lew dangled his awry legs from a swinging hammock, on Robinson's lawn. Del operated a rocker. It was the one day of the seven that Lew's two, great, horny hands could idly seek some nook where they would be out of the way. Their manipulator, now, resembled them more; deep, easily-read lines rutted his grim, dogged face, with all college-accumulated spirit rolled out of it. Del had partially ossified, too. She was as desirable as ever, with that same old dash, but, behind it, was mobilized some ordinary sense and powers of judgment often lacking.

Lew had been gently haunting her presence all this time, but he could never decide that the psychological moment had come. Not only did he hesitate for economic reasons, but, whenever he adroitly led up to such a delicate topic, she more adroitly led him away, and tethered him there by

telling him that she would hate to live in the country all her life. So Lew had half-lost the notion, contenting himself with her as a good pal.

"You're becoming a regular grouch, Lew. What's the matter?" she inquired with a laugh.

"I know I am, and I'm likely to become more."

"Why?"

"Because I'm dissatisfied".

"How?"

"Well, I'm not making a fortune at farming; then those two years at college gave me a desire for more. I'd like to have my degree, and be in a position to do something—you understand—something big. What can I do here? U-ugh! Work like a navvy, trying to snail ahead, without attempting to be a cog in the wheel of progress."

"Ugh! Ugh! You're a great, big, warped stick, Lewis Rogers. Ugh! I'll say it again."

He gazed at her in limp astonishment.

"Where's your backbone? Decayed? Where's your brains? Buried under a furrow? You're a poor prune. Now do you understand what I think".

"No, I don't."

"Well then, ebony, here's what I think; you have the foundation to put you where you want; two years at the O.A.C., health, a scattering of brains, and a farm to work your theories out on.—Now do you understand me?"

"Perfectly."

"Do you still adhere to those whinings, I just heard?"

"No!"

"Well", looking at her wrist-watch, "you go home and sieep some ginger into yourself—and do something", extreme emphasis on the last two words.

And he did.

He strained his brains, back, and credit to the limit; he fed and squeezed that hundred acres, now completely drained, to a wise degree. He built up a herd of Holsteins that poured white fluid; he introduced No. 72 Oats at a jingling profit; and he made "Elmdale" a model, as well as a paying, piece of ground.

Nor did he stop there. He talked, argued, and proved the merits of improved farming; he popularized pure bred stock and better strains of grain; he organized and rivetted a co-operative club; in short, he "delivered the goods", with an unrefutable guarantee, his own experience, to back it.

Mat Devlin applied a match to his cold corn-cob.

"You see, now, how it was I started farmin' 'long up-to-date lines. I saw it paid Lew Rogers, so I thought it ud pay me; an' it has."

"But what about Del"? interposed Pete Rowley.

"Haw! Haw! I see you're interested in the women too. But you don't appear to know much about 'em. Do you mean to say you don't know what became of her after being chief instrumentor—and, anyways, you know their nature. Why, of course, she married him. Yes, Sir! Lew not only became a successful farmer, and a leader of the district, but a family man as well."

Christmas Days Famous in Canadian History

THOSE of us who have made any study of Canadian History can recall with much interest some of the dates and the stories connected therewith. The name of Christopher Columbus will ever be recalled as the name of a hero, that of Champlain as a great explorer, but our history really commences with Jacques Cartier's second trip to Canada in 1535—three hundred and eighty-two years ago. He came to take the country for his king, and we can recall a little of his description of the land then so little known. He described the St. Lawrence as grand, broad, extensive and fruitful beyond measure, and the country lying beyond as abounding in fertility.

We picture his vessel before Strathcona, where his men are making preparations for winter. He himself had gone on, to Hochelaga. Late in the

fall he returned, but by Christmas we have a dismal sight. Four feet of unaccustomed snow covered the ground, drinkables were frozen in the casks, scurvy had broken out and they, apparently were helpless. The Indians had grown suspicious, and means of frightening them away had to be adopted. At a little distance in the woods a shrine of the virgin had been set up, and there they went in procession to pray for help in their extreme distress.

Such was the situation of the first Canadian Christmas. Darker ones have come and gone, but few have witnessed more hardship and suffering or courage and endurance.

Two hundred and twenty-five years later another Christmas again at Quebec, marked the passing of the power of the French Monarchy in Canada. Wolf had completed his work. The

English held Quebec. Canada had been practically won to England. Winter forced the ships to retire to Halifax. Montreal was still in the hands of the French, and it was expected that during the winter they would try to retake the citadel.

Only 7,000 British troops had been left at Quebec and by Christmas less than five thousand were fit for duty. Again the winter sickness had proved too much for medical knowledge, and sanitary conditions of the times. Wolf's army had marched into a ruined town. Houses and churches had been shattered. Lodging was difficult and food scarce. What wood that could be secured was hauled in by the highlanders on sleds. The working parties were protected by body guards. The good nuns nursed English and French alike, and knitted socks for those in need.

It was expected that the French would attack about Christmas time. The town could not be defended. It was well nigh in ruins. Attack did not come and the spring saw England's supremacy everywhere recognized.

It seems rather extraordinary that the next epoch in Canadian History should be marked by a siege on Quebec, but it was so. These three victories, French against Indian; English against French, and British against Americans determined the racial and national characteristics of all Canada. This third Christmas in 1775 was a third time of anxious waiting and watching at Quebec.

All over the American continent the Americans had been successful. Could Carleton hold Quebec against Montgomery. He arrived in front of the city, Nov. 13th, but he did not receive the help from within the city that he expected. An American deserter informed Carleton of an attack planned

for Dec. 23rd. That night, the next day and Christmas eve were spent in steady watch. On Dec. 30th it came. Montgomery was defeated and the subsequent withdrawal of the Revolutionary forces.

Yet, Quebec was but a key to Canada. The success of the American War of Independence determined the founding of a great British Province—Upper Canada—Ontario. What was to be done with the Loyalists who had fought a losing fight for England. They could not remain in the United States. A great many were settled in Nova Scotia and New Brunswick, but many remained. The Governor was perplexed to know what to do with them. After a great deal of deliberation, forethought, and consideration he interviewed a prominent man in Kingston who maintained that things would grow in Upper Canada. Five vessels were secured and this little band sailed from New York, up the St. Lawrence to Sorel, arriving in Oct. 1783. Here they built their huts for winter. Peace they had, by defeat, and nothing else save courage and faith in God. They needed both. What a Christmas was that of 1783 for the U. E. Loyalists. It was anything but cheerful. The winter was one of insufferable length and coldness. The country they faced bore a few inconsiderable spots to cultivate, it was a land covered with a spongy moss instead of grass, it was a region of a dense wilderness, swamps of venomous reptiles and beasts of prey, but History opened to a beautiful and sunny, if a strenuous future.

The Christmas of 1792 saw Alexander Mackenzie on an advanced position on the upper waters of the Peace River, making possible a dash for the coast in the spring which gave the Pacific Province to Canada.

The next great Christmas event in our History did not happen in Canada. There were no battles to fight, no mountains to climb, no Canadian cold, but there were illness and disgrace to be faced, and of all the courage and devotion that have gone to the making of our country none surpass—scarcely equal—Lord Durham's devotion to Canada during the Christmas season of 1838. He had been recalled from the Governorship of Canada by his political enemies, leaving Canada in a state hardly pacified from the rebellion of 1837. He arrived in England Nov. 1st, and as much as he wished to go to his home, he stayed busily at work until the middle of January, preparing his report for Parliament. The Report which not only saved Canada to the Empire, but which established the British system of Colonial Self-government.

This was not the only Canadian Christmas spent in London. Sir John A. McDonald, and the Canadian representatives met the Federal House

in 1866 from Dec. 4th to the 24th, to present the question of Confederation in Canada. It was inevitable and their business was brought to a close the day before Christmas with the satisfaction of anticipating the passage of the B. N. A. act, which established the Constitution of Canada on July 1st, 1867.

Thus Christmas days come and go. Lord Selkirk saw some troubled times following 1814, during which the North West was turned from a low producing to a grand producing country. Many others have been spent on the trails, building roads, prospecting, finding out what their inheritance was. We may ask what shall history write of the Christmas to come. Be that what it may, we can ask nothing more than that we be permitted to live in the spirit of those former Canadians who in fort, on the trail, in government halls, or on the battle fields, have marked so many previous Christmas days with imperishable memorials of service, devotion, achievement and patriotism.

Rules and Regulations Regarding the Sending of Food to Prisoners of War

In co-ordination with the new scheme instituted by the British Government all parcels from Canada to Officer Prisoners of War interned in Germany or Austria-Hungary, containing foodstuffs, on and after January 1st, 1918, **can only** be accepted for onward transmission by the Postal Service if they bear a "coupon" issued by the Prisoners of War Department, Canadian Red Cross Society, London, England.

Under the new arrangement the amount of foodstuffs which may be

sent to an Officer Prisoner of War during four weeks must not exceed one hundred pounds. Of this total the Prisoners of War Department of the Canadian Red Cross will send to each interned Canadian Officer including those attached to other than Canadian units not less than six ten pound parcels each four weeks. The remaining forty pounds of foodstuffs per four weeks may be sent personally by relatives in Canada, but each parcel must bear a coupon which can be ob-

tained on application from the Prisoners of War Department, Canadian Red Cross Society, London, England.

The right to send food parcels to an Officer Prisoner of War rests with the next of kin, but may be transferred by the latter or by the Prisoner of War himself to any person. It is advisable that application should be made to the Prisoners of War Department, Canadian Red Cross Society, London, England, for the necessary coupons for parcels packed personally at the earliest possible moment.

These coupons are to be used on food parcels only and no coupons can be issued for amounts under ten pounds. If, therefore, it is desired to despatch a parcel weighing less than ten pounds an ordinary coupon must be used and the parcel counts as one of the four permissible in four weeks.

Articles may not be sent to any Society for enclosure in any parcel despatched under the Red Cross label. The importance of guarding against any misuse of the label cannot be too strongly emphasized. Such action would not only harm the Prisoner to whom the parcel was addressed but would react on other Prisoners and

might endanger the whole system of despatching the food supplies to Officers and men who have fallen into the hands of the enemy.

Parcels for Officers interned in Bulgaria and Turkey come under the new scheme. Owing, however, to the difficulties of postal communication, it is not advisable to send many parcels to officers in Turkish camps. Supplies can be purchased in Asia Minor and it is better to remit money to the Prisoners rather than send many parcels.

This new scheme relates only to parcels containing foodstuffs for Officer Prisoners of War interned in enemy countries and does not affect in any way the present regulations governing the transmission of parcels to Prisoners of War other than Officers, which regulations remain unchanged.

The needs of Officer Prisoners of War holding commissions in the Imperial Army are looked after by the Central Prisoners of War Committee, 4 Thurloe Place, London, S.W., England. This Committee will supply the necessary coupons to the next of kin of these Officers for parcels addressed to them which are packed personally.

Powdered Milk

E. H. PARFITT, '18.

IT is only within the last fifteen years that milk powder has been manufactured on a commercial scale. It is one of the newest branches of the dairy industry and a very promising one.

Fluid milk is bulky, expensive to transport and under normal conditions remains fit for human consumption but a few days. Powdered milk is concentrated, easily handled, and transported, and remains fit for human

consumption for at least six months. Skim milk powder remains in good condition for a much longer time.

There are several methods used in evaporating the water from fluid milk. One of the first used is the "Just" process invented by John A. Just, of Syracuse, N.Y. The milk is dried on iron cylinders, which as they revolve are given a thin coating of liquid milk. The heat conducted from the inside

drives off the water and leaves a solid dry layer which is removed by scraping knives. The strong point of this process is its cheapness, but the powder so obtained carries a burnt taste and a taste of iron. The solubility of the milk powder is affected owing to the high heat the milk is subjected to on the rollers. This process was patented in Europe where it was known as the "Hatmaker" process.

Another method known as the Campbell process, which consisted of blowing warm air through the milk till it became thick, then exposing it to a hot blast. This left the milk solid in a dry, lumpy condition. It was then taken and ground into powder. Objections to this process were the burnt taste and bad flavors which were brought in by the air.

The process which is producing the best results today, and the one used in the modern evaporators, is the "Merrell-Soule" process. Its fundamental principle of dessication is the spraying of milk into warm air. This idea was patented by Robert Stauf in 1901, but it was not till June 1905 that the Murrell-Soule Co. purchased the patent believing it to be the basic principle of this new art in dairying.

The claim of the patent describes the process in the following manner: "Process consists in converting the liquid milk into a fine spray bringing the spray or atomized liquid into a regular current of heated air so that the liquid constituents are completely vaporized, conveying the dry powder into a suitable collection space away from the air current and discharging the air and vapor, separately from the dry powder."

After operating for about a year under the Stauf patent it was found that it was a great economical advantage to condense the liquid milk in

condensing pans in a vacuum before spraying into the air current. By this method a far better product was obtained much quicker and with less heat. This step was patented in July 1907.

This process is adaptable to the dessication of a great variety of milk products. The first tried was skim-milk or separated milk and was very successful. This powder keeps well, is readily soluble in water and has no objectionable flavors. It comes upon the market today by the trade name "Klim" 'milk' spelled backwards. There was much trouble with whole milk. Though easily dried it spoiled quickly in the powdered form by turning rancid. After much research the factors which produce rancidity were determined and today there is a whole milk powder upon the market which will keep from six months to a year. There is also a cream powder containing seventeen per cent butter fat which has also been put upon the market lately.

Heretofore creamery buttermilk has always been a waste product, at its best a chicken and hog feed, but by this process it can readily be changed into an article for human consumption. It differs from skim milk in its higher percentage of butterfat and its high percentage of lactic acid which adds considerable to its value in baking.

Milk sent to evaporators must have every care taken of it. The Canadian Milk Products Co., which has four factories in Ontario require healthy cows, barns in good condition and white washed at least twice a year, milk delivered every day with a low percent of acid. The reason for extra care is that water forms about 87 percent of fluid milk and by concentrating it the slightest degree contamination is greatly magnified.

The control of bacteria is important. It has been found in order to produce a satisfactory product that a low bacterial count is necessary up to the time the milk is dried, and because of this all milk previous to entering the condenser is pasteurized. When dry there is little or no bacterial action, in fact it has been found that bacteria slowly dry off in the dry powder due to lack of moisture. The amount of moisture in the milk powder being only the water of crystallization of the milk sugar.

Milk dried by the spray or Merrell-Soule process retains all its natural properties. On the addition of water it goes back to its original state. There is no sediment, the casein retains its colloidal structure, the albumen is not coagulated, the butter fat is a complete emulsion in its natural form, the enzymes are still active and as far as

we know it is identical in properties with the original milk.

The uses for powered milk are many. Skim milk used by bakers for bread, biscuits, cakes and custards and in places where whole milk is not obtainable, as in the army and navy. The ice cream manufacturer uses skim-milk powder for giving "body" and smoothness, and cream powder for richness. The confectioner uses whole milk and cream powders for caramels, milk chocolates and fudges. Certain grades are used in prepared flour for pancakes and biscuits.

It was natural that food manufacturers should be the first users of powdered milk. They consider the cost, quality, flavor and uniformity. For these reasons dried milk appealed to them. It is now upon the market in small quantities for the housewife and for the same reasons it will appeal to her

Tile Drainage in Wartime

The Tractor-ditcher versus the Tractor-plow as the factor in Greater Production.

BY V. C. LOWELL, '19

IT is probably a safe estimate to say that the majority of the farmers in Ontario are agreed that underdrainage is to a greater or less extent a paying proposition. While a great deal has been done by the Agricultural Department during the past number of years to demonstrate the benefits of land drainage, it needed the "Powers of the Air" to drive the arguments home and bring conviction. The difficulties under which most farmers have labored during the past three seasons owing to abnormal rainfall have pretty well proven that the farmer whose land is even partially drained holds a tremendous advantage over his less for-

tunate neighbors, whose lands, it may be, are quite similar in other respects to his own. So convincing, in truth, have been these natural demonstrations, and on such a great scale, that, but for our proneness to forget the lesson, further admonition on the part of the men in drainage work might appear almost superfluous.

Stimulated, however, by the appreciation of what might have been, farmers have engaged in carrying on drainage operations during the past year and a half on a scale perhaps never before approached in the history of tile drainage in Ontario, and in the face of greatly increased costs of all

elements of labor and materials. Almost universally tile yards have had their stocks depleted early in the season, and orders are often weeks and months behind. Travelling through the townships of Western Ontario one would be rarely beyond hearing the "chug-chug" of the traction ditcher, while the call on the college for assistance in making drainage surveys far exceeded its powers to comply.

A question frequently in the minds of most farmers is this:—"Granted that under-drainage is a really profitable undertaking, to what extent does that justify me in underdraining my fields, especially now when everything is so expensive, help scarce, and all spare men and money so urgently needed in carrying on the war?"

This is a question that no longer concerns the individual farmer alone; it has become part of the big question of increasing national production—a question of pressing importance to each one of us. War has brought all people closer to the "sources of life" where such questions loom large in the problem of the wherewithall of our next day's meals, for ourselves as well as for the men in the front lines. More food is required. This, in popular interpretation means more acres under cultivation. More acres under cultivation means more labor, and at a time when man labor cannot be had. Here we are fronted by a seemingly impossible proposition. We may well ask, then, "In view of this is the extra labor and cost of tile underdrainage, or any drainage, for that matter, justifiable now, and if so, to what extent. Would not the time and cost be better expended in turning over new acres as far as possible and thus solve the problem direct?"

The call for increased acreage has been one of the rally cries in the Food

Production Campaign, and there is no doubt it is of prime importance in bringing about the results required. In this connection no one can overlook the immense assistance that has been rendered by the governmental use of traction ploughs. But it has been difficult to get enough of this help, the elements of cost for this operation are large, and it will increase the demand for field help next season when the laborers are already few. There is also a limit to the number of extra acres the average farmer can or should place under immediate cultivation and not seriously disturb the properly systematized rotation and balance of crops. The time and labor element alone attending the preparation of the land and the production and harvesting of a crop on even a small extra acreage is very considerable and has, in many cases been physically impossible. On new lands especially the resulting crops are always uncertain, being subject, among other things, to unbalanced soil conditions, the presence of insect pests and weeds, and requiring several seasons to bring into profitable productivity.

On the other hand there is the alternative of producing the required increase from fields already in the regular circle of rotation, at the same time maintaining undisturbed the necessary hay and pasture lands, yet producing this increase by the use of less land, less seed, and less labor.

A large amount of careful experiment by scientific agriculturists both at home and abroad, as well as years of "practical experience" have given us indisputable evidence that the miracle of producing the proverbial two blades of grass where but one grew before can be nearly duplicated by the prosaic and rather muddy expedient of underdrainage. The working out

of this evidence forms one of the most interesting chapters in scientific investigation, which it is not, however, the field of this article to relate. Sufficient to state that by this simple means new powers are drawn from sun, air, water and soil, softening the rigors of our uncertain seasons, lessening man's labor and risk of loss, and heaping to overflowing the empty or half-filled measure of his harvests. If this be true; if from the single acre the yield may be nearly doubled with no more labor or seed is it not a factor in present production well worth consideration?

"But," it will be objected, "the cost of tiling will perhaps equal or exceed the value of the crop and only serve to complicate labor." What are the facts? It has been well determined that under average conditions the cost of the **most complete** system of drainage will pay for itself out of the increased yield of four harvests, mounting up in increasing rates as year follows year. But under the conditions that have prevailed in most of Ontario during the past three years the cost would have been paid out of a single crop—a return of "bread" for the price of a "stone." To under-drain an average acre costs from fifteen to thirty dollars; the returns will exceed that amount. Furthermore the work of drainage may be carried on at a season when little other field work is possible, multiplying energy, as it were, for the growing time of the year.

If it were only to leave undisturbed the already complex work of the farm, underdrainage as a means of increasing production would be for that reason alone most valuable. But when to this we add the great saving in labor in plowing, seeding, cultivating and harvesting the smaller acres need-

ed to produce the larger yields, the argument stands doubly sure.

The evidence, then is that complete farm drainage, even under the present trying conditions is justified by the returns, and that the laying of perhaps four to six miles of tile per hundred acres may well be an immediate and economical method of producing more food at less expense.

But it is not required for the largest immediate returns that underdrainage be extended to such limits. While it is true that hundreds of thousands of acres in Ontario would fully justify all this attention, there are even larger acreages where the expenditure of but a fraction of this effort would bring such areas of our best land into splendid production where nothing has been had for all the expenditure of time, labor, seed and money during each of the past three or more years. Thus may we turn actual loss into tremendous gains. A few lines of tile are often sufficient to bring many acres of waste land into finest condition; one or two-mains of proper size, grade and depth, costing a minimum of effort to install will in thousands of forms make possible **and immediate returns** from waste or half-used, though rich lands, and at the same time lay the foundation for complete and satisfactory drainage as may be desired. The farmers of Ontario can do no better work towards winning the war than by carrying on the drainage work so well begun, and towards this end the faculty at O. A. C. are ready to cooperate as far as possible in giving definite accurate information.

"We have but five loaves and two fishes . . . and they that had eaten were five thousand men . . . And they took up twelve baskets of fragments."

Another Side of Greater Efficiency

BY R. C. ELDER, '18

FOR some time I have been watching the growing interest of city people in rural problems. Some farmers are inclined to throw aside these advances with contempt, but the majority appreciate the new sympathy which has been shown in their work.

Many things have been suggested to increase Canada's food supply, they vary from plowing up Queen's Park, Toronto, to providing farm labor at \$1.10 a day from factories, the usual wage to be made up by the city employer or from a patriotic fund for the purpose. Providing farm labor below the current rate of wages is simply a very plain way of admitting that at the present price of farm produce farmers cannot pay \$5.00 to \$6.00 per day (minus board) which is now so common for munition workers. Farm boys continue to go to the city and food prices continue to soar. You may urge them to return to the farms, but when you think of it, why did they leave the farms?

Canada is a new and comparatively undeveloped country. Workers and not land is the limiting factor in production. It is the price of labor which determines the cost of production. It is this which has led Canada to sacrifice the fertility of the land by heavy cropping for maximum returns per worker. The idea that we should break up every available foot of land no matter what the cost of production is erroneous. Most farmers are pasturing more and more of their land and as labor becomes scarcer they will continue in spite of all that may be said or done.

Cheap farm labor will never solve the farmers problems. By the very

nature of their business, farmers are skilled workmen rather than employers, or business organizers. When the price of farm labor drops, the value of his own work diminishes in the same proportion. Diversified farming will never employ a great number of unskilled farm labourers to good advantage.

Among things which have been done which will help agriculture are the forming of co-operative associations for the sale of Ontario's 1917 wool and possibly placing farm tractors throughout the country although the following paragraph from the Warren's Farm Management may throw a new light on its use in the more hilly parts of Ontario. "Many attempts have been made to introduce engines in the Eastern States, but such efforts have not usually been successful. In the Northeastern States, the hay harvest determines the number of horses that must be kept. Mowing, tedding, raking, and hauling in hay are all light, rapid operations. For some of this work a light team is as good as a heavy one. An engine is too powerful and cumbersome for these operations. There is no economy in having an engine for plowing if the same number of horses must be kept anyway, and are standing in the stable while the engine works."

Farming is conservative, response to the stimulus of changing conditions is slow because it takes a full year to complete even the shortest operation and to bring a horse or cow to greatest efficiency requires from five to six years. Is it any wonder, therefore, that farmers are slow to change their methods to suit conditions of indefinite duration. At present most farm-

ers in Ontario have steady employment the year round for nearly all the labor needed at any one time. But if we changed the methods followed, if we would have the farmer increase his grain crop at the expense of pasture we at once disturb the balance of work and we are confronted with a "between season period." The great reason why the farmer appears to want seasonal help is that inexperienced labor can only be used to advantage in such operations as seeding, haying and harvest where the same routine lasts for a few weeks. Between these periods the farmer clips his sheep, builds fences, works in the apiary or markets the grain which he may not have needed to feed his stock, and so on, according to the type of farming; all of these tasks are unsuited for inexperienced help. Ontario Agriculture should be changed radically but I do not believe the solution lies in the idea that "the advantage of owning a small farm compared with dependence on uncertain employment on a large one, will appeal to a growing number from year to year" or that "It makes for national and political stability for every farmer to own and cultivate his farm." Statistics show that in New York state farmers who have less than \$5,000 capital are not making hired man's wages and further that in mixed farming districts farms of about three hundred acres of workable land were invariably the most profitable.

Yet the farmers are prosperous, are buying cars, are getting rich, I should say by saving rather than by a large income. If his city brother had to live similarly he would soon save enough to buy the coveted automobile. Very small grocery orders delivered twice a day, the theatre, more expensive clothes, and the little luxuries soon run away with the larger in-

comes it is true, but why should we ask the farmer to do without, if they are in good places in our cities. We have feverish activity in other lines besides making war materials because people are spending in proportion to their earnings. It is obvious that this is detrimental to national efficiency. Spending wisely is even of greater importance than earning, for only in spending our money do we consume the national resources.

What are we going to do about it?

Government control of food prices may help, but if fixed too low will drive more people from the farms. To be fair we must also control manufacturers' profits. If prices are fixed unfairly a reaction is sure to follow. If carried out consistently the result will be fair to all. But who will have the superhuman intelligence for the work? The state socialist will see in this a long stride towards the realization of his ideals. But what has this to do with increased efficiency? Simply this—that for greatest efficiency the nation has to be thoroughly organized. It seems we must learn something from the German on national organization. How shall we accomplish this end without adopting his method? How can the people do this for themselves?

If we look about us we find that competition is gradually and surely giving place to organized capital and monopolies, followed by labor unions to meet these on their own ground in their own way. Doctors and dentists have agreed on fixed charges for their services and lastly farmers are beginning to ask a price instead of selling for what they can get. This is as it should be, for if every one demands his price he will be paid according to the value of his services. He who is of least use to society will be the first

to have to accept what others deem his services are worth. Prices may soar, but not beyond a fixed limit where a further advance would be detrimental to everyone.

How then are we to increase national efficiency? By assisting co-operative organizations for the sale of all products, by encouraging labor unions

and associations of professional men, and by supporting societies whose object it is to help its members when in need of financial or other aid. This may be a slow process but the evolution of civilization is not accomplished in a day. In the meantime let us spend our money wisely not for ourselves but for our country.

The Future of the Farm Apple Orchard

By A. J. GRANT, THEDFORD, ONT.

(Ex. President Ontario Fruit Growers Assn.)

THE production of apples in Ontario is very largely in the hands of the farmers, as nearly every farm in the older portions of the province has an apple orchard attached. In many instances the idea of the man who planted was to have an abundance of fruit for his own use and perhaps the fact that commercial possibilities were not considered, accounts for many of the problems which the farm apple orchard presents to-day. Many of the plantings are much too large for home purposes only and yet not large enough to commercialize, so that in these stirring times when the agriculturist has to fight insect pests on every side and nearly every man is trying to do the work of two, the average orchard is very liable to become neglected.

It is indeed painful, to those who have the interest of this important branch of agriculture at heart, to witness the gradual retrogression of the average farm orchard throughout Ontario. In every apple-growing section may be seen orchards which are being cared for, standing like oases in the desert, to gladden the heart of man and incidentally return liberal profits to the owners. Most of these are being operated by farmers and consist-

ently producing good crops of fruit. Then we might reasonably wonder why we have the neglected orchard problem on our hands.

The whole history of agriculture, in all its branches presents a never ending change of conditions and methods with new lessons to be learned with each successive season. Apple orcharding is no exception to the rule and has perhaps, been afflicted with a greater variety of enemies than many other branches of farming. The successful farmer has kept up with the times in all the profitable branches but in most cases his apple orchard covers such a small acreage that it will not pay him to have the necessary equipment to look after it properly and give it the necessary attention, at the proper time.

A few short years ago, it was quite a usual thing for the farm orchard to produce a large crop of fairly good apples without much attention on the part of the owner. He sold the crop, usually on the trees, to some itinerant buyer, boarded the mén, drew the apples and regarded the money as a sort of "find". These days are gone and the spectacle of a neglected orchard producing a large crop of apples fit for

anything but the cider mill, will not likely be seen any more, in this part of the country anyway. We have about all the known pests with us—and then some, so that the fellow who is going to produce a good crop of apples with sufficient regularity to keep himself out of the hands of the receiver, must of necessity understand apple orcharding fully as well and perhaps a little better than he understands the other lines of his farm work.

pecially true of spraying. This operation is an absolute waste of time and money unless done thoroughly, at the right time and frequently the "right time" is confined to a couple of days in the spring or early summer when many other things are calling out for attention. The farmer who would leave a field of clover hay burning up with the sun while he occupied himself with some other task would have a pretty poor sample of hay and so



Is neglect not in evidence here? Lack of time prevents the average farmer from properly caring for his orchard.

This is quite possible for the man with an orchard sufficiently large and well enough situated to make the game worth the candle and my advice to any intelligent farmer with an orchard of at least two hundred trees, well located, is to get right after it and make it one of the branches of his farm work. It is not sufficient to make the orchard a haven of refuge for the hired help when there is nothing else to do, but it must receive attention at the proper time. This is es-

pecially true of spraying. This operation is an absolute waste of time and money unless done thoroughly, at the right time and frequently the "right time" is confined to a couple of days in the spring or early summer when many other things are calling out for attention. The farmer who would leave a field of clover hay burning up with the sun while he occupied himself with some other task would have a pretty poor sample of hay and so

the farmer who sprays his orchard when he is ready, and not when it is needed must expect very poor apples, and he has been getting this pretty regularly for the past few years until the present season, when he got none at all as a penalty for his neglect of the trees for several years past. Spraying requires some experience. How frequently do we see adjoining orchards that have both been sprayed; the one carrying a beautiful crop of seventy-five to ninety per cent clean fruit and

the other perhaps thirty to forty per cent clean. In the former case the spraying was well done and in the latter case poorly done.

It is only fair to say that there is other work which can be done almost any time and in this way provides employment during periods which might otherwise be slack. In my experience, pruning of apple trees may be done during the late fall and winter, very successfully. With the exception of an occasional very cold day the work is pleasant and if working in an orchard which requires some scraping of the trunks and large limbs there is always this job for the pruner to fall back on, if he wishes to generate a little bodily warmth. Pruning is an art, very readily acquired, with a little instruction, by most men of good judgment, but the tendency of most of us is to confuse it with lumbering operations and cut too freely of large limbs. Nature intended that apples should grow in the middle of the tree as well as the outside and the head should be thinned out so that this fruit may get the sun. Most of the work should be done among the small limbs but it will be necessary to occasionally cut a large one. The preservation of sucker growth in the body of the tree is most important. Too often we see the limbs stripped of its new growth until the middle of the tree is entirely devoid of fruit spurs, all the apples being carried in bunches on the ends of the few main limbs.

Drainage is a most important consideration. Apple trees may worry through with "wet feet" for twenty-five or thirty years, but just when the trees should be in their prime they will deteriorate in spite of everything, if the land is inclined to have a wet subsoil. A few tile will pay for themselves many times over and save many

an orchard from an untimely death.

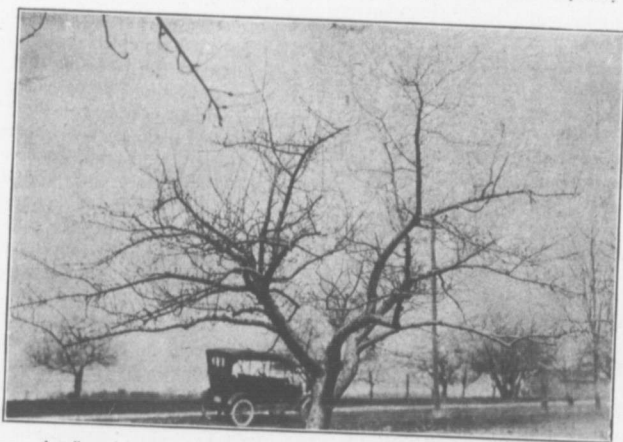
You can't grow apples without manure. Turning under good clover sod with the assistance of some chemical fertilizer is good, but nothing will produce better results than liberal applications of good barnyard manure. In spreading keep at least five or six feet away from the trunk of every tree; there are no feeding rootlets in this area, and the manure is practically wasted. How often do we see the reverse idea—a neat little ring like a large wagon wheel, about each tree;—very ornamental, but practically useless. Spread a complete layer in the space between the trees, in this way covering the ground occupied by the feeding rootlets. When you think you have applied enough then put on as much more. Don't study economy in manuring any more than you do in spraying; use plenty of material so long as you know where to put it to get results. Your old orchard no doubt needs fertility fully as badly as many other things.

Cultivation is, generally speaking, a vital necessity and I am quite convinced that you will get the most and the largest apples by keeping a dust mulch on your orchard until the middle of July and then sowing some rapid growing crop in order to check the moisture and allow the new growth and buds to toughen for the coming winter as well as give the fruit more color. Allowing the trees to stand in a strip of sod about ten or twelve feet wide and cultivating the balance of the ground saves much labor and in my limited experience seems to produce good results. A great deal has been said of late in favor of the system of sod mulch and in fact one of my own orchards is being worked on this plan, but only a very porous sandy loam is suitable for this method and

then I am not so sure that some apples are not sacrificed for the sake of very high color and finish. Fewer apples of extra fine quality may make you more money under certain conditions. Especially is this a fact with fancy box trade. The danger of this plan rests in the fact that it entails a little less labor than cultivation and the idea is even now going the rounds in some districts that leaving the orchard in sod is quite the proper thing to do and there is a vast difference between

great many growers are quite proficient in the work. The old practice of grafting at so much per scion should not be tolerated, neither should the scions of different varieties be mixed up in a basket so that the artist may show his miraculous skill in identifying the different woods. Pay a man well for his work because it is a particular job, but insist upon sufficient pains being taken to give you a satisfactory result.

The above looks like a pretty large



A well cared for apple tree, showing it is not beyond the possibilities of some farmers to make orchard improvements.

the sod mulch system, properly worked and simply leaving the orchard in sod, not to say anything of the matter of soil conditions.

Inferior varieties, we always have with us. Like good cows and poor ones, which require the same feed and care, so good varieties of apples and poor ones require the same attention. Then why not have all good ones? This can readily be accomplished by grafting and the process should be in much more general use. There is nothing mysterious about grafting and a

order of work for a busy farmer, but it is no more than the regular routine of many in this province who are making a success of apple growing. The fact is fully apparent that the general rank and file of our farmers will not undertake it either because they have no taste for the work or because the orchard is too small to make it profitable to invest in a spraying outfit and become conversant with the requirements. Then what is going to become of the hundreds of small orchards throughout the country? The past

three years have taken a terrible toll by the prevalence of scab and only the most persistent care, from this out, is going to produce clean fruit.

Men are to be found in most localities who could make a success of the business if sufficient number of trees were in their hands to make it profitable. Splendid returns are to be had from leasing these neglected orchards for a term of years and rejuvenating them. Many large growers in Ontario make a practice of leasing orchards with great success and a general application of this principle would do much toward keeping our apple industry where it belongs. This province is splendidly endowed with the natural facilities for the production of high class fruit. The market demands quality and the time has arrived when quality can only be produced by a knowledge of apple orcharding, properly applied. The lessee should not

be expected to pay a large rental as he will have to spend a lot of money in putting the orchards in condition and then take all chances on crops and market conditions. Fifty to seventy-five cents per tree per annum according to location and condition, is a fair rental for a five or six year term and will make more money for any farmer who is not taking care of his orchard as well as the gain of having it put into condition.

The co-operative association has done much to stimulate an interest in the farm orchard, chiefly by providing a better selling outlet, but the experience of the past few years has discouraged a great many of these organizations and the time would seem to be ripe for some campaign to invigorate many of the associations which have ceased operations altogether.

Report of Conference of Potato Growers and Specialists

Northern grown seeds, diseases of potatoes, and improvement work were discussed.

CAN yields in our potato fields in Old Ontario be greatly increased by the planting of seed grown in Northern Ontario? To what extent have dangerous diseases become established in our potato fields? How best can the potato industry of the Province be profitably developed? These in short, were the important questions which were discussed at a conference of potato growers and specialists on October 30th and 31st at the Parliament Buildings, Toronto, by the request of Dr. G. C. Creelman, Commissioner of Agriculture for Ontario.

Every phase of the industry was discussed but those receiving special attention were the desirability of northern grown seed potatoes and the spread, injury and control of several comparatively newly discovered diseases which have apparently become widely established in Old Ontario. To secure accurate information regarding these questions an investigation was made last summer by the Ontario department of Agriculture. Farmers were visited in every potato growing district in New Ontario and in the three counties in Old Ontario where pota-

atoes are grown most extensively. In each case a thorough examination of the growing crop was made.

At the conference the results of this investigation were given. Briefly summarized the report was as follows: While but one case of leaf roll was found in Northern Ontario this disease was prevalent in all districts visited in Old Ontario. In only two fields in these latter districts was none of the disease observed, in several the percentage was not large, but in many over 50 per cent was found. Since 8 per cent. is considered by pathologists to be very serious and as plants diseased with leaf roll yield but one half to one third a normal crop by weight, and the tubers from such hills are mostly unmarketable, this prevalence of disease, it was thought might account for Ontario's small average yield during the past 35 years of 116 bushels per acre.

Mosaic seems fairly evenly distributed over the whole Province but the percentage is small. It is not so serious a disease at present as Leaf Roll and has not yet greatly reduced yields. Immediate steps must be taken, however, to arrest its development and spread in the Province.

None other of the so-called physiological diseases were observed to any extent in the Province and apparently have not yet become established except in isolated cases.

Blight is much more prevalent in Old Ontario than in the North while the Colorado Beetle is not at all established in two northern districts.

All told, four times the amount of serious disease and ten times the amount of less serious disease was found present in Old Ontario as in Northern Ontario. Throughout the North, generally, the crop was also much more vigorous and far later yields prevailed.

So far as the investigation was carried there can be no doubt that it proved Northern Ontario to be far superior to Old Ontario as a source of first class seed potatoes. The districts which appealed most to the investigators as sources of seed supply were as follows: Thunder Bay, Algoma, Nipissing, Parry Sound, and Muskoka. Mr. G. W. Collins District Representative for Thunder Bay estimates that in that district alone between 500,000 and 1,000,000 bushels of choice seed potatoes might eventually be produced.

How Disease Decreases Yields

Leaf Roll, it may be explained, is a disease which causes the leaves of the plants to roll, or curl, in a tubular shape, weakens the plant and arrests the development of the tubers. What causes it is not known but its development is hastened in a climate where periods of hot, dry weather prevail. No remedy is known thus far except the planting of disease-free seed.

Curly Dwarf is somewhat similar in effect but the symptoms are different. In this case the plants are very badly dwarfed and lack vigor, while the leaves are badly curled. The yield from such plants consists of small unmarketable potatoes.

Mosaic is another disease which interferes with the normal development of the plant. The leaves in this case are more or less puckered and have light green blotches giving a more or less checkered appearance. The yield from such diseased plants is decreased in much the same way as in the foregoing cases.

In discussing these so-called physiological diseases the evidence of all pathologists present went to prove that Leaf Roll and Curly Dwarf are both communicable and hereditary, while the opinion of all was that Mosaic probably was communicable and cer-

tainly hereditary. There was no evidence given to prove that these diseases contaminated the soil.

It was the opinion of those pathologists present that there was little hope of ridding Old Ontario of its most serious potato disease—Leaf Roll—by selection: that the only remedy would be the importation of disease free seed potatoes from unaffected districts. As all were of the opinion that in a district, subject to dry periods with hot nights these diseases either originated through impaired vitality or were developed by specific organisms not yet isolated, the sources of seed supply for Old Ontario, therefore, would have to be located in Northern districts—preferably in Northern Ontario.

In this connection no evidence was available to prove how long such seed could be replanted in Old Ontario before the so-called physiological diseases became established. Professor Macoun, Dominion Horticulturist, was inclined to believe that it would pay our farmers to import disease-free, vigorous seed from Northern Ontario each year but would not go on record as definitely advising this. He suggested that experiments be conducted at once to prove the point.

It was emphasized by Mr. P. Murphy, Dominion Laboratory of Plant Pathology, Charlottetown, P. E. I., that while these diseases would not originate in Northern Ontario, due to the climate conditions which prevail there, yet they would readily develop and spread from diseased tubers if these were imported from contaminated districts and used for seed. In this way he explained the small percentage of Mosaic—in a few classes the percentage was high—which exists already. He advised a very careful and thorough inspection of these fields in order to prevent the contamination by

disease of this important source of supply.

The general consensus of opinion regarding the control of these diseases was as follows:

(1) To encourage the planting in Old Ontario of disease-free, vigorous, northern grown seed, preferably from Northern Ontario.

(2) To initiate a scheme of inspecting Northern Ontario potato fields, roguing out disease and impurity, hill selecting the best plants for seed and certifying as to the character of seed potatoes exported to southern districts. In this connection the production of high quality seed potatoes for planting in Old Ontario was not alone considered as Northern Ontario may very well become a source of supply for portions of several of the States of the Union.

(3) To conduct a survey in Old Ontario to ascertain the full extent to which serious diseases have become established and to eliminate as seed (by education) all stock infected with inheritable disease.

GET SEED FROM THE NORTH

Dr. W. A. Orton, United States Department of Agriculture, Washington declared that all experiments and practical experience in the United States confirmed the belief that those districts where a comparatively cool, moist climate prevailed, with long days of sunlight during the growing season and cool nights with heavy dews, were especially adapted to the production of highest quality seed potatoes. Northern Ontario, he believed measured up extremely well to these qualifications. Where less favourable conditions prevailed—as in Old Ontario and the majority of the States—a large yield of commercial potatoes might be secured, but weather conditions impaired the vitality of the

tubers and gradually made them unsuitable for seed. In many potato growing districts of the United States seed potatoes were secured each year from Maine, Wisconsin and the Maritime Provinces. He was of the opinion that these favourable climatic conditions enumerated were responsible for the virtue of the seed stock rather than the immaturity of tubers grown in these districts. A light soil he believed was superior to heavy soil for seed production. In conclusion he gave it as his belief that the yields throughout Old Ontario could easily be increased 100 per cent by the planting of northern grown seed and the general practice of skilful cultural methods.

Professor Macoun and Professor Zavitz, Ontario Agricultural College, each gave convincing reports of their experiments in proof of the high yielding quality of Northern grown seed potatoes. The former had increased yields from under 100 bushels to over 300 bushels per acre with the same variety and exactly the same environment by importing seed from the Maritime Provinces and from the North West. The latter had planted seed from the Maritime Provinces, Northern Ontario and Old Ontario under exactly similar conditions for five years and in each year Northern Ontario seed had led in the yields with Maritime Provinces seed second and Old Ontario third. Both experts agreed that immature seed grown in Old Ontario gave much heavier yields than matured seed, but both favored the development of a seed potato trade between Northern Ontario and Old Ontario.

IMMATURITY OF SEED INCREASES
YIELDS.

With but one exception all the practical growers present at the conference

who had had experience with northern grown seed concurred in the opinion that it was preferable to Old Ontario seed potatoes. Mr. Henry Broughton, of Sarnia, explained that his many experiences had proven to his satisfaction that Northern Ontario seed gave best results in his district, with Wisconsin and New Brunswick seed next in order. Mr. Douglas Maynard, of Leamington, related an interesting experience. He had hillselected his seed, digging them when immature, and had secured a splendid sample as far as appearances went—but his yields diminished. He secured New Brunswick stock of the same variety and his yields were doubled. He had not had experience with Northern Ontario grown seed. The others had had similar experiences.

Mr. Walter Cook of Cataraqui, took exception to this view. He believed that immature seed potatoes grown in Old Ontario gave as high yields as Northern grown seed and cited his own experience to support his argument. He planted potatoes in a sod field after the hay was taken off in mid-summer. After the tops had been frozen he harvested the crop and found that the small immature seed gave as good results as any he could secure from New Brunswick. He had never planted Northern Ontario grown seed.

It was the general opinion of those attending the conference that scientific experimental work should be undertaken along this line.

After the Conference a committee was formed to make recommendations to the Commissioner of Agriculture regarding the immediate and permanent improvement of the potato industry of the Province.

THE PERSONNEL OF THE COMMITTEE
WAS AS FOLLOWS:—

Dr. C. A. Zavitz, Ontario Agricul-

tural College, Guelph, (Chairman).

Justus Miller, Asst. Commissioner of Agriculture for Ontario (Secretary).

R. S. Duncan, Supervisor of District Representatives, Ont. Dept. of Agriculture.

F. C. Hart, Director, Ontario Co-operation and Markets Branch.

Professor J. E. Howitt, Ontario Agricultural College, Guelph, Ont.

S. C. Johnston, Vegetable Specialist, Ont. Dept. of Agriculture.

G. Collins, District Representative, Ont. Dept. of Agriculture, Thunder Bay District.

P. Murphy, Dominion Laboratory of Plant Pathology, Chrlottetown, P. E. I.

G. C. Cunningham, Dominion Laboratory of Plant Pathology, Fredericton, N. S.

W. A. McCubbin, Dominion Laboratory of Plant Pathology, St. Catharines.

L. H. Newman, Secretary Canadian Seed Growers' Association, Ottawa, Ont.

T. G. Raynor, Dominion Seed Inspector for Eastern Ontario.

After due deliberation the committee submitted the following recommendations:

DETAILS OF EXTENSION WORK OUTLINED.

(1) RE THE STANDARDIZATION OF VARIETIES FOR ONTARIO

That in view of the large number of varieties grown in the Province and the quantities of impure seed planted annually in consequence:

(a) The Irish Cobbler be especially recommended as a standard early variety to be grown generally in Ontario for commercial purposes and the Early Ohio be recommended as an extra early variety to be grown on a

limited scale by market gardeners in those localities where a very early variety is required to take advantage of a special market.

(b) The Green Mountain be especially recommended as a standard late variety to be generally grown in Old Ontario for commercial purposes and certain other late varieties notably Carmen No. 1, Dooley, Rural New York No. 2, etc., be recognized as standard varieties and be recommended for these districts where conditions are peculiarly favourable for their growth.

(c) Where a variety is found to be especially suited to the conditions of a certain district it is strongly advised that farmers confined their attention to such variety to the exclusion of all others.

(d) These two varieties especially recommended for general growing in the Province shall be described as follows:

(A) THE IRISH COBBLER VARIETY

Early, plants vigorous, yield heavy, tubers edible when quite immature; of good quality throughout the year when mature, a good shipper. TUBERS: Round to cubical, slightly to considerably flattened, stem end usually deeply notched, skin creamy white. SPROUTS: Base, leaf scales and tops slightly tinged with red, violet or magenta. In some cases, however, the color is obscure. FLOWERS: Light rose to purple.

(B) THE GREEN MOUNTAIN VARIETY

Medium late, vines vigorous, a heavy yielder, good edible quality, excellent shipper. TUBERS: Moderately to distinctly oblong, usually broad, flattened ends blunt, skin a dull creamy or light russet colour. SPROUTS: Base, leaf scales and tips creamy white. FLOWERS: White.

(2) RE APPOINTMENT OF STAFF OF
PATHOLOGICAL EXPERTS

That because of the serious diseases known to have become established in the potato fields of the Province of Ontario, the Federal Government be recommended to appoint a staff of competent pathologists, consisting of eight or ten men who have specialized in potato diseases and will be under the supervision of one chief pathologist stationed in the Province. It is further recommended in this connection that:

(a) These specialists rogue the best potato fields in Northern Ontario of impurities and disease with the object of making these fields important sources of Northern grown potato seed.

(b) In Old Ontario these specialists make a scientific survey of the general potato situation in relation to disease in order to obtain data upon which a comprehensive policy for immediate improvement may be based.

(c) These specialists do everything in their power to give the individual potato growers all information possible regarding the eradication of disease and the best methods of potato crop improvement while roguing fields, and that they also assist as far as may be possible in the educational campaign, hereinafter recommended.

(3) RE SECURING NORTHERN GROWN
SEED SUPPLIES FOR OLD ONTARIO
FARMERS.

That in view of evidence from many sources regarding the superiority of Northern grown seed potatoes:

(a) The Ontario Government proceed at once to buy a quantity of the best Northern grown potato seed available, preferably from Northern Ontario, to be used for experimental and demonstration purposes in Old Ontario next year.

(b) The Ontario Government at once

make plans to aid farmers and growers to locate the best northern grown seed potatoes, preferably from Northern Ontario, in carload lots for next spring's planting.

(4) RE THE ESTABLISHMENT OF A GOVERNMENT SOURCE OF SUPPLY OF THE
HIGHEST QUALITY OF SEED POTATOES
GROWN IN NORTHERN ONTARIO.

(a) That a part of one of the farms, or parts of several of the farms in Northern Ontario now owned by the Ontario Government be used as a source of supply of the very highest quality of seed potatoes, and used also as a station or stations for potato improvement work.

(b) That as soon as possible the Ontario Government buy a quantity of the best potato seed available in Northern Ontario to be planted next spring on these acres of land set aside for the purpose; the resulting crops to provide: (1) material for selection in improvement work (2) choice seed to be used by District Representatives for school fairs and demonstration purposes (3) seed to be used for the Experimental Union in co-operative experiments (4) seed to be used for all other experimental and demonstration purposes in Old and Northern Ontario (5) seed for planting on these farms in Old Ontario owned by the Ontario Government which are best adapted to potato growing; these farms in turn to become sources of seed supply for the surrounding districts (6) seed of a particularly high guaranteed quality to be sold to potato seed growers co-operative societies as foundation stock.

(5) RE AN EDUCATIONAL CAMPAIGN

(a) That the Ontario Government at once initiate an educational campaign, using all educational and publicity agencies at its command and if necessary creating new agencies, to

the end that potato growers be fully informed of the seriousness of some of the diseases prevalent in the Province that the growers in Old Ontario be made cognizant with the desirability of seed potatoes grown in Northern Ontario and be encouraged to purchase the same, and that farmers and growers in all districts be stimulated to as rapid an improvement of the potato industry as possible.

(b) That in this connection the Ontario Government make plans to begin next spring a series of experiments and demonstrations widely spread over Old Ontario to prove in a forceful and convincing way the high yielding and relatively disease-free quality of seed potatoes grown in Northern Ontario.

(6) RE THE APPOINTMENT OF A COMMITTEE TO STUDY GRADES AND GRADING

(a) That a committee be appointed at once by the Ontario Government to suggest setting some standard grading of potatoes if such a standard, after investigation, be deemed advisable.

(b) That the Ontario Government suggest to the Federal Government the desirability of setting such standard grading for the Dominion as may be decided by the committee.

(7) RE THE APPOINTMENT OF A POTATO SPECIALIST.

(a) That a man be appointed at once by the Ontario Government to

have charge of all potato extension work in the Province, to co-ordinate the efforts of all agencies heretofore suggested, to organize the whole improvement scheme in its broaders, phase to prevent duplication of work in any form, to direct all educational and publicity campaigns and to supervise all literature concerning any phase of the potato industry which may be published for distribution by the Ontario Government. This man, in short, would be responsible for all work undertaken by provincial officials in connection with the potato industry, and for the close co-operation and co-ordination of effort of all those engaged in the work.

(8) TO THE APPOINTMENT OF AN ADVISORY COUNCIL.

(a) That an Advisory Council be appointed to enable the Potato Specialist to work efficiently and without friction. This Council to consist of not more than six men who would meet regularly to confer with the Potato Specialist.

(b) That this council would represent every interest comprehended in this scheme of potato extension work, including the practical growers.

(c) That at these meetings of the Advisory Council the policy to be followed along lines heretofore enumerated as within the scope of the duties of the Potato Specialist would be decided by mutual agreement.

Notes on Western Canada

BY G. E. DAY, PROFESSOR OF ANIMAL HUSBANDRY.

There are few things from which the Easterner can derive greater pleasure than a trip through our Western Provinces. There is, however, a subtle change gradually creeping over the

West. I have tried to convince myself that the change is connected with my own point of view, or, in other words, that the frequency of my trips to the West caused me to look upon things

from a different point of view, and, consequently, to imagine that the West had changed. Careful consideration, however, convinces me that the West is really changing, which change may be noted in habits of dress, habits of speech, habits of action, habits of thought, and habits of living, or in other words, the West is losing some of its charm of newness, but it still has its bracing climate and its magnificent stretches of fertile prairie while the whole-hearted unquestioning optimism characteristic of the Westerner is the same as of yore.

Wonderful strides are being made in all our Western Provinces in regard to education, and especially in regard to agricultural education. Manitoba was the first to found an agricultural college, but Saskatchewan is the proud possessor of what promises to be the finest Institution of its kind on the continent, while Alberta and British Columbia have started agricultural lectures in connection with their Universities, and are utilizing farm lands for investigational work. As yet, the live stock equipment of the Alberta and British Columbia colleges is not nearly up to the equipment of the other two Provinces, but we expect to see important steps taken within the next few years to bring about progress in this connection. The mention of Western agricultural education would not be complete without a reference to the Provincial Agricultural Schools founded at various points throughout the Province of Alberta where excellent rudimentary work is being done.

Money is abundant in Western Canada to-day, and, while city real estate is not moving, farm lands and ranches are changing hands at good prices. General business in Western cities ap-

pears to be good on the whole, and in a very short time an absolutely sound, healthy prosperity will be noted throughout all the Country.

Western Canada, or that part of it which lies east of the Rockies, is undoubtedly going to be the greatest live stock section in this country. In dairying, and in breeding of pure-bred stock, Ontario will likely lead the van for some time to come, but for the production of meat producing animals for commercial purposes, and also for the production of horses, our Western Provinces are bound to occupy a very important place indeed on the live stock map of this continent.

If our Ontario breeders are wise in their day and generation, they will devote their energies to cultivating our Western farmers as customers for breeding stock, and they will disabuse their minds of any idea that the West will be satisfied with inferior stock. On the contrary, our Western farmers are becoming more and more particular regarding the class of sires which they use, and we shall need to pay serious attention to our business if we are to produce sufficient high class animals to satisfy our Western breeders. Another fact which the Ontario breeder will do well to remember is that at the present time Western Breeders are buying some of the highest priced sires ever brought into Canada, and in a very short time we are going to meet with serious competition from Western breeders in the production of pure bred stock. This is a fact which we cannot afford to ignore, and if we would retain and extend our trade in breeding stock with Western Canada, we must see to it that we give the Western buyer value for the money he spends in this Province.

Stock Judging by Fourth Year "Ag." Men

J. C. McBEATH, '18.

THE annual stock judging trips to the Ag. option are the one thing that everybody looks forward to in their fourth year and well they might too. The trips are arranged by the department of animal husbandry and in doing so they plan to have the boys visit as many of the best breeders of live stock as is possible.

This year the boys have visited some of the best stockmen in the near vicinity of Guelph and were given the opportunity of inspecting the best specimens of their several breeds of farm stock.

On October the 25th the first trip was made and the places visited were Mr. Arkell's and Mr. Auld's of Arkell. Mr. Arkell's Oxford sheep of excellent quality and type were inspected, and at Mr. Auld's, Shorthorn cattle was the subject of discussion. On November 7th a trip to Mr. Laird's a short distance from Guelph, showed some Cotswold sheep of good breeding and reputation. The next day at J. J. Elliot's the boys had the opportunity of seeing Shorthorn cattle of class and quality. Included in Mr. Elliot's herd were the reserve champion bull at London, Newton Loyalist; Roan Lady, Senior Champion at Toronto and Rosa Hope 21st Junior and grand champion at the Canadian National. On November the 14th at John Brown's of Galt, were seen some finished cattle. Mr. Brown makes a speciality of buying in feeders off the grass and fattening them for sale on the hoof. Not only did the boys learn a great deal about judging finished animals, but they also gained a great many pointers in the practical end of feeding. Thursday of the same week was a very heavy day for the bunch. Early in the morning the whole class left

in automobiles to put in a busy day. The first stop was at Mr. Blythe's who is a breeder of Berkshire swine. Although Mr. Blythe has been in the swine business for only five years, he has some excellent stock which afforded some interesting work. From there the party went to George Reynolds and placed a number of classes of Renford cattle of good type and quality.

After taking dinner at Elora, the first place called at was James Lowe's who is a breeder of pure bred Aberdeen-Angus cattle. The class had a treat there in being able to have in a class, the grand champion cow at Toronto this year. Also Mr. Lowe's young bull, purchased at the International last year, brought out some very favorable criticism. The last place visited that day was Mr. J. A. Watt's. Mr. Watt is a very prominent breeder of Shorthorn cattle and has a very enviable reputation. Several classes were judged and some interesting arguments indulged in. The boys considered themselves very fortunate in having an opportunity of seeing Gainford Marquis, the undefeated bull on the Canadian Show Circuit.

Other places visited during the fall were the Dominion Transport Co., of Toronto, Mr. Cliffords at Oshawa, who breeds Herefords; Will Dryden's at Brooklyn, and Smith and Richardson's at Columbus. The last journey of the year was made to Queensville and Markham. At Queensville, Clydesdale and Percherons were judged while at Markham Clydesdales alone was the day's programme. The boys also had the opportunity of placing several classes of Angus at John Boarman's of Guelph. At every place, stock of the highest quality was seen and the lively interest shown was evidence of the boys' appreciation in having the privilege of looking over such valuable stock.

THE OAC REVIEW

REVIEW STAFF

L. E. O'NEILL, '18, *Editor-in-Chief*

J. B. MUNRO, '19, <i>Assoc. Editor</i>	A. M. STEWART, '19, <i>Alumni</i>
R. W. MAXWELL, '18, <i>Agriculture</i>	A. H. MUSGRAVE, '19, <i>Athletics</i>
F. L. FERGUSON, '18, <i>Experimental</i>	J. SHALES, '19, <i>College Life</i>
C. F. PATTERSON, '18, <i>Horticulture</i>	C. MURDOCK, '20, <i>Locals</i>
G. R. WILSON, '18, <i>Poultry</i>	G. H. SCOTT, '20, <i>Artist</i>
R. A. BRINK, '19, <i>Query</i>	MILDRED RUTTAN, '18, <i>Macdonald</i>

EDITORIAL:

OUR EXIT.

Not that his salary has been cut in two, nor that he has merited the wrath and vengeance of the student body, does the editor vacate his chair of office and place the responsibility of the welfare of the magazine in other hands, but Father Time has decreed that one year has rolled around and that we must as a matter of form, give way to some one else. It is with a certain amount of regret that the editor does this as we feel that in doing so we have received from the magazine more than we gave. To edit our magazine has taken time and work, but the fact still remains that with an entire change in staff every year, the members are only beginning to achieve efficiency when the time has come for retirement. It is for this reason that we feel indebted

to the Review for the training and experience which it has given and which far outweighs the inconvenience and work placed upon the magazine.

Before severing our connection, we wish to thank our contributors, advertisers, and subscribers for their loyal support during the past year. Whatever success has been attained by the Review during our term of office may be attributed to the hearty co-operation and harmonious working of all concerned. It is indeed gratifying to any editor to note the interest taken and the sympathetic attitude of the members of the College staff toward our student magazine. At present, under abnormal conditions, the best we can do is "carry on" but, the time is not far distant when a college graduate, who will receive a comfortable salary, will be editor of

the Review and the magazine will then rise to its proper sphere of being the leading and most authentic agricultural magazine published in Canada. All we need is a return of normal times and the same old time spirit and attendance which existed before the war. In the meantime we trust that the same generous treatment which we have received will be given to our successor Mr. J. B. Munro, who has now developed a good editorially digestive system and will assume office in January.

REVIEW COMPETITION

The annual Review Competition which closed on November 10th., showed that keen interest is being taken in our paper, both by the boys at O.A.C. and the girls of MacDonald Hall. Entries in the stories and poems were more numerous than ever before and all work was of good quality. The list of prize-winners, as reported in this issue, gives place to only the first two entries in each class. They are the "money takers", but many others are worthy of publication and will be used when space will permit.

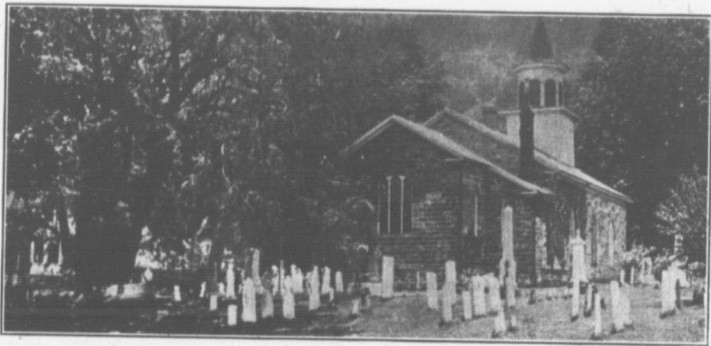
The winners of prizes may obtain the amount of their awards in purchases at the Students Supply Store, O.A.C., The names of the winners and the amounts of their prizes have been handed in there and settlement will be made on request.

The Editor and staff of the Review wish to congratulate those who were successful in gaining first or second places in each class, and heartily thank all who contributed to the success of this competition.

THE O. A. C. LIVE STOCK CLUB

At a recent meeting of the student body in Massey Hall a constitution of a Live Stock Club was discussed and accepted, officers for the ensuing year were elected and everything took on the appearance of a real live meeting where a need was felt and a remedy found. For many years there has been an agitation for a club of the kind but never until a few weeks ago were results achieved. The main object in forming this club was to furnish an opportunity for those interested in Animal Husbandry, to further their knowledge by lectures and discussions in the meetings and practical work outside, so far as is possible. The field is large, the scope for endeavour great and the possibilities wonderful. Especially is this true at the O. A. C. where the time devoted to animal husbandry is of necessity limited greatly owing to the fact that the agriculture option embraces so many subjects, and each is deserving and gets its own portion of the lecture periods. At many American colleges they have courses in animal husbandry which would correspond well with ours if our agriculture option were divided into two options—field husbandry and animal husbandry. Thus it will be seen that judging teams from American colleges have more time for preparation than the team from the O. A. C. It is hoped that before another Ontario judging team goes to Chicago that the effect of the Live Stock Club will be felt and a better showing will be made than there has been in the last few years.

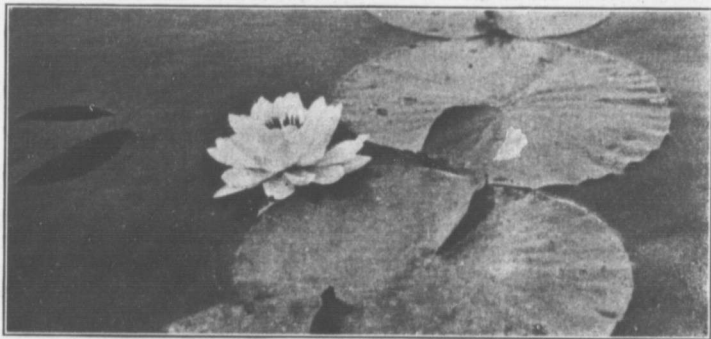
THE REVIEW EXTENDS TO ALL ITS READERS WISHES FOR A MERRY CHRISTMAS AND HAPPY NEW YEAR.



CHURCHYARD



GRAZING



WATERLILY

PRIZE WINNING PHOTOGRAPHS IN REVIEW COMPETITION.

Results of O. A. C. Review Competition

SHORT STORY—

First, Germs, by "Pinus mugo"—G. B. Hood.

Second, Shot Without Warning, by "Cimaron"—A. H. Musgrave.

POEM—

First, Go, My Son! by "Une Veuve"—M. Barbara Smith.

Second, L'Erreur, by "Poleon Lemagne"—R. W. Oliver.

Judges: Dr. O. J. Stevenson, G. H. Unwin, Morley Pettit.

PHOTOS—

First—Some Aspects of Country Life, by "Joe Pye"—G. W. Robinson.

Second—Scenery, by "Sunny Alberta"—S. G. Collier.

Judges—Prof. D. H. Jones, Dr. O. J. Stevenson, Prof. W. J. Squirrel.

CARTOONS—

First—Meditations, Sink or Swim, by "Amiel"—R. Almey.

Second—College Life, by Edward Plummer—G. W. Scott.

Judges—S. H. Gandier, G. H. Unwin.

GO, MY SON!

Dear heart, since first God gave you to my care,
 In all the busy days and years gone by
 Was there a joy or grief we did not share?
 We have been comrades—lovers, you and I.
 Such sympathy complete we two have known
 That in our aims and dreams we were as one,
 And, if you leave me, I shall be alone,—
 Yet,—go, my son!

For greed and force have sought to grasp the world
 And fiendish cruelty has stalked abroad,
 From quiet homes the helpless have been hurled
 The blood of innocents have soaked the sod.
 That strange survival of a brutish past—
 The still—unchristianised barbaric Hun—
 Has sinned enough,—this war must be the last!
 So go, my son!

Upon fair Flanders' age-long battle-field
 Acres of wooden crosses testify
 That Britain honours every bond she sealed
 And that her sons are not afraid to die!
 But have they died in vain? Go, for their sake!
 If justice be achieved, if peace be won,
 What are two lives to give? My heart may break,
 Yet, — go, my son!

"UNE VEUVE"



GOD GIVE US PEACE!
 Oh make Thou us,
 through centuries long,
 In PEACE secure,
 in justice strong.
 Around our gift
 of freedom draw
 The safeguards of
 Thy righteous law;
 And, cast in some
 diviner mould,
 Let the new cycle
 shame the old!

WHITTIER.

The Alumni Column sends the Season's Greetings and all Good Wishes for a Peaceful Happy New Year to its readers.

We thank the many, who have assisted us in making the columns interesting throughout the past year. We hope to have your hearty support in the New Year.

HONOR ROLL

Containing the names of Students and ex-Students of the Ontario Agricultural College who have enlisted for Overseas Service (To Nov. 20th, 1917)

Addis, G. T. (Lt.).....	'10
Agar, J. C.....	'17
Agar, E. Z. (Capt.).....	'17
Aiton, R. M.....	'18
Alton, F. E.....	'15

Alton, F.....	'15
Ames, G. O.....	'18
Amos, L.....	'16
Anderson, W. M.....	'19
Armstrong, P. P.....	'10
Arnold, C. L. (Lt.).....	'19
Auld, J. H. (Lt.).....	'12
Atkins, J. H. P. (Lt.).....	'07
Atkinson, G. L.....	'05
Austin, R.....	'11
Bagsley, H. E.....	'17
Baker, F. H. R.....	'16
Barrett, H. H. G.....	'16
Beatty, H. A.....	'15
Bell-Irving, A.....	'12
Bennett, W.....	'16
Bertram L., (Lt.).....	'15
Bethune, J. A. (Lt.).....	'17
Bews, R.....	'19
Biggar, B.....	'13
Bird, W. J.....	'17
Birdsall, F. E. (Capt.).....	'11
Bissett, W.....	'17
Blanchard, B. H. C.....	'14
Bland, A. G. (Lt.—).....	'13
Boddy, R. A.....	'13
Bond, J. H. M.....	'17
Boucher, W. H.....	'18
Boulton, O.....	'17
Bradley, C. A.....	'17
Bramwell, R. S.....	'14
Breckon, W. D.....	'06
Brooks, C. (Col.).....	'02
Brooks, G. F.....	'18

Brown, Richard.....	'18	Coulter, W. A.....	'19
Brown, W. J. (Lt.-Col.).....	'94	Cooke, G. V. (Lt.).....	'13
Brown, Ralph.....	'18	Cook, W. O.....	'19
Brown, W. R.....	'18	Cooper, H. S.....	'09
Bryden, R. K. (Lt.).....	'18	Corbett, R. R.....	'18
Burnam, J. W.....	'17	Cory, A. (Major).....	'15
Burnett, R. T.....	'15	Cowan, A. H.....	'17
Burrows, A. R.....	'16	Crawford, R. S.....	'17
Burrows, L. (Lt.).....	'15	Creelman, J. M.....	'15
		Crosley, C. R.....	'17
Caldwell, L. V. (Lt.).....	'17	Cudmore, H. J.....	'17
Callister, G. J.....	'11	Culham, G. J. (Lt.).....	'13
Cameron, D. A. R. (Capt.).....	'08	Cunnington, C.....	'18
Campbell, H. M.....	'17	Curran, H.....	'16
Campbell, A. M.....	'14	Curtis, J. C.....	'12
Campbell, J. W. R.....	'17	Curtis, N. (Lt.).....	'15
Campbell, W. N.....	'12	Cuthbertson, J. A.....	'15
Carncross, E. E.....	'16	Clark, H. W.....	'17
Carroll, J. A. (Lt.).....	'14		
Carpenter, G. H.....	'04	Davidson, W.....	'17
Carson, H. A.....	'19	Davies, E. L. (Lt.).....	'13
Cassels, H.....	'19	Davis, H. R. L.....	'18
Chaffey, W. F.....	'13	Davis, H.....	'12
Chamberlain, C.....	'17	Davison, W.....	'13
Chambers, R. J.....	'15	Daw, A. R.....	'15
Chauncey, R. J.....	'16	Delworth, C.....	'18
Cherry, P. A. B. (Lt.).....	'12	Dickson, N. A.....	'18
Chesley, E. T.....	'18	Dodding, D.....	'18
Chester, W. N.....	'18	Donald, F. C.....	'15
Christie, H. F.....	'18	Donaldson, E. R.....	'18
Christie, H. R.....	'10	Donaldson, J. R.....	'16
Clare, F.....	'18	Donaldson, R. W.....	'15
Clark, G. A.....	'16	Dow, N. D.....	'16
Clark, T. O.....	'12	Downie, G. A. (Lt.).....	'14
Clarke, J. B. M.....	'18	Duff, C. W.....	'18
Clarry, A. G.....	'17	Duff, G. C.....	'14
Cleal, J. P.....	'05	Duncan, C. C.....	'16
Cleaves, A. C.....	'14	Dunlop, J.....	'14
Clemens, L. P.....	'16	DuToit, A. M.....	'19
Cutting, A. B.....	'04	DuToit, A. G. S.....	'18
Cleverly, A. C.....	'17		
Cleverly, H. S.....	'11	Eakins, R. C.....	'11
Cline, C. A.....	'19	Eastham, A. (Lt.).....	'09
Cody, B.....	'19	Edwards, G. H.....	'18
Coke, E. F. (Lt.).....	'09	Edwards, H. S.....	'17
Connon, P. C.....	'16	Edye, H. K.....	'16
Copeland, R. C.....	'18	Elgie, R. H.....	'16
Cotsworth, F. B.....	'16	Elliott, G. A.....	'16
		Ellis, G. C.....	'13

Erb, J. H.	'18	Hamilton, F. W.	'19
Estabrooks, W. H.	'17	Hammersley, A. S.	'19
Everest, R. E.	'05	Hammond, H. L. (Lt.)	'17
Fairclough, E. R.	'17	Hammond, W. A.	'18
Fairles, W.	'18	Hammond, W. S.	'17
Fairweather, A. W.	'03	Hancock, M. L.	'18
Fenwick, F.	'17	Hanna, D.	'19
Ferguson, P. H.	'16	Harding, P. S. D. (Lt.)	'13
Fidlar, D. G.	'18	Hare, W. E.	'16
Fisher, J.	'19	Hare, H. R.	'14
Fleming, C.	'18	Harris, T. E. M.	'17
Fisher, M. H.	'18	Hart, M. M.	'13
Fitzgerald, E. J.	'16	Hart, E. W. (Lt.)	'15
Fitzpatrick, A. C.	'17	Hartley, R. S.	'17
Flatt, C. M.	'19	Harkness, N. J. (Lt.)	'19
Foot, J. L.	'16	Harris, T. E.	'17
Forman, C. J.	'17	Harrop, C.	'18
Fortier, T. H. H.	'15	Hayles, N. A. D.	'10
Foster, H. E.	'13	Hearle, E.	'16
Foulds, F. E.	'16	Henderson, J. F. (Lt.)	'18
Foulds, T. B.	'10	Henry, L. (Capt.)	'13
Foyston, B. E.	'15	Herder, H. C. (Lt.)	'17
Franklin, W.	'17	Herridge, H.	'13
Fraser, J. F.	'13	Hessel, E. C. (Lt.)	'16
Freeborne, S. G. (Lt.)	'15	Heurtley, E. W.	'11
French, H. S.	'16	Hextall, L. J. (Lt.)	'13
Fuller, J. C.	'17	Hiddleston, J.	'15
Fulton, A.	'17	High, I. V.	'18
Gandier, W.	'17	Higman, C. G.	'15
Gardhouse, W. W.	'19	Hill W. G.	'17
Garlick, G. (Lt.)	'16	Hill, L.	'18
Gautby, C. (Lt.)	'17	Hinman, R. B.	'15
Gautby, L. B.	'17	Hirst, G.	'14
Golding, N. S. (Lt.)	'14	Hoard, C. W.	'18
Goodall, G. M.	'17	Hockey, J. F. D.	'17
Goodman, L. (Capt.)	'15	Hogarth, J. G.	'17
Graham, C. N.	'17	Holmden, R.	'17
Grange, J. B.	'13	Horan, B. K.	'15
Greenshields, J. M. (Capt.)	'07	Hoodless, J. B. (Lt.)	'05
Gregg, A. H.	'16	Hotson, W. B.	'14
Grunder, N. A.	'19	Hopkins, E.	'11
Gunn, R. E. (Capt.)	'04	Houlding, J. G.	'16
Hales, J. P. (Lt.)	'15	Howarth, C. M. (Lt.)	'19
Hall, E. R.	'15	Huckett, H. C.	'16
Hallowes, W.	'14	Hudson, H. J.	'07
		Ingraham, G. F.	'14
		Ingraham, R. C. J. (Lt.)	'19

Ingram, F. H.....	'09	Lindenburg, A.....	'18
Innes, R. (Lt. Col.).....	'11	Lindesay, H. H.....	'15
Irvine, D.....	'14	Loghrin, S. (Capt.).....	'97
Irwin, B.....	'18	Long, L. C.....	'18
Jensen, E. (Lt.).....	'16	Lord, L. (Lt.).....	'16
Johnston, G. T.....	'12	Lord, S. N. (Lt.).....	'16
Johnston, J. T.....	'16	Luckham, C. F.....	'18
Jones, S. F.....	'15	Lund, T. H.....	'12
Jones, Mel.....	'16	Macklin, J. M. (Lt.).....	'18
Jordan, M. D.....	'18	Maclaren, H. A.....	'13
Jowsey, H. B.....	'14	Magee, W. G.....	'17
Kay, H. R.....	'13	Main, C.....	'19
Kay, W. J. B.....	'18	Main, C.....	'11
Kedey, W. M.....	'15	Malcolm, W. F. (Lt.).....	'17
Keegan, H. L. (Major).....	'13	Malloch, E. (Lt.).....	'15
Keirstead, R. M. (Lt.).....	'17	Marshall, N. A.....	'18
Kelleher, M.....	'14	Martin, I. B.....	'17
Kelso, M. W.....	'12	Martin, N. R.....	'16
Kennedy, S.....	'10	Martin, G. L.....	'19
Kent, H. (Lt.).....	'18	Mannsel, F. S. (Gen.).....	'02
Ketchen, R. W.....	'04	Mason, H. C. (Lt.).....	'17
King, V. (Lt.).....	'11	Matheson, A. (Lt.).....	'18
Kingsmill, G. F.....	'16	Maybe, H. J.....	'18
Kirkley, F. R.....	'15	Meek, C. M.....	'17
Kilgour, A. W.....	'15	Merrick, R. C. (Capt.).....	'18
Knight, G. F.....	'17	Middleton, E.....	'18
Knowles, F. G.....	'17	Millar, G. C.....	'12
Knox, R. G.....	'17	Mitchell, A. R. R.....	'16
Knowles, G.....	'19	Mollison, R. W.....	'14
Laggart, J. G.....	'11	Moore, J. A. C.....	'14
Landels, B. H. (Lt.).....	'11	Morgan, W. W. G.....	'92
Lane, A. C.....	'17	Morse, T. W. (Lt.).....	'16
LaPierre, L. A. (Capt.).....	'03	Morton, B. W.....	'17
Lattimer, E. (Capt.).....	'14	Moses, E. N. (Lt.).....	'17
Lavis, G. E.....	'18	Mosley, L. A.....	'14
Lawson, J. D. (Lt.).....	'11	Munro, F. A. (Major).....	'12
Lawrence, C. A. (Capt.).....	'09	Murray, C.....	'08
Lawrence, J. M.....	'17	Murray, H. G.....	'13
Leach, W. B.....	'18	Murray, R.....	'16
Leggatt, C. W. (Lt.).....	'18	Murray, R. H.....	'12
Lee, G. D. (Capt.).....	'16	Murray, W. J. R.....	'17
Lever, Jas. (Lt.).....	'14	Murray-Brown, O.....	'09
Lewis, H. S.....	'07	Myrick, W. G.....	'13
Lewis, R. M.....	'16	MacAdam, J. A.....	'18
Leppan, H. D.....	'14	McArthur, D. G.....	'18
Light, H. J.....	'16	McCall, G. W.....	'14

McCharles, M.....	'16	Pulleine, H.....	'17
McClymont, A. C. (Lt.).....	'16	Ramsay, R. L.....	'14
McConkey, O.....	'17	Rawson, C. L.....	'17
McCormick, J. C.....	'16	Raymond, A. B. (Lt).....	'18
MacDonald, R.....	'12	Raynor, G. T.....	'15
MacDonald, G. C.....	'13	Read, D. G.....	'18
McElroy, H. M. (Lt.).....	'14	Reed, F. (Lt.).....	'07
McEwan, C. F. (Major).....	'09	Reeves, F. S.....	'12
McGregor, D. G. (Lt).....	'18	Renwick, H. L.....	'19
McGuire, M. E.....	'18	Rettie, J. E. (Lt.).....	'12
MacKenzie, N. D. (Major).....	'09	Riley, C. W.....	'18
McLaren, Q. (Lt.).....	'15	Rive, H.....	'03
MacLean, J. F.....	'20	Robertson, W. H.....	'11
McLennan, D. M.....	'16	Robins, W. P. (Lt.).....	'85
McMullin, W. B. (Lt.).....	'17	Roger, J. C.....	'17
McPhail, M. C.....	'17	Rogers, C. H. (Col).....	'97
McWhinney, H. S.....	'18	Rogers, C.....	'12
		Rogers, S.....	'12
Neal, C. W. (Lt.).....	'17	Romyn, A. E.....	'16
Neal, A. R.....	'14	Ross, M. N. (Capt.).....	'98
Neilson, M. A. (Lt.).....	'17	Rowe, G. F.....	'15
Nelson, H. J.....	'19	Rowland, H. F.....	'16
Nind, P. W.....	'15	Rowlands, W. A.....	'17
Nixon, C. M.....	'17	Rowley, E. G. (Lt.).....	'17
Nourse, C. B. (Major).....	'14	Rumsby, R.....	'15
		Runnalls, P. L.....	'17
Oldfield, H. G.....	'16	Ryan, K. (Lt.).....	'14
Orowski, A. J.....	'17	Ryrie, H. S. (Lt.).....	'13
		Roy, Ernest.....	'18
Packham, S.....	'18		
Parker, G. B.....	'16	Sampson, H.....	'18
Patch, A. M.....	'09	Sanderson, C. E.....	'18
Patterson, J. F.....	'20	Sanderson, T. (Lt.).....	'15
Patton, G. E.....	'17	Sands, D. R.....	'15
Pawley, N. H. (Lt.).....	'15	Sanford, P. L.....	'17
Pearsall, L. W.....	'19	Salter, E. J.....	'20
Pearson, H. W.....	'18	Schwemann, D.....	'17
Peart, R. M.....	'16	Scott, W. M.....	'17
Penhale, R. D.....	'20	Scott, H. M. (Major).....	'15
Percival, S. E.....	'17	Semon, P.....	'09
Pereira, A. O (Lt.).....	'17	Seymour, C. N.....	'18
Peren, G. S.....	'15	Shaw, H. J.....	'18
Phillips, H.....	'12	Shaw, C. F.....	'18
Poe, J. I. (Major).....	'83	Shaw, J. G.....	'18
Porter, M. (Lt.).....	'17	Shaver, F. D.....	'13
Porter, S. (Lt.).....	'17	Shields, T.....	'19
Powys, B. C.....	'17	Shipton, J. C.....	'15
Pratt, W. J. (Capt.).....	'16		

Shutt, D. B.	'19	Walker, C. T.	'12
Shuttleworth, E. H. (Capt.)	'15	Walker, W.	'18
Silverthorn, G.	'18	Wallace, D. W.	'18
Simonds, R.	'17	Walsh, F. W. (Lt.)	'16
Simpson, G.	'14	Ware, B. W.	'18
Skelton, R. J.	'16	Waterfall, J. F.	'17
Sloan, R. R. (Capt.)	'05	Waterhouse, F.	'13
Smedley, G.	'18	Waterman, S.	'16
Smith, D. M.	'15	Waters, M. S.	'17
Smith, G. L.	'17	Watt, A. L.	'18
Smith, M. T. (Lt.)	'15	Watt, M. A.	'18
Smylie, J. S. (Lt.)	'15	Watt, R. S. (Lt.)	'17
Spencer, G. J. (Capt.)	'14	Wearne, H.	'11
Stairs, K.	'13	Wearne, G. A.	'17
Stanley, C. W.	'14	Webster, C. A. (Lt.)	'13
Stansfield, N. (Lt.)	'14	Weir, D.	'06
Steele, T. M.	'18	Weir, J. (Lt.)	'03
Steele, J. A.	'16	Weld, D. S.	'19
Stevenson, H. E.	'18	Welton, K. (Lt.)	'16
Stewart, P.	'14	Western, H. W.	'19
Stirett, G. H.	'14	Western, E. A.	'16
Stoddart, T.	'18	Westra, H.	'17
Stokes, C. (Lt.)	'17	White, A. H.	'17
Story, H. M.	'19	White, R. E.	'19
Stones, J. G. K.	'18	White, W. R.	'15
Sullivan, J. H.	'18	White, O. C.	'10
Surgenor, W. J.	'19	Whitelock, J. E.	'19
Sutton, R. G.	'17	Whittingham, G.	'15
		Whyte, F. G.	'17
Taylor, W. S.	'19	Wilcox, C.	'16
Thomas, B.	'19	Wilson, C.	'18
Thompson, J. W.	'20	Wilkinson, E. G.	'14
Thompson, W. R.	'09	Wilson, N. I. (Lt.)	'15
Tompkins, M. N. (Capt.)	'12	Wilson, S. C.	'17
Thompson, S.	'18	Wilson, G.	'13
Thompson, G. A. (Lt.)	'16	Wilson, J. R. (Lt.)	'16
Townsend, D.	'16	Wiltshire, A. E.	'19
Townsley, W. A. (Lt.)	'15	Wiltshire, W. E.	'14
Tregilus, C. A. (Lt.)	'13	Woodgate, H. A.	'17
Twigg, C. B.	'07	Wooley, H. H.	'18
		Wright, C. H.	'11
Ure, R. D.	'17	Wright, W. H. (Lt.)	'12
		Wyatt, H. M.	'19
Vahey, P. D.	'16		
Varey, J. M.	'16	Yule, R. G.	'16
Vining, R. L.	'14	Zeigler, W. T.	'19

Killed, Died or Missing

Cleal, J. P.....	'05	Hogarth, J. G.....	'17
Bagsley, H. E.....	'17	Horan, B. K.....	'15
Barrett, H. H. G.....	'16	Ingram, F. H.....	'09
Bews, R.....	'19	Jensen, E. (Lt.).....	'16
Bradley, C. A.....	'17	Kedey, W. M.....	'15
Chaffey, W. F.....	'13	Kennedy, S.....	'10
Chambers, R. J.....	'15	Landels, B. H. (Lt.).....	'11
Coulter, W. A.....	'19	Lane, A. C.....	'17
Davies, E. L. (Lt.).....	'13	Lee, G. D. (Capt.).....	'16
Duff, G. C.....	'14	Lindesay, H. H.....	'15
Fairclough, E. R.....	'17	Loghryn, S. (Capt.).....	'97
Fairweather, A. W.....	'03	Matheson, A. (Lt.).....	'18
Fitzpatrick, A. C.....	'17	McLaren, Q. (Lt.).....	'15
Fitzgerald, E. J.....	'16	McLennan, D. M.....	'16
Goodall, G. M.....	'17	Morse, T. W.....	
Greenshields, J. M. (Capt.).....	'07	Neilson, M. A. (Lt.).....	'17
Harrop, C.....	'18	Patch, A. M.....	'09
Henry, L. (Capt.).....	'13	Pawley, N. H. (Lt.).....	'15
Herder, H. (Lt.).....	'17	Pereira, A. O. (Lt.).....	'17
Hextall, L. J. (Lt.).....	'13	Porter, M. (Lt.).....	'17
Rowley, E. G. (Lt.).....	'17	Pratt, W. J. (Capt.).....	'16
Shipton, J. C.....	'15	Powys, B. C.....	'17
Smith, M. T. (Lt.).....	'15	Raynor, G. T.....	'15
Stokes, C. (Lt.).....	'17	Read, D. G.....	'18
Walsh, F. W. (Lt.).....	'16	Watt, R. S. (Lt.).....	'17
Waterhouse, F.....	'13	Weir, J. (Lt.).....	'03
Waters, M. S.....	'17	Westra, H.....	'17
Walker, C. T.....	'12	Wilson, S. C.....	'17
Kilgour, A. W.....	'15	Winslow, W. H.....	'15
Hiddleston, J.....	'15	Wright, C. H.....	'11

But never, oh! never come sighing,
 For ours was the Splendid Release
 And oh! but 'twas joy in the dying
 To know we were winning you peace
 So come when the valleys are
 sheening
 And fledged with the promise of
 grain;
 And here where our graves will be
 greening,
 Just smile and be happy again.

And so when the war will be over
 We'll seek for the Wonderful One;
 And maiden will look for her lover,
 And mother will look for her son;
 And there will be end to our griev-
 ing,
 And gladness will gleam over loss,
 As—glory beyond all believing!—
 We point to a name on a
 cross.

— Service—

- The following list compiled by the members of the Senior year gives the addresses correct to date of most of year '18 men still on active service:—
- 145583 Pte W. H. Boucher—D Co'y, 42 Bn., R.H.C., France.
- 324868 Cpl. Ralph W. Brown—55 Battery, C. F. A., France.
- 324876 Gr. W. R. Brown—66 Battery, C. F. A., France.
- A11013 Sgt Hugh F. Christie—P. P. C. L. I., 4th Co'y, France.
- 324872 Bomb J. F. Clare—66 Battery, C. F. A., France.
- 307629 Bomb R. C. Copeland—D Battery, 7th Brig., C. F. A., Witley Surrey, Eng.
- 307610 Dr. R. R. Corbett—43rd Howitzer Battery, C. F. A., France.
- 525151 Pte D. Dodding—C. A. M. C., 10th Bn., C. R. T., France.
- 302377 Dr. Cecil I. Delworth—30th Battery, C. F. A., France.
- A11016 Pte N. A. Dickson—P. P. C. L. I., B. E. F., France.
- 411011 Sgt. E. R. Donaldson—No. 1 Co'y P. P. C. L. I., B. E. F., France.
- 324854 Sig. G. R. Edwards—55 Battery, C. F. A., France.
- 475303 Cpl John H. Erb—No. 2 Co'y P. P. C. L. I., B. E. F., France.
- 324871 Dr. W. Fairles—66 Battery, C. F. A., France.
- 475317 Pte D. S. Fidler—P. P. C. L. I., Can. Officers Training School, Bexhill-on-sea, Eng.
- 324863 Gr C. F. Flemming—66 Battery, C. F. A., France.
- 690354 Pte M. W. Fisher—54 Battalion Canadians, B. E. F., France
- 324873 Gr. W. A. Hammond—55 Battery, C. F. A., France.
- 335005 Gr. C. W. Hoard—8th Brig, Ammunition Column, C. F. A., France.
- 302396 Gr. H. L. Irwin—30th Battery, C. F. A., France.
- 324888 Sgt. W. J. B. Kay—13th Brig. Headquarters, C. F. A., France
- 335070 Sig. G. E. Lavis—D Battery, 2nd Brig., C. R. A., Milford Camp, Witley, Surrey, Eng.
- 411000 Pte W.B. Leach—c-o C. F. C. Base, Smith's Lawn, Sunningdale, Berkshire, Eng.
- 324861 Sgt. L. C. Long—55 Battery, C. F. A., France.
- 690369 Pte N. A. Marshall—54 Battalion Canadians, B. E. F., France.
- 325011 Gr. H. J. Maybee—E Battery, 2nd Brig., C. R. A., Witley, Surrey, Eng.,
- 324869 Gr. J. A. MacAdam—55 Battery, C. F. A., France.
- 324897 Cpl. D. C. McArthur—55 Battery, C. F. A., France..
- A11012 Pte. M. E. McGuire—7th M. G. Co'y, C. E. F., France.
- 321869 Gr. H. S. McWhinney—24th Battery, C. F. A., France.
- 324885 Gr. C. W. Riley—66 Battery, C. F. A., France.
- 524895 Gr. C. F. Shaw—66 Battery, C. F. A., France.
- 529257 Pte. H. J. Shaw C. M. C. Depot, Army P.O., London, England.
- 324858 Pte. H. E. Stevenson—55 Battery, C. F. A., France.
- 249096 Gr. A. L. Watt—66 Battery, C. F. A., France.
Gr. H. H. Woolley—Depot Battery, C. R. A., Witley, Surrey, Eng.
- 324930 Gr. G. R. Davis—66 Battery, C. F. A., France.
- 258390 Cpl. Ernest Roy—No. 2 Co'y, C. R. T., B. E. F., France
H. David Wallace—Battery B., 20th Field Artillery, Camp Funston, Texas.
H. J. Sullivan—Ft. Sam Houston, Texas, 19 F. A., Battery F.

- Cadet T. M. Steele—No. 7 Flight B Squad, No. 1 Cadet Wing, St. Leonards-on-sea, Sussex.
- Prob. Flight Officer R. K. Brydon—c-o W. J. Cartmel Esq., Can. Northern Railway Office, 21 Charing Cross Rd., London, Eng.
- Lt. Geo. A. Ames—c-o Royal Bank of Canada Bank Bldgs, Princes St., London, E. C., Eng.
- Lt. Geo. F. Brooks—c-o 62 Carling Road, West Green, London, Eng.
- Lt. Richard Brown—C. A. S. C., 4th Divisional Train, B. E. F., France.
- Lt. E. T. Chesley—2nd Brig., Reserve Artillery (siege) C. E. F., Witley Camp., Sussex, Eng.
- Lt. C. W. Duff—4th Can. M. G. Co'y, 2nd Canadians B. E. F., France
- Lt. H. G. Kent—c-o Dominion Bank, 73 Cornhill, London, Eng.
- Lt. R. C. Merrick—Kitchener—Military Hospital, Brighton, Sussex, Eng.
- Lt. H. W. Pearson—Royal Flying Corps, c-o Air Board, Hotel Cecil, Strand, London, Eng.
- Lt. B. W. Ware—87 Harvard Court, West Hampstead, N. W., London, Eng.
- Lt. A. B. Raymond, (Prisoner of War in Germany.)

DR. JAMES MILLS, L.L.D., COLOSSUS OF CANADIAN AGRICULTURE.

AN announcement in the November issue of RURAL CANADA styles Dr. James Mills, of Ottawa, formerly President of the O.A.C., a veritable Colossus of Canadian Agriculture, in fact points the Doctor out as a world figure in Agriculture.

The announcement is preceding a series of articles which will appear in

that magazine in the form of a character sketch and semi-autobiography of Doctor Mills. The purposes of the articles are to serve as an inspiration and a guide-post for the direction of farm boys who will become the leaders in the big work of to-morrow in Agriculture and in other lines of endeavor.

In an interview with Mr. Nixon, Editor-in-Chief of RURAL CANADA the O. A. C. Review learned that he had gotten the desire to publish this series of articles after having read "The Autobiography of a Farm Boy" published by Doctor Roberts, President Emeritus of Cornell University, College of Agriculture, and he felt that some fitting recognition of a similar nature should be accorded to Doctor Mills and be published while he, Doctor Mills, yet lived and could appreciate it.

In times like these when the strong men of the nation are standing out as never before and all the people are looking to the strongest men to lead them, it is assuredly worth while to look back over the life or career of a truly great man like Doctor Mills and have determined in so far as may be at least some of the outstanding factors which shaped his course.

In his announcement, Mr. Nixon points out that possibly the greatest characteristic about Doctor Mills, as those who know him best remember him, was his enduring determination to so fit young men and to so turn the courses of their lives that they would be strong factors in the upbuilding of Canadian agriculture and of rural home life, so that marked improvements might be brought about in the rural social conditions, and life in the country be made all that it should be, the best life, most worth while living.

Mr. Nixon extends an invitation to those who knew Doctor Mills and who

appreciated and profited from his help and influence to send him notes about this greatest man in Agriculture, in order that as much interesting material as possible may be gathered together from which to construct this series of articles to a point where they will be good enough to stand for all time to come as worthy of the great work and the far-reaching influence of this great man, Dr. James Mills, a veritable Colossus of Agriculture.

Chas. C. Nixon, B.S.A. '07, according to mention in the advertising journals has climbed up out of advertising and into his old love of editing again, he now being the Superintending Editor of EVERYWOMAN'S WORLD and is also Editor-in-Chief of RURAL CANADA for WOMEN, his new magazine.

His old class mates of '06 and '07 and his friends will wonder how Charles has developed the nerve to "face" his audience—as it is now said to total approximately one million people everywhere throughout Canada, who read these two Canadian home magazines.

The following interesting news of an O.A.C. boy of year '18, has been received from H. W. P. Chesley,

Dept. Militia & Defence,

Ottawa.

Ottawa, Nov. 10th, '17
Gunner Edward Chesley, '18, eldest son of Mr. H. N. P. Chesley, has been granted a Commission in the Canadian Artillery (Siege Battery), C. E. F., on the 4th August last. At the end of a year's course at the Ontario Agricultural College, Guelph, he accepted a temporary position at the Ottawa Experimental Farm but resigned and enlisted as a Sergeant in the 32nd Field Battery, C. E. F. after qualifying at the Royal School of Artillery,

Kingston. In December, 1915, he went overseas with a draft as Sergeant, but becoming dissatisfied with the long detention at Shorncliffe as a Non-Commissioned Officer, he threw up his stripes and went to France as a Gunner. After serving a year in France with the 25th Howitzer Battery, he was selected for a course in the Officers' Training Corps in England at Shorncliffe, Maresfield and Lydd.

Gunner Chesley's younger brother Leonard, after graduating from the R. M. C. in August last, was granted a Commission in the Imperial Royal Garrison Artillery and is now at the front. The brothers met for twenty-four hours in London after a separation of over two years.

KILLED IN ACTION.

Official word has been received by Mr. S. Harrop, Parkhill Farm, Milton, that his son Bomb. Cedric Harrop, was killed in action on October 28th, 1917.

Bomb. Cedric Harrop was a member of Class '18 at Ontario Agricultural College, and while there he was loved by all who knew him.

He enlisted early in the war and had been nearly two years in the firing line without leave of absence.

The Review extends its heartfelt sympathy to Mr. and Mrs. S. Harrop in their sorrow in the loss of their son.

ENLISTMENTS.

T. H. Shields, '19 has enlisted with the R. F. C. at Peterborough. Tom attended college in the fall of 1915-1916. He was a genial fellow, an energetic worker in his studies and in sports. The excellent attendance at Sunday morning Bible study, was largely due to Tom's cheerful call. We wish him every success in his new enterprise

and we have every reason to believe he will rise to lofty heights.

Hamilton, '20, enlisted with the R. F. C. at Toronto as a cadet.

Mr. R. W. Hodson, B.S.A., '08, of North Battleford, Saskatchewan, visited the college recently. Mrs. Hodson and son Allen, accompanied Mr. Hodson and were the guests of her parents, Mr. and Mrs. Hunt.

Mr. Hodson is a graduate of Ontario Agricultural College; and while at the college was prominent in Athletics, winning many prizes. He was also the winner of the Barton Hamer Gold Medal, for the highest aggregate in the final competition for the Bronze Trophy won by O. A. C. students at Chicago in 1906. He is a prominent breeder of pure bred stock; and carries on a seed business on his large farm near North Battlefield.

Gnr. W. J. Tawse, No. 335042,
1st Canadian D. A. C.,
B. E. F., France,
Oct. 18th, 1917.

Dear Mr. Hunt:—

In the first place I must thank you for this bundle of papers as out here they are very interesting and Bob and I found the Mercury even more so as the bowling teams and the scores were given. The next thing is an abundance of news as the fellows are all in it around here and we constantly meet more of them. (Lt.) S. T. Freeborne, '15, is near here in command of an "Archie" Battery protecting an observation balloon.

(Lt.) T. W. Morse, '16, and (Lt.) J. P. Hales, '15, are on this line so we hear, and the others met Cowan and Dick Sands up in the town yesterday. The fellows in the 55th and 66th Batteries are sure seeing the sights. W.

Bennett '16 and Douglas Smith '15, look fine and say they have every crumb gathered in the line to say nothing of the other things. I was sorry to hear poor Mac got his but that is the one part of this show we regret to say will happen.

I am in a different sub. to the others and in fact we are distributed all around, but I have a good bed and a fair boy with a bartender and a traction engine expert as mates. They are both fine fellows and we don't find time dragging for all the nights are getting pretty long and the rains here last week made the place a sea of mud. Lately the weather has been fine and the French are taking up their roots.

Well what about the war, you people know more than we do, but it looks like a long trip to me as Russia has got more than we thought for Fritz sure is taking advantage of her poor condition.

I believe Fritz is worse off though than we really know, as the reports show his new tactics of blockhouses are poor affairs and I believe the coming of the Yankees will settle his hash even without the Bear.

I see by the papers, conscription is having a hard fight and even now after being signed, the machine is slow to start. Figures given in American papers show though, that the flow of new men must jump by thousands or else this army of ours, small as it is in comparison with our hard fighting Imperials, will cease to be active. Really it would make you marvel to see the way the British army has been formed and equipment produced in such marvellous quantities, to say nothing of the shells. Then look where it is strewn all over the world, and even helping Russia. When all the particulars are given out, it will make these pacifists look sick.

I have been receiving mail galore lately, and after the long break it is very welcome. I have all the joys to be got this way and my mules are a great pair. I must now fall in on this parade and "Carry On."

Give my best wishes to the others on the staff. Best regards to you and Mrs Hunt. and thank you ever so much for the papers.

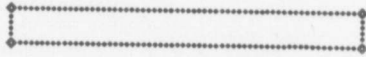
Sincerely yours,
W. J. Tawse.

MARRIAGES.

NEELANDS—MACMURTRY.

A very pretty wedding took place at Moose Jaw, Sask., on Sept. 26th, 1917, when Miss E. Helen MacMurtry daughter of Dr. and Mrs. MacMurtry, of that city, was united in marriage to

Mr. Clare F. Neelands, B.S.A., '14, of Burwash, Ont. The bride, who was given away by her father, was attended by two little flower girls. The bride looked charming in a brown tailored suit edged with fur and hat to match, and carried a bouquet of yellow roses. Only relatives and intimate friends were present at the ceremony and luncheon held afterwards at the home of the bride. During the signing of the register, Miss Helen Ramsay sang "Because" very beautifully. The groom's gift to the bride was a platinum lavalier set with diamonds. The gifts to the flower girls were signet rings and to those assisting, pearl ear rings. Mr. and Mrs. Neelands left that evening for an extended trip to the States.

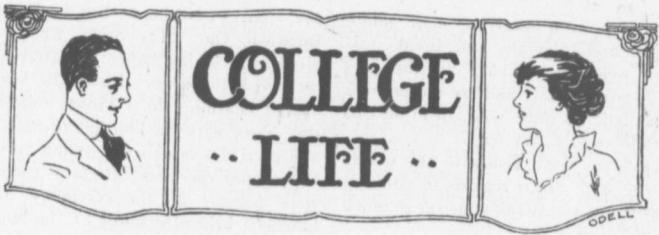


A YULE-TIDE GREETING.

Once Gaspar, Melchior, Balthasar, three Kings
Of Orient, journeying o'er the desert came.
Before them glowed always a wondrous flame—
A star, some said, and some, a seraph's wings.
Anon their steps to Bethlehem's town it brings.
There, at the feet of Him of hallowed name,
To tarry whiles and kneel they thought not shame,
With gifts of gold and such-like goodly things.

Fair maid or matron, yea, or goodly sir,
May all things be with thee as these things were.
Approach and kneel and, of sweet reverence,
On Him, like those, in loyal guise confer
The goodly savor of thy frankencense,
The streaming odors of thy fragrant myrrh.

GARRIOCH GUNN,
(in the Westminster.)



UNION GOVERNMENT PASSES
ITS IMMIGRATION BILL.

TO EXCLUDE ALL ALIEN ENEMIES AND
COLOURED RACES AFTER THE WAR
SERIOUS CHARGES BROUGHT AGAINST
OPPOSITION LEADER.

Premier Mitchener — Enemy countries to-day are striving to overthrow those countries which are battling for equal rights for all. They have ideals and customs which are as different from ours as is the East from the West. We believe that right and not might must sway out destinies. Shall we allow our souls to be changed by the subtle influence of the foreign immigrant? Never! Better a thousand times that Canada should remain undeveloped than that this should come about. Then let us keep them out and keep them out forever. The passage of this bill will do that and I call upon you to make it certain that Canada shall be for men who cherish those lofty ideals which have made the Britisher respected the whole world over.

Nov. 3.—To-night the Union Government, which was formed a few weeks ago, passed its immigration bill by a ma-

majority of twelve. The measure includes (1) all coloured races and (2) all alien enemies, from Canada after the war.

Discussion on this important bill called forth one of the liveliest debates and some of the most eloquent speeches ever witnessed in parliament. In his usual forceful manner Premier Mitchener opened discussion by pointing out the extreme necessity of putting some restraint on alien immigration, citing localities where, "colonies of aliens are resisting being taught English," how alien enemies with ideals and principles so different from ours could not become assimilated with the Canadian people; how keeping out these and the coloured races would largely solve the slum problems of our cities. (Applause).

The Premier was well seconded by the Hon. Minister of Labour (Mr. Arnold), who explained what peoples were included in the so-called coloured races, mentioning the fact(?) that Hindoos were excluded being of white stock. (Applause). He also discredited the fallacy of cheap alien labour claiming that these raise their prices after they get the jobs and citing Chinese laundry-men as an example.

But the opposition were alive to conditions and in three well directed speeches disputed the wisdom of the Government and severely criticised their war-time bill. James asked why deal with after-war bills when win-

the-war measures are so urgently needed. The Opposition Leader ("Scotty" Maclean), unsatisfied with the explanation by the Minister of Labour, claims that Hindoos, who are British subjects, will be excluded by the bill as will also our allies, the Japs. Mr. "Dad" Gowland then moves indefinite postponement of the bill and is seconded by "G. R." Wilson.

The Hon. Postmaster General (Mr. Frey), heads discussion against the amendment. He strongly argues, amid taunts and interruptions from the opposition, that, "The Military Service Act recently passed by this Govt. will ensure Canada doing her part to win the war. Now we look ahead and prepare for after-war conditions." Jackson and Lowell also urge foresight and immediate passage of the bill.

Scales (opposition) retaliates, charging the Government with the failure of the Fourth (?) Canadian War Loan and pointing out the thrift and economy of our alien population (applause); while attributing some very very doubtful virtues to the English and Scotch. (Loud thumping from Govt. benches).

Jones (Member from Wentworth) then put before the house some very startling evidence, wherein he produced a signed affidavit from the Minister of Militia to the effect that, he, the Minister of Militia, had been approached by the Leader of the Opposition, who offered him a huge bribe of public money, (groans from the opposition) if he would join the ranks of the opposition. This charge being so serious, was referred at once by the speaker to a committee representing both sides of the House.

After prolonged discussion and many troublesome questions, the bill was finally passed by the Government.

A second measure entitled "An Act

to aid Agricultural Education" was held up by the lengthy speeches of the opposition till the automatic adjournment of the house at 10.00 P.M. The Government was then unable to bring the bill to a vote; although an attempt at "closure" had been made by the Premier.

Three capable Cabinet Ministers upheld the bill for the Government namely: F. L. Ferguson, R. A. Brink, and R. W. Oliver; while the opposition put up such worthies as G. R. Wilson, W. C. Hopper, "Joe" Waterman and F. G. Hunter.

Professor Jones, in the critics remarks, spoke very highly of mock parliaments in general and of the present one in particular and also offered a few suggestions of improvement for future sessions.

The House adjourned after singing the National Anthem.

THE CRICKET ON THE HEARTH

Dickens' Christmas story "the Cricket on the Hearth" has completed a very successful season at O. A. C. and vicinity. It has now been staged four times by the O. A. C. Dramatic Club, and on each occasion gains in popularity. In August the play was staged under the direction of the Rural Sociology Department before the teachers and preachers who attended the Summer Course at the college. Under the auspices of the Philharmonic Society it was repeated, on November 16th. At this performance the college orchestra furnished musical numbers of excellent quality. The proceeds above expenses were used for soldiers comforts.

The fame of our troupe quickly spread and within a week three requests for the repetition of the play were received. Arrangements were made for the acceptance of two calls

and on Tuesday, November 20th, the play was presented to a very large audience at Rockwood, under the auspices of the Red Cross Society of that town. The next evening, November 21st, it was again staged. This time at the Military Convalescent Hospital before the returned soldiers. The College Orchestra was in attendance here and provided the musical numbers.

The Dramatic Club wish to thank all those who helped to make the play the success it was. Special credit is due Messrs. W. L. Iveson and G. H. Unwin and J. B. McCurry, who bore the burdens of director, critic and manager. Mr. F. L. Ferguson acted as prompter and E. S. Snyder with the help of D. J. Matheson and E. J. Quail, managed the stage and scenery. Much assistance was given by Messrs. J. McLean, G. S. Fraser, and D. J. Patterson, who took part at the theatre of the Military Convalescent Hospital. We also wish to thank Professor W. H. Day and Mr. Preston Taylor and Mr. Clark for the use of their cars in conveying the players to the various theatres.

The cast was slightly different on each occasion owing to the absence of some of the regular players, but the substitutes proved themselves very capable. Following is the regular caste and substitutes:

John Perrybingle (carrier)	J. R. Almey
Mr. Tackleton (toymaker)	J. B. Munro
Caleb Plummer (his man)	A. M. Porter
Old Gentleman	G. H. Scott
Porter	E. S. Snyder
	D. J. Matheson
Dot's Father	G. S. Grant
Dot (Mrs. Perrybingle)	Miss Hamilton
Bertha (Caleb's blind daughter)	Miss D. Day
	Miss J. Austin
Mrs. Fielding	Miss A. Purdy

May Fielding	Miss G. Hamilton
Tillie Slow-boy	Miss J. Gardiner
Mrs. Dot	Miss J. Bowman

All the players acted their parts with natural ease and ability and some showed exceptional talent. Tillie Slow-boy had the audience at her command and brought forth many peals of merriment and applause as she performed the duties of kitchen girl. Her tears also brought forth the sympathy of the audience as she and Dot wept their pathetic duet in the third act. Dot was splendid in all her actions. Her quaint costume and dainty appearance harmonized well with the little home she cared for. Bertha, in her blindness, had the real sympathy of all during the whole evening, for no one could believe but that she was actually blind. Her facial expression was perfect, her eyes uncanny and her step well suited to the part she acted. The tragedy of her dark life appealed to all.

Caleb Plummer could not have been more real even in Dickens' time than he was in the play. He was a most pitiable, loveable and kindly old fellow. His lot was hard but he always kept cheerful. He saw beauty even in the most common things and translated all the beauty he saw and more, to his blind child. He was one of the most genuine characters we have ever seen on the stage at the college. John Perrybingle played his part in real English fashion. His voice and action were well adapted to the part. There was the slow plodding faithful manner about him that gave weight to the play and the audience was with him to the end. Tackleton was a most villainous character. His heartless manner gained him the hatred of the audience from the very first and during the whole play his presence suggested trouble for someone. No one

loved him but poor Bertha, and no one was sorry when he was disappointed in his love-quest. He played his part well and without the sympathy of the audience. The Old Gentleman was a capable actor and he filled the part well. As Bridegroom he did even better and with May Fielding did the villain out of his objective.

Those who took the minor parts were well up to the standard. Their ability was only limited by the brevity of their parts. We wish to congratulate all connected with the play on their success in its presentation and on their strenuous work in staging it so often in the interests of the Red Cross, the Soldiers Comforts and the Returned Soldiers.



RUGBY

O. A. C. vs ST. JEROME'S, OCT. 24

After the easy win at Woodstock; the rugby team seemed to get the idea that work wasn't necessary and this showed plainly when the St. Jerome's team from Kitchener, visited the college on Wednesday, Oct. 24. The visitors played snappy football and though considerably lighter than the College team, more than held their own on the line. In the first quarter, St. Jerome's scored a touchdown on a criss-cross by the halves. That ended their scoring but they were dangerous all the time. In the second quarter O. A. C. pressed the play and Cutler of St. Jerome's was thrown over his own line, for a safety touch. There was no scoring in the 3rd quarter and in the final session Sirrs of O. A. C. kicked to the dead line for the final point. The game ended with the O. A. C. in possession of the ball 35 yards from St. Jerome's line, the score being 5-3 in favor of St. Jerome's.

The ball was wet and heavy and Sirrs couldn't get as much distance into his punts as Cutler, who, along with Berger and Hawkins, starred for St. Jerome's. O. A. C. lined up:

Flying wing—Michael.

Halves—Shales, Sirrs, Stirrett.

Quarter—Musgrave.

Scrimmage—Almey, Minielly, Sippel

Insides—Alexander, Malyon.

Middles—DeLong, Anderson

Outsides—Stillwell, Shoemaker

Spares—McKenzie, Brown, Frey

Referee—Prof. Squirrell, O. A. C.

Umpire—Ford, St. Jerome's.

ST. JEROME'S vs O.A.C. AT KITCHENER

Although our boys were defeated the previous Wednesday, they felt that they were able to put up a stiff fight, if not win from St. Jerome's, on their own ground. They were not successful in defeating the Saints but put up a much superior exhibition than in the previous game. A large number of the student body accom-

panied them to Kitchener, which evidenced our faith in our players.

It was not an ideal day for the game as it turned out showery in the afternoon. This was an important factor in the game, as the grounds were very slippery. The game was played in 12 minute quarters, which proved beneficial to the opposing players as they were not able to stand the grind as well as the "Aggies."

Michael and Musgrave starred for the O. A. C. while Cutler, St. Jerome's centre half, was always a dangerous opponent. The final scores was 3-0,

Insides—Steckle, Delong
Middles—Minielly, Alexander
Outsides—Stillwell, Shoemaker.

O. A. C. VS WESTERN UNIVERSITY IN LONDON.

After suffering two defeats in one week at the hands of St. Jerome's, it was a rather quiet lot of pigskin chasers that left Guelph on the morning of Nov. 3rd, to represent the O. A. C. on the Tecumseh Park Gridiron.

By a fortunate combination of circumstances the team arrived in London shortly after 11 o'clock, half an



OUR RUGBY "SQUAD."

in favor of St. Jerome's, made up of three punts to the dead line by Cutler. O. A. C. made a spectacular finish in the last quarter by forcing the St. Jerome's boys back from centre to within a yard of their line when time was called.

Officials, Referee, Ford, St. Jerome's.

Umpire, S. H. Gandier, O. A. C.

Line up:

O. A. C.

Flying wing—Michael

Halves—Shales, Sirrs, Lindala

Quarter—Musgrave

Scrimmage—Almey, Anderson, Brown

hour ahead of time. Dr. Neville and Art Smith had procured cars and after dinner the O. A. C. men were taken around the city and shown the chief places of interest.

The game was called at 3 o'clock. London kicked off and got possession almost immediately on an offside. Smith bucked for yards, Kingswood bucked and hurt his ankle, and Smith bucked over for a touch which was unconverted. Kingswood retired. O. A. C. kicked off and forced the play and Shoemaker kicked over the line, Stillwell and Almey forcing a rouge.

In the second quarter O. A. C. worked the ball down the field, and Shoemaker and Smith had a punting duel with the honors about even. Finally Michael bucked over for a try which was not converted. Early in the second half O. A. C. forced another rouge. A little later Shoemaker juggled a long punt behind his own line and was tackled before he could run it out. He was hurt in the tackle but stayed in the game. In the fourth quarter, however, he was forced to retire and was replaced by Shales. Sirrs took over the kicking and Michael playing outside got under a high one and took it over the line while the London halves were doing the "Alphonse Gaston" act. The game ended with the score 12-6 in favor of O. A. C. and is the first time in many years that a Guelph team has won a rugby game in London.

Art Smith, always a hard man to stop, and a sure tackle, starred for London and Michael was the big man for O. A. C. All the team played hard and showed marked improvement. Alexander was hurt but finished the game.

Line up:

Flying wing—Michael.

Halves—Lindala, Sirrs, Shoemaker.

Quarter—Musgrave.

Scrimmage—Almey, Brown, Cass.

Inside wings—Delong, Steckle.

Middle wings—Minielly, Alexander.

Outside wing—Matheson, Stillwell.

Spare—Weber, Shales, Frey.

O. A. C. vs. WESTERN UNIVERSITY IN GUELPH.

The weather was all that could be desired from a spectator's point of view, when O. A. C. and Western lined up on the College campus at three o'clock on Saturday, Nov. 10th. The boys from London went at it with a

rush, and profiting by a forward pass, got possession 25 yards out, Smith kicked over, Shoemaker made his only fumble of the afternoon, and though he recovered was forced to rouge. Western did not tally again till the last period. O. A. C. scrimmaged the ball on the 25 yard line and took it down the field with a succession of rapid fire bucks that tore big holes in the Western line. On the Western 8 yard line the "quarrel scene" was staged and in the confusion "Little Bill" Michael stole over for the first try. Smith kicked off to Sirrs who ran it back ten yards. Bill Michael broke away for a 40 yard run and Delong and Steckle contributed 30 yards more. Then Minielly bucked over the line for another touch. Just before quarter time Shoemaker kicked to the deadline for a point.

In the second quarter Steckle and Musgrave secured touchdowns, while Western seemed paralysed. Brickenden received a long pass but Matheson was on the job and flopped him before he could wiggle a toe. Western lost a golden opportunity to score when they perpetrated a forward pass on O. A. C.'s 15 yard line. In the third quarter Stillwell distinguished himself twice by scooping up a fumbled ball. Michael scored another try on a tandem buck and just missed a second one when Brickenden secured Musgrave's outside kick on his own line, Smith kicked to Shoemaker who made the prettiest play of the year when he kicked a field goal from 35 yards out and well to the side.

In the last quarter O. A. C. scored two tries, one when Sirrs went round the end while most of the London team were endeavoring to stop Michael who did not have the ball; and the other when Michael tackled a Western half back so hard that he dropped

the ball and Musgrave picked it up and carried it over. Western seemed to come to life then and Smith kicked over the line when Shoemaker's kick was blocked and again after Brickenden made a 35 yard run. The game ended with O. A. C. in possession on Londons 30 yard line. Score 41-3.

Line up:

Rover—Michael.

Halves—Lindala, Sirrs, Shoemaker
Quarter—Musgrave.

Scrimmage—Almey, Brown, Malyon.

Insides—McKenzie, Steckle.

Middles—DeLong, Minielly.

Outsides—Matheson, Stillwell.

Spares—Cass, Frey, Shales.

RUGBY

YEAR '19 VS. COMBINE.

On Saturday afternoon, Nov. 17, the third year lined up a rugby team against one from the other years combined. The Juniors had many of the wing men from the College team while the Com-Unions had the back division intact. Cap. Gandier handled the game perfectly and dealt promptly and efficiently with all breaches of the rules. The weather was perfect for the spectators who enjoyed the play very much. Some weird rugby was shown interspersed with flashes of brilliant play. The Combine aggregation essayed an onside kick within their own 10 yard line and lost the ball. The Juniors attempted to buck 10 yards on the last down, and . . . failed. However, Clemens and Rodney Graham did some nice tackling, Stillwell and Bob Almey showed good form and worked hard. The first half was scoreless, but Shales kicked twice to the deadline in the 3rd quarter, and in the final spasm Bob Almey tore a hole in the centre of the line and Stillwell ran 30 yards for the only touch-down of the game. Shales failed to

convert when Minielly let the ball go too soon, and one of the pair made a forceful remark.

Junior line up:—Minielly, Shales, Light Matheson, Stillwell (Capt) Almey, Hunter, Cook, Cass, Anderson, Steckle, McKenzie, Allan.

Union line up:—Graham, Lindala, H. H. Taylor, Shoemaker, Sirrs, Chamberlain, Cohen, Clark, Stock, Currier, DeLong, Frey, Clemens, Hall.

INDOOR BASEBALL

JUNIORS VS. SOPHOMORES.

The second game of the season was between the above mentioned teams. Both are lacking many of their old players of last year, although the Sophomores have a great acquisition in E. W. Weber, who was their star performer on this occasion, his pitching being the deciding factor in the game. The Juniors feel keenly the loss of Atkins at first base, and Ziegler at second, who were both towers of strength on their team of last year. Frey, the Sophomore catcher, is developing well and has a good influence on holding his colleagues. The Juniors were notably weak in batting, while their opponents hits were timely. The prospects for an interesting baseball season next term, are quite bright. Score 6-2 in favor of Sophomores.

Battery, Juniors—Higgins, Brink and Odell. Sophomores, Weber and Frey.

THE TRACK

Perseverance is the keynote to success in any line of work and is of great importance in Athletics. It has its rewards but seldom does it lavish them so bountifully on one individual, as it has this term, in the person of G. S. Grant.

At our annual outdoor meet he came first in three of the most trying events, the half-mile, one mile and three-mile

paces, and was one of the members of the winning relay team. To be able to accomplish such a record as this, one must not only be in the best physical condition, but must have his wits about him at all times, and this was chiefly evidenced in the case of Mr. Grant. One newspaper reporters'

around the college to be the most trying ordeal of any.

The Athletic Association is willing to recognize a winner in any case, but have a certain feeling of satisfaction when the prizes which they donate are merited not simply because the recipient came first, but that he came first, as a result of training, not for a few days previous to the event, but for months, as was the case with the above individual.



G. S. GRANT

comment was as follows: "The feature of the day was Grant's heady running" At the annual Cross-country run, he showed his superiority by coming out a winner. This race is conceded by all who follow Athletics

BASKETBALL.

The basketball season opened with 2nd year taking the long end of a 28-8 score from the 1st year. The freshmen scored first, but lack of experience told against them when the sophs began to work their combination and roll up a score. Weber of '20 showed speed and is a fair shot. Sirrs of '21 scored six foul shots in professional style, only missing one. Line up:—

Year '20, Weber, Smallfield, Pegg, Frey, Hamilton.

Year '21, Cole, Clemens, Barber, Sirrs, Clark.

Referee, J. Baker. Judge of Play, A. H. Musgrave.

BASEBALL.

3RD YR. VS. 4TH YR.

3rd year won from 4th year by a score of 11-9. The game was one of the most exciting seen this fall, the teams alternating in the lead and the issue being in doubt till the last man was put out. Michael batted and ran bases well for the Seniors, and Odell made a nice play when he caught O'Neill off 3rd base.

Umpires—King and Fulmer.

QUERY

QUERY.

WINTER INJURY TO FRUIT TREES

QUESTION: We have forty young fruit trees, set out three years ago, six of apples, six of pears and the remainder cherries. They are near the bush in which there are wild rabbits. During the winters we have had rags wrapped around the trunks which were taken off in the spring. The bark on some of these trees, particularly the cherries, is splitting open. Was this caused by the rags? What could we do to keep the rabbits from injuring these trees. We have also fourteen young silver maples set out last spring. Will the rabbits injure the bark of these? Our neighbor has tried tar-paper but it was not satisfactory. V. K.

ANSWER: It does not seem at all likely that the bark splitting was caused by the wrapping with rags, although I have seen serious splitting occur where tar-paper was used. In this particular case, I believe the splitting was directly caused by the tar-paper, on account of its dark colour which draws the heat of the sun. A tree trunk wrapped with tar paper becomes very hot in the day time, and cools at night perhaps to the same point as an unwrapped trunk. It is the fall of temperature and the contraction of the bark accompanying same, that causes the splitting. The use of light coloured paper, such as gray building paper, or even newspaper, does not cause any such injury. It is possible that the rags used by you were dark or black in colour, in which case one

might get somewhat the same result as in the case of tar-paper already referred to. As already stated, wrapping with gray building paper is entirely satisfactory, the former particularly. Wire screening is too expensive although very effective. Galvanized screening will last much longer than the ordinary black variety.

I do not think rabbits will eat the bark of Silver Maples, but would not say definitely. Why not shoot the rabbits? The law permits the destruction of these animals at any season of the year on one's own property if they are doing damage.

It is possible that the bark splitting may have another indirect or contributing cause—forcing of the trees into strong growth. If trees are encouraged into rapid growth by late cultivation, or by heavy feeding, they are much more likely to suffer from bark splitting, or other forms of injury caused by winter cold. I should, therefore, advise that if these trees have been over stimulated, the treatment should be somewhat moderated. J. W. C.

ROUP.

QUESTION: My hens have the roup and after having given them all the so-called "cures" we know of, have noticed no improvement. Our turkeys are also troubled but do not swell about the heads nor emit any bad odor. They refuse to eat and make a noise in their throats when they breathe, dying as a rule, in two or three days. P. McG.

ANSWER: The first thing to do in a case of this kind is to try to remove the cause and then isolate the afflicted birds by putting them in a separate pen. The causes of roup are commonly damp houses or damp litter in the house, or draughty roosting quarters. The disease is spread from one bird to another through the drinking water. The treatment is as follows: Remove the sick birds and give them a dose of Ep om Salts at the rate of one pound per one hundred birds twice weekly, and give them water to drink, which contains enough potassium permanganate to colour it. In addition to this, if you feel disposed to go to the trouble, procure some eucalyptus oil and inject a little up the nostrils and the cleft of the roof of the mouth. It would be well also to rub a little around the birds' head. Use air slaked lime freely on the dropping boards where the manure falls. It would be advisable also to give potassium permanganate to the healthy birds in their drinking water. W. R. G.

BUMBLE FOOT.

QUESTION: One of my oldest roosters has developed a sore foot, and my attention has been drawn to a neighbour's bird in the same condition. The toes are in a perfect condition and the swelling seems confined to the sole of the foot. It appears to be very sore, the bird limps very badly. Otherwise the bird is in good health and has a good appetite. M. McD.

ANSWER: The sore foot on your chicken is what we term bumble-foot, which is similar to a stone bruise on a human being. The following treatment is usually given. Tie a cord tightly around the leg above the foot to control the flow of blood; then with a clean, narrow bladed, sharp knife open up the abscess thoroughly. Go

clear to the bottom and dig out the core. Then follow in detail, omitting nothing except 3, the treatment given for wounds. Two days after the first treatment, take off the bandage and repeat the treatment. In some cases a third treatment after a lapse of two or three days may be necessary, but usually not if the first treatment is thorough.

The treatment of cuts, tears and all open wounds. Very severe wounds may be successfully treated by adhering to the following procedure:

1. Thoroughly wash the hands in warm water, using plenty of soap, before handling the wound. Rinse the hands thoroughly in a pan of 1-1000 bichloride of mercury solution and dry with a clean towel.

2. Pull out the feathers in the region of the wounds and thoroughly rinse it, using first warm water and following with 1-1000 bichloride of mercury solution. A piece of clean soft cloth may be used for this purpose or absorbent cotton. Make sure that the wound is thoroughly clean. Do not be afraid of hurting the bird a little pain at the start is preferable to a dead bird later.

3. If necessary sew up the wound, using a good sized sewing needle and silk. Both needle and silk should be soaked in alcohol for fifteen minutes before using. Small wounds need not be sewn, but large ones will heal more quickly and more surely if they are sewn. If the wound involves the muscles as well as the skin, sew it up in two layers, one set of stitches including only the muscles, and the other set only the skin.

4. Paint the skin in the region of the wound, but not the wound itself, with dilute tincture of Iodine.

5. Powder the wound well with iodiform.

6. Smear a thick layer of ointment (see below) over all.

7. If the wound is very severe bandage it with a clean cloth.

An antiseptic ointment for use on cuts and wounds of all kinds.

The following ointment may be made up by poultry men and will be found useful in the treatment of cuts, sores and wounds of all kinds of poultry and live stock in general.

Oil of organum	1 ounce
Cresol	$\frac{3}{4}$ ounce
Pine tar	1 ounce
Resin	1 ounce
Clean Axle Grease	8 ounces

Melt the axle grease and resin and stir in the other ingredients. Pour off in a tin box or can to cool. In making this, clean axle grease from a freshly opened can should be used. W. R. G.

TROUBLE IN CREAM TESTING

QUESTION: In testing cream I find considerable quantities in the neck of the test bottle of dark curd-like substance below the clear fat, and I find it difficult to distinguish the fat from this; should it be included in the test? Does it affect the test when cream is sweet or sour; if cream is kept till quite sour, would it test more or less?

ANSWER: I would judge from what you say, that the dark substance below the clear fat in the tests which you make, is caused by the acid burning the fat. When adding the acid to the sample of cream, it is advisable to hold the bottle in a slanting direction so that the acid runs under the cream and does not drop through it. If you use too much acid or if the acid be too strong, it also will burn the fat. No definite amount of acid can be stated for cream. The rule is, to use sufficient acid to give a nice, clear, yellow color to the fat and if any portion of the fat is burned, or if any curd is

found either below or mixed with the fat, this should not be included in the reading.

It is important to have both cream and acid at a temperature of about 65° F.,—not over 70° F., and not under 60° F.

It should make no difference in your test whether the cream is sweet or sour. However, sour cream is more difficult to sample accurately, and consequently, the tests are more likely to be inaccurate from sour cream as compared with sweet cream. H. H. D.

HOMEMADE CHEESE

QUESTION: Please send me directions for making cheese on the farm. I was thinking of making some.

ANSWER: The chief points to observe in the making of cheese on the farm are—(1) Have clean, sweet milk; (2) Add sufficient rennet to curdle the milk in about twenty or thirty minutes; the quantity will vary according to the strength of the rennet; (3) Cut the curd with a regular cheese knife or with a long butcher knife into cubes about one-half inch square, or as near this size as you can. Have the milk at a temperature of 86° F., when the rennet is added; (4) After cutting, heat to about 98° F.; (5) In two or three hours remove the curd from the whey placing the curd on a slanting table covered with a cheese cloth to allow the whey to drain from the curd; (6) In about one-half hour add sufficient salt to give it proper taste, or about four ounces of salt to ten pounds of curd. Stir this well through the curd, then place in a hoop and apply pressure for about ten or twelve hours or longer if necessary to make cheese firm; (7) Remove the cheese from the hoop and wrap with a clean cotton cloth; (8) Next place the cheese in a cool room turn-

ing daily for about two or three weeks or a month, when the cheese should be fit to use. H. H. D.

WILL TURNIPS TAINT MILK

QUESTION: Kindly advise me as to feeding turnips to a Jersey cow immediately after milking. Will the milk taste turnips? It is a common report around here that turnips are better feed to produce cream than mangels. I feed oat chop with the turnips.

ANSWER: So far as our tests go at Guelph, they indicate very little difference as to the turnip flavor imparted to the milk, whether fed before or after milking. The chief advantage in feeding after milking is, that the flavor gets out of the air of the stable before milking time, which is the way in which the milk is chiefly tainted. A moderate quantity of turnips, say, one peck, or even two pecks per day, may be fed to a cow without causing a very objectionable taint, but we much prefer mangels for feeding milk cows, and find they are equally as good as turnips for milk production.

H. H. D.

COLD WATER METHOD OF RAISING CREAM.

QUESTION: Would you kindly give me your opinion as to the merits of raising cream by the cold water method. I have a friend who has been using this method for some years. He bought a separator and after using it a few years went back to the old method, claiming he got more cream than with the separator. He uses deep cans, having a tap at the bottom. He puts his milk in the cans, adds a quantity of very cold water and lets it stand a stated length of time—I think it is 24 hours. He then draws off the milk, leaving the cream.

We have only a few cows and as a separator is a big expense, I thought I would like to know the real merits of this system, if there are any, as it is so much less expense and less work than a separator.

ANSWER: We have tested this method at the College, and the results were not satisfactory.

There was too much of the cream, or fat, left in the skimmilk, and the skimmilk is largely spoiled for feeding purposes. For instance, if you wish to feed a calf ten pounds of skimmilk, you would have to feed twenty pounds of skimmilk and water, as obtained by the dilution method. In addition the cream is not so good in flavor when raised by this method, as cold water tends to give, both milk and cream, a flat taste.

If you do not wish to purchase a cream separator, you can get fairly good results by setting milk in common shallow pans, during cool weather, and in deep cans, put in ice-water, or very cold well water, during the warm season.

Either of these is preferable to the dilution method of raising cream.

H. H. D.

EFFICIENCY OF MILKING MACHINES

QUESTION: As we are thinking of installing a Milking Machine, I would be glad if you would let me know, first, whether a milking machine has been so perfected up to the present time as to be satisfactory and a profitable investment. Secondly; what kind of machine would you recommend. Thirdly; whether it makes any difference whether they are driven by electricity or any other power.

ANSWER: Milking Machines are still in the evolutionary stage, but are being rapidly perfected, although, at the present time, there are some

three or four machines which are being used by farmers and have been tested at the College with more or less satisfactory results.

Under farm conditions, we do not think it would pay to invest in a milking machine, except where twenty to twenty-five cows are being milked; or in cases where hand milkers are almost impossible to get, when even a smaller number of cows might pay.

It makes no difference what kind of power is used — an electric motor or small gasoline engine will answer quite satisfactorily. From one and one-half to two horse power is all that is usually required to operate the machines. H. H. D.

PUMPKINS FOR THE DAIRY COW.

QUESTION: Have a quantity of cull red carrots, pumpkins, and squash. Are they good feed for Dairy Cows, and if so, in what quantity, along with silage, cut straw and chopped grain?

ANSWER: If these are pulped and mixed with silage, cut straw, and grain, they make excellent feed for milk cows. I would advise starting on a small quantity, say, one peck per cow per day, and the quantity may be increased to as much as one-half to one bushel, per cow daily. If you have no means of pulping these, then they may be fed whole. In the case of pumpkins and squash, it is advisable to take out the seeds. H. H. D.

QUESTION: I would like some information regarding the two potatoes which the Potato Conference, held in Toronto recently, decided were the most profitable for a farmer to grow.

ANSWER: These varieties were the Irish Cobblers and the Green Mountain. The Irish Cobbler is a white potato round and flat in shape, has fairly shallow eyes, is very early in maturing, is an excellent yielder and is of good quality. Unlike most early

potatoes it keeps well late into the season, on this point it is as good as most late varieties. The Green Mountain is a white potato round and flat in shape, has shallow eyes, rather late in maturing, a good yielder and of good quality. This variety much resembles the Delaware. W. J. S.

(2) Is good Seed Corn likely to be scarce the coming season?

ANSWER: Good seed will be scarce this spring. A large amount of the Corn grown in South-Western Ontario did not mature very well the last season. Our advice would be to order your seed early and store it in a dry and if possible, fairly warm place. You would be wise to germinate this seed or any corn seed you may buy before sowing in the spring. W. J. S.

QUESTION: How many tile per acre are required to install a regular system, the tile lines being laid at the usual distances?

ANSWER:

Distance apart	Tile per acre.
6 rods or 100 feet	436
5:4 rods or 90 feet	484
4:7 rods or 80 feet	544
4:2 rods or 70 feet	622
3:6 rods or 60 feet	726
3 rods or 50 feet	871
2:4 rods or 40 feet	1089
1:8 rods or 30 feet	1450

W. H. S.

QUESTION: Please give a fair estimate of the cost of drainage per acre.

ANSWER: At 4c. per foot the cost of tiling per acre is as follows:

Distance of drains	Cost
100 feet.....	\$17.44
90 feet.....	19.36
80 feet.....	21.76
70 feet.....	24.88
60 feet.....	29.04
50 feet.....	34.84
40 feet.....	43.56
30 feet.....	58.00

W. H. S.

MACDONALD

CHRISTMAS

How few of us have outgrown our childish conception of Christmas as a time of luxury, of superfluity and of greediness!

It is the birthday of Christ that we celebrate; we commemorate the greatest self-sacrifice that the world has ever known. Is that fitly done when we receive gifts and eat more than we need? On this day Divine Wisdom came to earth; shall we spend it in foolishness? It is the children's festival and they should have a happy time, but happiness does not consist in a multitude of costly presents. Let us make Christmas more simple and more blessed. We love to give to our dear ones, but why confuse and fatigue ourselves by giving to all at once? Why not let the birthday be the occasion for the offering of affection? Let us rather give to Christ, to the poor and needy and the suffering, through whom he allows us to minister to Him. Let us dwell upon the spiritual significance of the festival and ponder the wonderful humility and love that came down to Bethlehem, and let us teach the little ones by our own attitude the blessedness of giving rather than receiving.

DAUGHTERS OF THE EMPIRE

At the end of last term the O. A. C. Chapter of the Daughters of the Empire was inaugurated, and the charter applied for. The following officers were elected:

Regent—Miss E. Hodgins.

First vice regent—Miss A. Bott.

Second vice-regent—Miss E. Nelson.

Secretary—Miss O. Lawson.

Treasurer—Miss C. Williams.

Standard-bearer—Miss M. McWilliams.

On October 16th, thirty members made the declaration of allegiance, and the number has since risen to fifty. The Chapter has adopted as its motto, that of the O. A. C.—“Nulla dies sine linea.” A very free translation of this might be, “Do your bit every day.” The members are at least doing their bit every week, for they meet on Monday evening to make various articles needed for the Red Cross. In order to raise funds to buy materials for their work a “Twilight Tea” with a programme of music was arranged for the afternoon of Saturday, Nov. 17th. Other suggested activities are an entertainment at the Hall for returned soldiers, and a visit to the Convalescent Home.

The membership of this chapter might well be increased. It is hard to understand why any girl, who considers seriously that Canadian soldiers are fighting and suffering to save her from the horrors which have been endured by girls in Belgium and France, should hold back her support and her work from any scheme which aims at mitigating the hardships of the men at the front.

A "MAC HALL" ALPHABET

By Libys Ecyob.

A is for apples which Mac girls enjoy
when 'swiped' late at night by
an O. A. C. boy!

B's for Miss Bott—who's simply a
duck

C's for the candy we buy at the 'Tuck'
D's for the doctor—his visits we shirk.
E is for Eloie—noted for work!

F is for "Feeds"—Cold chick a la
roast.

G is for garnish—to Fadd-hot toast.
H makes us think of our Hallowe'en
dance.

I is impersonal—won't take a chance.
J is for Juniors who go to bed late,
K is for kissing—which some (?) Sen-
iors hate!

N is for novelty—found all the time,
O is for onward to finish the rhyme.
P's for perhaps—we all live and hope
Q's for the queries we ask about—soap!

R is for roll-call—sleep fast instead
S is for sewing—Mat—is 'nuff said."

T's for the tea-room to test appetite
U are the one who inspired me to write.
V means that never a Mac girl is vain.
W's for wishes—just castles in Spain!

X is a secret—I'll leave you to guess
Y only means girls you must answer
"Yes."

Z brings the finish—
WANTED—a shroud—
But 'member kind readers—
No critics allowed!

THE DANCE

Translated from Clement Moore's
great masterpiece by means of a 50
cent hand pump borrowed from the
'Co-op' for that purpose, at the rate
of \$15 per minute.

'Twas the night of the dance when
all thro' Mac Hall
Not a sound could be heard, there was
not a footfall.

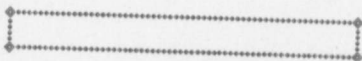
The girls in their rooms were powder-
ing with care,
Because lots of O. A. C. men would be
there.
Partly filled programmes their vanity
fed;
While visions of happiness danced
thro' each head.
But they all came, at last, to the hall,
The handsome, the plain, the short
and the tall.
When from down below there arose
such a clatter
They sprang to the well to see what
was the matter.
It was only the boys, who came up
like a flash;
While each girl gave a last loving
touch to her sash.
To secure a programme, nobody was
slow:
The boys walked around; the girls
stood in a row.
The girls were so pretty, the boys were
so nice:
The programmes, it seemed, were
filled in a trice.
The delay of the orchestra filled all
with despair,
Till, at last, sweet dance music, ban-
ished their care.
And up to the Gym, the partners all
came
To find that it somehow looked not
quite the same,
The stage was bedecked, be-palmed
and be-ferned,
While with rose-eyed delights, the
lights blithely burned,
Casting soft shadows o'er each pretty
face,
And lighting up visions of ribbons and
lace.
With Atlanta's winged feet away they
all fly,
Feeling that heaven's not all in the sky.
Catching their madness the merry
notes flew,

For why should musicians be solemn
 and blue?
 Sweet music, soft colors, gay laughter,
 bright smiles,
 Accompanying tripping feet, the time
 to beguile.
 Then during two extras; they served
 lemonade,
 Which was icy and sweet and just
 freshly made.
 Ice cream and coffee, and dainty square
 cake,
 Were all the refreshment one would
 care to take.
 Then back to the dance with a zest
 and a will;
 While sipping joy's cup let us have
 our fill.
 No one of us knew what to-morrow
 might bring,
 So on the one night we just let our
 hearts sing.
 Maiden's eyes, how they twinkled!
 their dimples, how merry!
 Each cheek like a rose, and each mouth
 like a cherry;
 A droll little cherry, like wee Cupid's
 bow
 Mouths shaped to say "yes" but
 which could yet say "No."
 Lochinvars to fair maidens sad tales
 related,
 And you saw as you looked, Lochinvar
 duplicated.
 For no color of rainbow on boys' cos-
 tumes gleamed,
 All black and white—all the same, so
 it seemed.
 At last, came the time for good night
 to be said,—
 A time when good people were all safe
 in bed.
 We girls have decided we're wild about
 dancing,
 And as for the last—'twas a dance
 most entrancing!

By Muriel Krouse.

RESULT OF TENNIS TOURNAMENT

Both the Mixed Doubles and ladies'
 Singles' Tennis Tournaments have been
 completed. Much credit is due to
 those who arranged and managed the
 tournaments, especially the Mixed
 Doubles, as this is the first time for
 some years that they have been able
 to complete this tournament. Miss
 Margaret Cockshutt won the Ladies'
 Singles. Miss Jocelyn Watts and Mr.
 Gerald Grant were the winners of the
 Mixed Doubles.





Meditations - Sink or Swim

Amiel

PRIZE WINNING CARTOON



LOCALS

The U. S. Army Authorities have decreed that soldiers must rear real moustaches or none at all. "Eyelash" moustaches are not to be tolerated. This announcement is known to have caused the removal of three moustaches belonging to members of the Sophomore year who, apparently, were all but discouraged when this "last straw" was laid on. The Year rejoiced with them in the removal of their upper lip decorations but it is with deep regret that the "Sophs" noticed another of their number trying to persuade something to grow or blossom where moustaches are usually grown. This phenomenon is plainly visible on bright sunny days with the aid of a good botany lens. Botanically speaking, the upper lip of this aspiring young "Soph" may be termed pubescent. It is quite possible that with careful attention this puberulent lip may finally develop a distinct pappus. May it not be so!

That "Mac" Hall bacillus is said to have made serious inroads on the Freshman Year. Some consider themselves completely immune, but it was ever thus.

Silcox (to Murdoch who has been playing the violin)—"Are you playing that piece for me?"

Murdoch—"Yes, if you like."

Silcox—"Well you can stop just as soon as you like. Exit Silky hurriedly, closely followed by a No. 8 shoe.

WE WONDER

Who the Freshman is who was inquiring if it were necessary to have a chaperone when he "fussed" at "Lits"

If the lights will ever go out again at Literary meetings.

If M-y-d will get eleven letters next week.

If G. H. Scott will ever stop punning.

Where "Munny" was during the week end of Nov. 10th. ;

Whether "Scotty" McLean will be a Liberal or a Conservative in the years to come.

If it doesn't require mechanical draughtsmen to draw the knotters of binders and the internal working of seed drills and manure spreaders.

If Year 20 ought not to give thanks that it has in its midst one good, draughtsman and an abundance of tissue paper.

If an autobiography of the "Mac" Hall 'phone would be interesting.

If Stan White could grow a moustache.

If Santa Claus will be kind and generous with his rink tickets.

Why the Mill Street Gang does not sing at "Lits."

If the United Cigar Stores Ltd., still does a flourishing business with some of Year '21.

If these long, fat cigars aren't almost too much for some of the Freshmen.

If some kind souls wouldn't help out the Locals Editor with a few jokes.

If we hadn't best stop wondering.

Tavistock is now on the map. Stock put it there.

Year '20 extends a hearty welcome to its popular president, "Slim" Bouis.

What would happen if the men from the Ottawa Collegiate and the Central Experimental Farm ran the college for a day? Ask any of the following:—Geddes, McCurry, Odell, Allen, Caldwell, Higgins, Scott, Whilans, Currier, White, Hopper, Williamson, Alexander, Taylor, Frith, Lathey, Chamberlain, Jamieson, Shoemaker, and a few others whose names do not come to mind readily.

For full plans and specifications for a Circular Dairy Barn, apply

to G. H. Scott, Room 44, Mill Street.

N.B.—It has been suggested that, as a special feature, he put this barn on a turn table, and, by rotating it twice daily, to the musical accompaniment of "J'aime les vaches et les poulettes, mais c'est la vie". Just before milking time, the milk yield ought to be materially increased.

"If I had a cow that gave such milk I'd dress her in the finest silk, Feed her on the choicest hay, Keep her in a "round barn all the day."

This would be following the spirit of the text laid down in Canadian Dairying, P 44., "Dairy animals must be treated KINDLY. No one can hope to succeed in the business who neglects this point. The owner or attendant must have the confidence of his animals, and RULE THEM WITH LOVE—not with the lash."

It isn't hard to figure out just what this suggestion is worth but it is hoped that the idea will be received in the same spirit as it is given and some experimenting be done along this line. It would be interesting, and it would in all probability either place the inventor's picture on the library wall or place him in an asylum. But then all great discoverers and inventors have had to take this latter chance.

"SILKY'S"

FIRST CANE ↑



Sweet voice over the 'phone—"I wish to speak to Bob Alimony of the 3rd year."—"?—! !"—Surely Bob is not mixed up in anything that name suggests!

Student in Massey Library—"I want copies of the first year's Christmas examination papers."

Librarian—"We have them for the past five years, up to December 1916."

Student—"I don't see why this college can't be more up-to-date and have the 1917 papers on hand. All those others are away out of date."

The Rag and Metal business promises a great future. Bill M— is tho't to be turning his attention toward it.

Found at the Winter Fair, a hand in a grey Fox muff.—For information regarding the owner of the hand apply to the finder—G. R. W.

Norman J—s pleads "not guilty" to the charge of Stargazing on a recent beautiful evening. He says that he and his fair companion, or companions, were watching what they thought was a fire. The fact that it was the rising moon they saw makes us doubtful.

It is rumoured that Laing has not been on exhibit around the college since "Sleepy No. 9" awoke and exercised his fists the other evening. Quiet fellows sometimes show "speed" when aroused.

1st Freshman—"Has Gibbard a job in the president's office?"

2nd Freshman—"No, but he has a situation that offers great inducements"

At Faculty Club—1st Prof.—"Why

what's the hurry? You don't have to go yet; its only 10.30." 2nd Prof.—"No, it is early, but you see, I have an able bodied wife waiting for me at home."

Time—12.05, noon.

Place—Pavement in front of residence.

Episode—"Dad" Stewart falls with his insect collection, shattering all their remains. Mac Girl, passing, enquires "Are you hurt Mr. Stewart?" To which "Dad" replied—"No Miss, but I fear I'm plucked. I've gone down on entomology."

Paddy Dolan bought a watch from the local jeweller with a guarantee to keep it in order for twelve months. About six months after Paddy took it back because it had stopped.

"You seem to have had an accident with it," said the jeweller.

"A small one, sure enough, sir. About two months ago I was feeding the pig, and it fell into the trough."

"But you should have brought it before."

"Sure, your honor, I brought it as soon as I could. We only killed the pig yesterday."

THE ETERNAL FEMININE.

The taxical driver had been driving his fare about for an hour and a half and at last inquired:

"Where to now, miss?"

"Oh, how much do I owe you?" said the fare, seeming to awake from a day dream.

"Eight dollars and a half, miss," said the driver, glancing at the taximeter.

"Oh, I say!" said the fare sweetly, "would you mind backing up and keep going backward till you come to 75 cents? It's all I've got!"

ARCHERY FEATS.

The statement made in a recent issue of "Tit-Bits" to the effect that the greatest distance an arrow has been shot from a yew-bow is 236 ft. 7in. is quite correct. The reference was to the old-fashioned long-bow, made throughout of yew, such as our bowmen used at Crecy and elsewhere in France. These bows could not send an arrow anything like a quarter of a mile, and it was with such a bow that the record shot of 236ft. 7in. was made.

Longer distances have, of course, been shot; but in these cases both bows and arrows were very different, being specially made for long-distance shooting. They were light Turkish bows, shooting light arrows. Two of the longest recorded shots were made some years ago with a very light arrow of about 25in. in length, by the Secretary of the Turkish Embassy in London. He shot against the wind a distance of 415 yards. and back again with the wind 463 yds.

Some interesting facts regarding old-time feats of archery are to be found in "The Gun and Its Development," by Mr. W. W. Greener.

On one occasion, says Mr. Greener, a party of archers shot before King Edward VI. at considerably over 220 yds. and pierced an oak plank 1in. in thickness, several of the arrows passing right through the plank and sticking into the butts at the back.

An authority states that some archers belonging to the Ventna, a warlike Welsh tribe, shot clean through an oak door, behind which some soldiers had concealed themselves, the door being no less than four fingers in thickness.

Henry VIII., at the Field of the Cloth of Gold, shot against the French cross-bow men. The King put the arrows from his long-bow successively in the centre at nearly 240 yds., whilst

the Frenchmen were unable even to hit the target.

WON THE BET

A young lieutenant who indulged in a good deal of betting was transferred from one Army post to another. When he reported to his superior officer he was treated very coolly.

"Young man," said the officer, "I have a letter from your former colonel and he tells me, you, although efficient, have a weakness for betting. I won't stand it in this regiment, sir; do you understand? You couldn't lure me to bet. What do you bet about, any way?"

"I'll bet you five pounds," said the lieutenant, "that you have a scar on your left shoulder."

"What, sir?" replied the colonel. "I'll take on that bet."

Off came the coat, then the shirt, but no scar was seen. The commander then admonished the lieutenant, and afterwards wrote the following letter to the young man's former colonel: "Just as you said. This youngster was not in my office two minutes before he bet me five pounds I had a scar on my left shoulder. Of course he lost, but I hope he will be benefitted by the experience."

Then came the answer: "The youngster was right. Before he left here he bet me twenty pounds he would have your shirt off five minutes after he met you."

A teacher in a big school had given lessons to an infants' class on the Ten Commandments. In order to test their memories, she asked:—

"Can any little child give me a commandment with only four words in it?"

A hand was raised immediately.

"Well?" said the teacher.

"Keep off the grass," was the reply.