

**Pages Missing**

# THE O.A.C. REVIEW.

The Dignity of a Calling is its Utility.

Vol. 3.

GUELPH, ONT., OCTOBER, 1891.

No. 1.

## THE O.A.C. REVIEW.

PUBLISHED MONTHLY, DURING THE COLLEGE YEAR,  
BY THE LITERARY SOCIETY OF THE ONTARIO  
AGRICULTURAL COLLEGE, GUELPH.

### EDITORS

F. C. HARRISON,	MANAGING.
R. SHAW,	LOCAL.
D. Z. GIBSON,	AGRICULTURAL.
W. L. CARLYLE,	PERSONAL.
G. F. MARSH,	EXCHANGE.
W. HAIGHT,	

### BUSINESS MANAGERS:

R. HARCOURT, H. L. BECKETT, T. J. HURLEY.

### SUBSCRIPTION RATES.

Annual subscription, 75 cent; \$1.00 if not paid before 1st February; single copies, 10 cents.

Advertising rates on application.

Ex students will confer a great favor on the Editors of this journal by sending news, particularly experiences of practical value.

## Editorial.

Once more our little ship has weighed anchor, and is now sailing on the high sea of public opinion. It has a new crew, zealous and anxious, indeed, to make a successful and prosperous voyage, but as yet with little experience of the sailing qualities of their gallant little craft.

Our vessel has been thoroughly overhauled, the weak places have been strengthened, the size enlarged, the crew increased, and a new compartment added, which we hope will increase the buoyancy and sailing ability. And, now, a word to our different subscribers, ex-students, students, and those interested in the College and its work. Firstly, to ex-students:—We wish this paper to be a bond of union between you and the College; by its means you can keep up with the many recent experiments and improvements carried

out here, and recollections and reminiscences of old times will be continually suggested by the columns set apart for your own use, and also the other departments of the paper. Let every one of you try and write us a practical paper, one that will do you good to write, and benefit us and our subscribers. If you do not think yourself capable of doing this send us news of yourself and your work, we shall always be glad to hear from you.

Secondly—We ask the students to use every opportunity they have of making the REVIEW a success. Put in a good word for us whenever you can, and write, if possible, a paper on some subject. Many come from distant parts, from places, perhaps, of which we have no knowledge, nothing would be more acceptable than a description of the country, and especially of the locality from which you come.

If your manuscript is not accepted the first time, be not discouraged, but try again remembering the old story of Bruce and the Spider.

Lastly—To those interested in the College (a class that we know is constantly increasing as the benefit and utility of the College makes itself more and more felt throughout the Dominion and the Province in particular) we ask you to favor us with your patronage and support, believing that you will obtain much information regarding those subjects in which you all take such interest, from the perusal of our paper.

In conclusion, let us say that we believe no student or ex-student is so base that he will not subscribe for the REVIEW. Therefore let every one consider it a point of honor and a duty to subscribe, and we trust and believe that those who have never taken a course here, but who are interested in our farm and work, will not grudge us the trifling sum of 75c. per annum for the REVIEW.

\* \* \*

Having an extensive library in the College, replete with the latest works by prominent authors, and other excellent sources of information, we have decided to open a correspondence column; and questions pertaining to

agriculture, dairying and other subjects of importance to our subscribers will be willingly answered in a column especially set apart for that purpose.



### OUR PUBLIC ROADS.

The subject of public roads is one in which every citizen is, or ought to be interested. It is a subject of vital importance to every business man, and of financial importance to every farmer or owner of real estate in this country.

A steady drive over some of our township roads would thoroughly convince the most casual observer that improvement in our present system of roadmaking is woefully needed.

Perhaps it would be well to point out the flaws and defects in our present system, and then to suggest a remedy from which we might profit. In the first place our pathmasters are not chosen with any special regard to their fitness for the office. In some cases they are appointed against their will, having no desire to officiate. Few men desire to assume the responsibility, farmers especially, for the reason that roadmaking occurs at a season of the year when they could more profitably employ their time at work on their farms. The length of the term of office is another defect. No two men think exactly alike, therefore the one may undo what his predecessor had done the previous year.

And now with regard to the manner in which it is done. In the first place the days allotted for roadmaking are looked upon as holidays for man and beast. The farmer starts out in the morning with as small a box on his wagon as it is possible for him to construct. If he has a man in his employment not specially noted for his diligence, or a son of his own who knows how to take care of himself on a hot day, they are very apt to work out a large share of the tax. The temptation to shirk work is so great that it has a bad effect on the morals of the men employed.

They are not apt to over exert themselves when their pathmaster and a neighbor are seen to back into the fence corner and talk politics by the hour. Some men are honest

everywhere, but the performing of statute labor is not a good place to find them.

It would be too great an undertaking to point out all the defects in this system, nor would it be advisable to do so, as there are a great many who adhere to the present system in vogue, and not without a few just reasons, but the enumeration of some of the advantages arising from better public roads would be more in place.

There is nothing perhaps that would tend to improve the condition of our farmers, both intellectually and socially, as the interchanging of ideas with his fellow farmers and others, which would undoubtedly follow if the roads were more passable during the slack time of the year. He and his children would be able to take advantage of public meetings, debating societies, institutes, schools, churches, etc., which would naturally make them better and truer citizens. The season of the year when the farmer can embrace such opportunities is during the fall and spring, but the majority of our roads are at that time almost impassable. The distance from market where the farmer disposes of his produce would be lessened. For instance a farmer living ten miles from town on a good road would be just as near, practically speaking, as one who lived only five miles distant on a poor one. The former could take just as large a load and reach his home again as early as the latter.

Good roads would lessen the cost of transportation, and, by lessening the cost of transportation the cost of production is reduced; and by reducing the cost of production we increase the profit realized from the produce, therefore the value of his property would be greatly increased.

A great many other benefits might be stated, but enough has been said to show that there are many advantages not unimportant to the farmer. But before abandoning this subject it would be as well to suggest something to remedy the condition of our roads.

First, the payment of all road taxes in cash; second, the electing of a supervisor for a term of three years or more, giving bonds for the security of the money placed in his hands, allowing a salary to fully compensate him for his time, empowering him with authority to have men and teams, and to purchase such tools as would be necessary to facilitate his work. This supervisor should be directed

according as the members of the township council desired.

As it is at present many of our main roads are too wide. The surface becomes concave instead of convex, hence on hill slopes the freshets in the spring rush down the road and gully out the centre, washing all the repairing into the ditch that was put on the previous year. If the lateral slopes were greater than the longitudinal this would be avoided. Many objections arise against the method of repairing practiced on many roads. The whole extent of the beat is repaired every year, but there is not enough labor expended on the whole to have any permanent effect, consequently our roads are becoming worse and worse every year.

If, instead of going over all the road in a slipshod manner in one year, only a portion of it was thoroughly graded up and repaired, the amount to be expended upon it for a number of years afterwards would be reduced to a minimum. On good roads especial care should be exercised regarding the steepness of the slopes. A steep slope on a good road is relatively a worse fault than on a poor one. The gradual slope of a railroad will furnish evidence for proof of this fact. There is still much to be said upon this important subject, but the object has been attained if any of the suggestions here offered are put into practice upon the roads of this fair province of ours.

### A Word About Beefing Cattle.

Throughout a large portion of Canada and the United States there are at present large numbers of our agriculturists turning their special attention to dairying. While dairying is a profitable and important industry, yet the demand for even the proper quality of product may be equalled and perhaps exceeded by the supply. Though many of our farmers may be specialists, they must on the whole constitute a general purpose people; that is, their productions must be numerous and varied. For these and many other reasons, while dairying is being pushed into the front ranks the beefing industry must not be left in the rear. As a substantial structure requires a substantial foundation, so in our beefing industry the ground work must consist of the proper quality of material. To get the right stamp of cattle to make beef raising profitable we must discard the scrub sire, as he is a luxury which

the farmer can no longer afford. Before going further let me here solicit all advocates of the scrub to visit the Ontario Experimental Station and witness the test being carried on to determine the relative cost of production with grade steers of the different beefing breeds and a scrub or native. Though the last mentioned animal is dealt a liberal ration and treated in every way similar to the others, he still remains poor and bony in structure. If you cannot visit the Station, be sure you secure the bulletins and read an account of the work. We must go even farther than breeding simply to a pure bred sire—people often go that far and become dissatisfied with the result. We must breed to the animal that has individual merit as well as good lineage. The typical beefing animal might be briefly described as follows. Starting at the head, he should have a broad muzzle with expansive nostrils, clean cut head and throat, broad between the eyes, which should be large and full and have a quiet, docile appearance. The neck should be thick, filling well into smooth shoulders. The breast full, deep and broad; crops and heart-girth well filled; ribs well sprung, back and loin broad; top and under line straight; flank full and well let down; quarters long and broad with the meat coming well down on the hams; and the twist full. Besides these particulars, the animal should be set on good squarely placed legs, have a soft loose moveable skin not too fine, and have a quiet, gentle disposition. After breeding properly we must care for and feed properly. The scrub will not respond to liberal feeding, neither will the well-bred animal respond to scrub feeding. We give our cattle gentle treatment, keep them in good, comfortable quarters, having the stable during the cold season at a temperature of about 60° F., feed liberally and find that when fairly well bred they respond profitably to such treatment. If you have been using the scrub sire, discard him. If your stables are cold, by the use of tar-paper and a little lumber you can make them comfortable with the very small outlay. If you have been in the habit of yelling at your animals and using the manure fork as a persuader, speak gently to them and leave the last named implement for the purpose for which it was intended. By attending carefully to these and other such particulars the results will soon be noticeable and your

revenue from beefing cattle will be greatly increased.

D. BUCHANAN, '91.

### Provincial Ploughing Match.

The Provincial Ploughing Match under the patronage of the Agricultural and Arts Association and the South Wellington Ploughing Association, was held at the Ontario Agricultural College on Wednesday, October 22nd.

The large field in which the ploughing match took place was thronged with crowds of visitors all day, going to or fro, or standing in groups discussing the respective merits of the plowmen. About sixty plowmen from various parts of the Province entered the lists to compete for the prizes. The attendance was large, and it is estimated that about three thousand people visited the grounds.

Among those present were the Hon. John Dryden, Minister of Agriculture; N. Awrey, M.P.P., J. Brown, M.P., Jas. Innes, M.P., J. D. Moore, M.P.P., J. R. Martin, Q.C., Cayuga; Mr. B. Tolton, President of the Association; H. Wade, Secretary of the Agriculture and Arts Association; F. Shore, London; G. W. Field, Guelph, and W. Bell, Hamilton.

The O. A. C. students were among the most interested of the spectators as Jas. Atkinson, one of the first year men, was among the competitors, and won a first prize of twenty dollars in his class.

Through the kindness of the President, Mr. Mills, an ample lunch was not only sent out to the field to the plowmen, but both Judges and plowmen were hospitably entertained at dinner in the College after the day's proceedings outside had been brought to a close.

The students know from experience that whatever Mr. Storey undertakes is sure to prove a success; hence much of the honor of the enterprise is due to the Secretary, Mr. J. E. Storey, and his vigorous efforts to make the Provincial Ploughing Match a marked success.

### DAIRY KNOWLEDGE.

The Dairy industry in Canada has received a great impulse during the last few years, and not in Canada alone, but in the United States and the old country as well. We know that

the Dutch have for many years given special attention to dairying, they have their experimental dairy stations and agricultural colleges as well as travelling dairy instructors, so that all those who intend to engage in dairying can get all the information required to make the very best dairy products, and this information can be obtained at little or no expense, the result of this is that the little country of Denmark is now the leading dairy country in the world. Danish butter ranks higher in the English markets than any other butter made, and always brings the top price.

In Great Britain also special attention is now being given to dairy farming. They have their travelling dairy instructors—these giving instructions in cheese making and butter making as well. Although there have been agricultural colleges established in England for many years, still the poorer classes have not been able to avail themselves of the opportunity of attending these colleges because the tuition fees and other expenses are so great, hence those people who most needed instruction, the practical workers, the men and women who farmed and who made the butter and cheese were without instructions of any kind, and so followed in the way of their forefathers, with the result that there was little or no improvement in the quality of the butter or cheese made, or in the methods of making. Since competent dairy instructors have been appointed, however, this difficulty has been overcome, and information can be obtained by all who are interested in dairying, without any expense being incurred. And while so much attention has been given to this subject in the old country, the Americans have not been idle. In the States cheese factories and creameries have been established and are turning out annually immense quantities of cheese and butter, a great quantity of which goes to supply the markets in the large cities, the surplus being shipped to other countries. Dairy schools are now being established in many parts of the States. New York State has had its travelling dairy schools for the last few years, while in Wisconsin, that great dairy state, a dairy school has been established at the State University. Tried as an experiment last winter it proved so successful that this winter they are putting up a \$30,000 dairy building, so as to be able to give thorough instruction to all who attend. Minnesota will also have its dairy school this winter at the Agricultur-

ral Experimental Station presided over by competent Dairymen.

Coming over to Canada we also find a great change. Dairy farming heretofore has been engaged in by comparatively few, owing to the fact that continuous crops of grain could be grown on the virgin soil, with comparatively little manuring, and a good crop of grain was sure to bring a good price, but the soil in the more settled districts has been depleted, so that grain cannot be grown without a liberal supply of manure, thus it is impossible to compete successfully with the grain growers in the great North West, where the soil will produce immense crops of grain year after year, without manure, hence the farmers of Ontario and of Eastern Canada have to turn their attention more to stock raising and dairying than they did formerly, if they wish to make a success of their business, and we find this is being done, owing to a great extent to the efforts of a few prominent dairymen.

The Dominion Government is doing a great deal to help the farmers of the country to adopt new methods, thus lessening the cost of production, and also to produce a higher class of food products. Prof. Robertson, Dominion Dairy Commissioner, is doing a great work in establishing experimental dairies all over the Dominion, and sending out instructors in the line of dairy work. The Ontario Government and Dairymen's Association are also doing much. The Agricultural College is now turning out young men every year fitted to instruct in dairying and other subjects, while the travelling dairy recently instituted by the Hon. Mr. Dryden and President Mills, will aid greatly in improving the quality of butter made in the Province, and also in the method of making.

The Dairymen's Association has also established a Dairy School at the Tavistock Cheese Factory, with Professor Bell as instructor. We hope before long to see a short course dairy school established at the O. A. C., so that cheese makers and others can attend during the winter months, and obtain both practical and scientific instruction.

With such aid as this, dairying in Canada must advance with great strides, until Canadian butter and cheese equals that made in any other country, then the Canadian dairyman will be a prosperous man and mortgaged farms a thing of the past.

"AGRICOLA."

## BENEFICIAL BIRDS.

To decide upon those birds which are strictly beneficial is not an easy task. When we first look at the good qualities of a bird we come to the conclusion that it can safely be classed as beneficial, but on more close observation we generally find some bad quality. This rule holds good more especially with birds of prey.

The Sparrow Hawk is a bird of prey and is also a beneficial bird. During summer this bird subsists largely upon field mice. It can often be seen around hay fields when the hay is being removed, doubtless for the purpose of catching mice. Later in the season when food is not so plentiful, it frequents localities near the out buildings, frequently making raids upon the English Sparrow. As the Sparrow Hawk is a migratory bird, the benefits to be derived from it are only for a part of the year. An example of a bird that remains in this district throughout the year is the Barn Owl. The fact that this bird, if undisturbed, will take up its abode in the outbuildings is of great value. It is of great service in destroying mice and other vermin. The Owl, though so beneficial, is often the victim of the gun. Another bird, though not very common, is the Butcher Bird. Like the Owl the Butcher Bird remains throughout the year. It subsists largely on small birds, and as birds are not plentiful in the winter, it falls back on the Sparrows. A great many curious things are said about this bird. It gets its name from the fact that it sometimes hangs its prey upon a thorn until needed. Although these birds do a vast amount of good, yet they are not without their faults. Besides destroying vermin, they sometimes destroy small insectivorous birds which are of great value.

A great many small birds are classed as insectivorous birds, and do not cause the slightest damage. These are the birds that are, and should be protected.

While using the gun or any other means for the destruction of birds injurious to the crops, we should in every instance spare those birds which are beneficial. Robbing birds nests is a practice that we Canadian boys are too apt to indulge in. Let us consider not only the sorrow we cause the parent birds, but also the damage we do.

W. SHAW.

### Grape Culture in Ontario.

Grape culture does not receive the attention from the people of Ontario which its importance as one of our industries demands. The grape is one of our most delicious fruits when eaten either directly from the vine or preserved in some of the various ways practiced by house-keepers. It is moreover one of our most wholesome fruits, the most eminent physicians prescribing it for their patients.

Its effect as a tonic is well known to a large number of the invalids scattered throughout our Province. No other fruit gives the same appetite and relish for a substantial meal that is supplied by the grape. It is also one of the first fruits cultivated by man. Grapes and wine are frequent mentioned in Bible history, vineyards being frequently spoken of in our Saviour's time.

The grape is adapted to almost every part of this Province, although some sections are much more favorable to its growth than others. The majority of our Ontario farmers could with a little labor and some attention to the study of grape culture, raise an abundance of grapes for home use. From twenty-five to thirty vines, properly cared for, will supply a family of twelve with grapes for a whole year.

What is more palatable for dessert than a fine large cluster of Niagara grapes? And on how many of our farmers' tables do you find them? About one in every eight hundred. Where will you find a more pleasant picture than the "young hopefuls" of the family each supplied with a huge cluster in each chubby hand? And if they were allowed all the grapes they cared for there would be far more chubby hands and fewer small, weak, delicate children. The most careful mother need not fear the least danger from cramps or other inevitable complaints where the children have access to cherry and apple orchards, but which are never met with in the children who frequent the vineyard.

The grape is an exceedingly hardy vine growing well on the rocky hill or in the fertile garden, trails on the ground or on trellises and climbs to the roofs of houses. By careful training it may be kept as a small shrub or made to cover an immense area. In favorable climates the grape vine lasts, as a rule, from 20 to 30 years on suitable soils. They do well on a variety of soils, but those most suitable are rich, friable loams. The most important

feature is to have a deep soil thoroughly drained on a gentle slope towards the South or South-West.

When vines are obtained from the nursery they are usually two years old, and are generally planted in the Spring of the year. The planting should be deferred until the air and soil are sufficiently dry and warm. Should the buds have commenced showing life, so much the better. The roots should be carefully examined before planting in order to cut off such as are injured or broken.

The vines must also be cut down to the lowest well-developed bud; if the whole vine were left it would overtax the root to obtain nourishment, and the whole vine would consequently wither and die. The vines should be planted about 10 feet apart in rows about the same distance apart.

The holes for the plants ought to be large enough to receive the roots in their natural position, and about a foot deep. Then some very fine rich soil should be heaped up in the middle of each hole in the form of a cone. On the top of this heap the young plant is placed and its roots spread out evenly and arranged so as to make them grow in all directions. Fine soil should then be scattered over the roots until they are well covered. Water should then be sprinkled over the roots with a watering-pot to settle the soil. The roots should be about six inches below the ground so as not to be injured by hoeing, digging or plowing, but the mistake should not be made of having them too deep.

It is a good plan to mulch recently planted vines as it prevents evaporation of moisture, and keeps down weeds, but to manure them at this stage cannot be too strongly denounced.

The arrangement of the vines on the trellis is an important point in grape growing. In the colder portions of the Province they will require to be taken off the trellis and buried in the winter season and have to be trained accordingly. The plan usually adopted consists of posts either planted or driven into the ground in rows. One post between each two vines, and on these posts from three to five wires are stretched, the lowest one being about one foot from the ground, and the top one about four-and-a-half feet from the ground with the rest in between. The arrangement of the vines on the trellis is somewhat different in the colder portions of Ontario from that practiced in the parts naturally adapted to the growing of the grape. The arrangement of

the vines in the "Renewal system" of pruning admits of the vines being more readily removed and buried for winter protection. In this system the pruning is done chiefly in the latter part of September or the first of October.

In the first year after planting all the weaker shoots are cut away, leaving only the strongest and most promising ones.

In the autumn of the second year leave the two best canes and bend down each side parallel with the wires and cover with earth. In the Spring of the following year train these lateral branches along the lowest wire of the trellis. From these laterals will spring shoots which should be trained in an upright direction on the wires. Only every alternate one of these shoots should be allowed to bear fruit, and in the autumn the stalks that have borne fruit should be cut out leaving only one bud at the base of each. The remainder of the stalks are bent down and covered with earth as before.

In the Spring of the following year the earth is removed, the vines raised again and fastened to the trellis, and so on from year to year, always cutting out in the autumn the stalks that have borne that season.

In the more favored parts of Ontario where grape-growing is made a specialty, the "Neiffen system" of pruning is followed. In this system the vines are not taken off the trellis at all.

In the autumn of the first year after planting, the shoots are all cut leaving a small portion of the vine near the root bearing two strong buds. In the following Spring rub off the weaker bud and allow the stronger one to grow, and in the autumn cut back to five feet. In October of the third year leave the two best lateral shoots about three feet from the ground, and about two feet above these leave two more on opposite sides of the vine. These laterals are trained along a wire and post trellis the same as in the "Renewal system" except that only two wires are needed.

There are three periods at which pruning is done; the first is in the Spring, and consists in pinching of the weakest buds so as to get a few good strong shoots. The vines are pruned again in August, when the fruit bearing stems are cut off at the second joint above the uppermost bunch of fruit, which has a tendency to develop the bunches of fruit, and trim back the new shoots to the top of the trellis.

Then in October the final pruning, the old wood is removed and the new is trimmed back.

The favorite varieties of black are: Concord, Clinton, Moore's Early and Wilder. Of the red the favorite varieties are: Delaware, Aguawan and Salem; and of the whites Niagara.

The grape has a host of enemies among the insects and some diseases as: mildews, etc.

When grapes are grown under favorable conditions there is no crop that will yield so large a return from a given area. There has been grown in a single season in Ontario ten tons to the acre and these were sold at 2½ cents per pound and still farmers and others will say that they have no time to attend to a fruit garden.



## Correspondence

### THE LITERARY SOCIETY AND THE REVIEW.

W. J. PALMER, B.S.A., '91.

DEAR SIR, In response to your request to contribute something to the pages of the first issue of the REVIEW for this college year, I gladly send you a few hurriedly written thoughts which may possibly prove of value, especially to the new students who are now for the first time entering the College.

Looking back over the history of the O. A. C. for the last few years, since the autumn of '86, when I first entered its doors as a student, I cannot but congratulate the students who are now entering, on the much greater facilities which are offered for instruction in all the departments in the College and on the Farm. The students now have little or no excuse for grumbling, or "kicking," as we used to call it. Through the exertions of your worthy President, Mr. Mills, the interior of the College has been very much improved, thus greatly contributing to the comfort of the students, while the departments superintended by your matron, Mrs. Craig, offer no field for adverse criticism even to the sourest critic. On the farm also, under the able management of Prof. Shaw, opportunities are offered for the intelligent student vastly superior to anything offered a few years ago.



But in this short article, I wish to refer especially to the benefits of the Literary Society and the REVIEW in aiding in the course of instruction given at the College. The Literary Society, which has been established for some years, now has never lost prestige in the eyes of the officers of the institution, but has increased year by year in importance and will, I hope, this year be more successful than ever.

Each student in the College, whether in the first, second or third year, should do his utmost to help this society along, in doing so, he will certainly derive great benefit himself. It may seem rather a hard and unnecessary thing to the new student to stand up at the weekly meetings and deliver a speech, take part in a debate or read an essay or short selection, when he perhaps feels that the audience are laughing at him or cracking jokes at his expense, but if he is determined not to be discouraged but continues to take part whenever an occasion offers, he will gradually feel more confidence in himself and will finally take a pleasure in the meetings.

To be able to speak fluently and with good judgment in public one must first have confidence in himself, and the Literary Society is the place, and to gain this confidence, much better to acquire it there among students than to go out into the world with a College Diploma and not be able to stand up at Farmers' Institutes or public meetings and challenge statements that he knows from his scientific education to be wrong. There have been students in the past who would not join this Society, but rather sneered at it, happily though they were largely in the minority and never became very distinguished individuals after leaving the College. It has generally been the case that the leading men in the Literary Society have also been the leading men when the results of the exams. appeared. Let me then strongly advise all the students to join this Society and to attend the weekly meetings as regularly as possible. Some who wish to study hard may think it waste of time, but they will find out in a very short time that the few hours spent there have been vastly more valuable to them than the same time spent in cramming up notes, or perhaps in visiting friends in the Royal City.

[Mr. Palmer then gives some advice to the students and ex-students regarding the REVIEW, but as the substance was contained in an editorial, this portion has been omitted.—ED.]

## TESTING OF MILK.

In handling milk for manufacturing purposes, "Milk Testing" is a very necessary and important operation, and should be the first work to take place, as soon as the milk enters the factory. Its objects are:—

1. To determine the percentage of fat.
2. To detect removal of cream or absence of strippings.
3. To detect the addition of water.

The senses of taste, smell and sight entered largely into the process of determining the quality of milk, but as time has advanced instruments have been invented for this purpose, the principal of these being:—

1. The Pioscope ; 2. Lactoscope ; 4. Lactometer ; 5. Lacto-butyrometer ; 6. Cremometer ; 7. Beimling Tester ; 8. Babcock Tester. The last two being based upon the centrifugal principle.

In describing each I shall take them in the order named.

*The Pioscope*—Consists of two circular plates about 2 inches in diameter, the lower one being composed of bone or wood, and black in color ; the other is glass, on which is painted colors to correspond to the following grades of milk:—Normal Less Fat ; Poor ; Very Poor ; Cream ; Very Fat. In the centre the glass is clear in order to compare the milk (which is placed in the centre of the lower plate) with the above named grades, and thus determine its quality. The eye is the judge.

This instrument depends upon the opacity of the milk, and is only an approximation to exactness.

*The Lactoscope*.—This is tubular in shape, and glass in composition, with the addition of a porcelain projection extending into and entirely closing the bottom. On this porcelain are six black horizontal marks, the use of which will be subsequently described. The tube is graded with two columns of figures, one of which, when 4 cubic centimeters of milk are placed in the tube and water is added until the black markings on the porcelain are just distinguishable—records the amount of fat in the milk and the other the amount of water added. This is not an exact test as the opacity of the milk is not dependent upon the amount of fat contained therein, but it is, however, a guide.

*Lactometer*.—The construction of this instrument is similar to that of a thermometer and in many instances thermometers are

attached to record the temperature at the time of testing. It records the specific gravity of milk—which should not be less than 1.029—and should be used in combination with the *Cremometer*, as the S. G. of milk may be increased by skimming and brought to its normal by the addition of water, hence it will be concluded that this instrument is also inaccurate.

*Lacto-butyrometer*.—Consists of a tube closed at one end and graduated in Centimeters. Ten cubic centimeters of milk are placed in it to which is added 20 cubic centimeters of a mixture of 500 parts alcohol, 500 parts ether and 5 parts ammonia. It is then put into a water bath whose temperature is  $40^{\circ}$  C. The reading is taken after twenty minutes and the results are tolerably accurate and sufficient for general estimation of fat.

*Cremometer*.—These instruments are used to make a comparison between two samples. They consist of two glass tubes closed at one end and graduated in centimeters. The tubes are filled with milk and the cream allowed to rise. The reading is then taken or comparison made.

We now come to the most reliable "testers," viz. :—1. The Beimling ; 2. Babcock.

These are based (as I have before said) upon the centrifugal principle, i.e., the lighter particles will strive to get nearer the centre and the heavier ones are directed towards the outside. The former contains 12 pockets, into which the bottles containing the samples to be tested are placed. The number of pockets in the latter varies in different machines, but in the one at the O. A. C. Creamery there are eight. These pockets when at rest take a vertical position, but on being whirled, immediately assume a horizontal posture. The test bottles of the former are round, about 1 inch in diameter, 8 inches long and the neck, which is long and constricted, is graduated into spaces, each indicating 1-10 of a degree. Fifteen cubic centimeters of milk are placed in each of these bottles, to which are added 3 cubic centimeters of amyl chloride, and afterwards sulphuric acid— $H_2SO_4$  is added until the bottle is full ; the latter should be added slowly and the bottle shaken frequently. The acid precipitates the curd at first and finally dissolves it.

When all the bottles are thus prepared, they are placed in the pockets and whirled, the fat, consequently forming in the neck of the bottles, which are taken out at the end of

of three minutes and read. When the degrees are ascertained, the corresponding percentage is tabulated on a card which accompanies each "Tester."

The preparation of the samples for the "Babcock Tester" differs slightly from that of the Beimling. 17.6 cubic centimeters of milk are placed in the bottle, and the same amount of sulphuric acid. The bottles are shaken with a rotatory motion until the curd is completely dissolved, when they are placed in the pockets of the "Tester" and turned about 3 minutes. The bottles are filled with hot water and whirled again for a short time, when all the fat will have come to the top. The graduation on the necks of these bottles differs somewhat from that on the bottles of the Beimling, in that each space indicates 1.5 of one per cent of fat.

These two methods are the most accurate ways of testing milk except it be by "Chemical Analysis," the difference varying so slightly that it is scarcely ever taken into consideration.

In conclusion I might say a few words about the "Oil Test Churn," the object of which is to determine the churnability of cream and not the amount of fat.

It is of service for the equable distribution of the proceeds from the Creamery, and the requirements for its successful use are :—

1. Careful sampling.
2. Accurate measuring.
3. Souring of the cream.
4. Heating of the cream after the first churning, subsequent cooling, churning and reheating.

Considering the various methods for Milk Testing one guilty of fraud cannot escape detection so that the old maxim, "Honesty is the best policy" should be adhered to.

R. N. MORGAN, '91.

At Princeton the freshmen have compulsory gymnasium work this year.

The Italian government has ordered English to be added to the courses of all its colleges.

The number of illiterate persons in Russia, Siberia, Roumania, and Bulgaria form 80 per cent. of the population, Spain 63, Italy 48, Hungary 43, Austria 39, Ireland 21, France 8, Belgium 18, Holland 10, United States 8, Scotland 7, Switzerland  $2\frac{1}{2}$  and in a great part of Germany 1 per cent.



## Local News.

THREE PET NAMES: Squaw Jessie, Starvation and Bingpinger.

QUESTION—Which one of the simple rules does Waite most resemble?

ANSWER—Long division of course.

THE REVIEW desires to congratulate H. B. Sharman, B.S.A., on his recent appointment as assistant chemist at the O.A.C. Mr. Sharman is exceedingly well qualified for the position he now holds.

1ST. STUDENT—“Have Haight and Carlyle asked you to dine with them in their new dining parlor?”

2ND STUDENT—“No, what do they give you to eat?”

1ST STUDENT—“Celery.”

SCENE at 1st. yeartable Sunday, at dinner—(Muskmelon desert).

Me—“What are they Le—h—n?”

Le—h—n “I don't know what they are but they are good anyway, and I should say they are watermelons.”

THE third year class of '92 have received an able addition to their ranks in the person of Mr. Hutchinson, who hails from the State of Wisconsin. Having spent three years at the Agricultural College, Madison, Mr. H. has come to the O.A.C. to complete his college course.

THE smiling countenances of our old friends Morgan and Freeman again greet us in the halls. As these gentlemen were late in returning, it was feared that their presence would be greatly missed among us. The former for his social popularity, and the latter on the football field.

SOME of the new students seemed very anxious to work after their arrival here. So much so that Baird, Brooks, Ferraby and Burdett, voluntarily rose at 5 o'clock one morning and went to assist at the barns. Ferraby was even more enthusiastic than the others, going over to the Creamery and tendering his services there. Some prefer rising at six and being in time for breakfast.

Who was caught in the rain last Sunday evening and came trudging up to the College wearing a lady's waterproof? It is amusing the freaks which fashion does take. We understand that the lady, in exchange for the waterproof, is flourishing a walking stick, which she now has in charge.

THE football club was re-organized on Oct. 5th, 1891, when the following officers were appointed:

Honorary President,	Prof. E. L. Hunt,
President,	F. C. Harrison,
Captain,	R. S. Shaw,
Sec.-Treas.,	H. Storey.

Committee: T. J. Hurley, W. McCallum, W. A. Freeman, W. L. Carlyle, and A. Curzon.

THE Secretary of our football club received a telegram from Hamilton, requesting the O. A. C. team to play them on their own grounds, liberally offering to repay us with the gate receipts. Unfortunately, however, we could not comply with their request as Rugby is out of the question at present.

CAESAR SAYS:—“Let me have men about me that are fat, sleek headed men. and such as sleep o' nights.”

Such as these would surely be suitable for our editorial staff, but unfortunately our two fat, sleek headed men, Carlyle and Haight, invariably persist in sleeping during staff meetings instead “o' nights.”

MUCH of the pleasure derived from the weekly meetings of the O. A. C. Literary Society is due to the fact that Miss Maggie Mills gives both her time and her musical talent to the Literary Society whenever requested. The members and officers of the Society thoroughly appreciate Miss Mills' kindness.

NEW flooring is being laid in many parts of the College, which adds very much to the general inside appearance of the building, and to the comfort of the inmates. The work, though commenced unavoidably late, has been so speedily pushed that soon the noise of the hammer, and the song of the saw will be heard no more for some time throughout the halls.

THE REVIEW wishes to extend a cordial greeting to Prof. Panton, and to congratulate him heartily on his return from the South with his fair lady. We take this opportunity to express the high regard and esteem which

we, as students, have for the Professor, and trust that Mrs. Panton will receive a warm welcome from many friends in the city and at the College.

MANY changes are already visible around the O. A. C. The new Convocation Hall and Gymnasium, and the Green Houses are in course of erection. The excavations have been made and the stonework is being rapidly carried on. Both of these buildings will not only greatly add to the appearance of the College, but will supply a long felt want at this institution.

THE dryness of the autumn is commented on by many, unfortunately for the first year men this has been an exceedingly wet month. Emigh experienced such a terrific shower a few evenings since that he was literally soaked to the skin and narrowly escaped drowning. Fortunately Brooks being near at hand, and hearing his cries, ran to his aid, applying careful methods of resuscitation, at the same time advising him not to stir out of doors while the "moisture is flying through the air."

THE students, ex-students and many friends of Professor Shuttleworth, could not but view with pride and pleasure the appointment of our popular young professor to the position left vacant by the appointment of Prof. C. C. James to the Bureau of Industries in Toronto. Prof. Shuttleworth has already followed the example set by Prof. Panton a short time ago, and the REVIEW wishes to extend to Prof. Shuttleworth and his young bride, its best wishes, and a warm welcome to the O. A. C. and the Royal City.

THE football club have been taking advantage of every opportunity to practice. Rugby will not be attempted this season because of the difficulty in selecting and preparing a suitable team to compete with older and better established ones. However, Association is being practiced as regularly as time permits of it. A good many of our old team men have returned and the new men are showing good kicking, so that we are sure of having good men to select from.

WHILE "Fred" and the "Doctor" survive, the College will not be found lacking in either style or speed. A free exhibition of speeding was given by Aylesworth in the lane recently. Aylesworth was carting stones with Fred. Notwithstanding that he had been forewarned by the deputy foreman to be very careful with

that fractious steed, Fred got away and came tearing down the lane at a terrific pace, finally coming in contact with a fence which somewhat impeded his progress. Fortunately the injuries sustained by Fred, were slight, the driver escaped scatheless, and the deputy foreman serenely smiled on a piece of broken fence, a broken cart shaft, and several missing articles of harness and drivers' apparel.

AMONG the many amusing occurrences at the Literary Society were the 1st. year nominations for committee men.

S——t,—"I would like to nominate that man over there," (pointing to the man near the window). "I don't know what his name is," (still pointing). (Fellow being nominated rising and staring wildly). "My name, sir, is Le——h——n."

Second Nom. (Le——h——n). "I take most unbounded pleasure in having the honor to nominate my most honored and worthy friend over there" (pointing). "The fellow who rooms in 45, I don't know who he is." (Cheers). These gentlemen were becoming more and more embarrassed, and it is hard to say what might have occurred but for the timely aid of Marsh, who is ever on the alert to give assistance on such occasions.

AMONG the many precious missives which may find their way into the College, the following dainty note has been handed in to the local Editor. He would consider it a great favor if the owner would call and remove the same, as it is having a baneful effect upon those of the 2nd. year who call around. It has been thought best to publish a copy, in order that the rightful owner may reclaim the lost letter. No doubt some of the first year will lay claim to it. It reads as follows:

Dear Charlie. There is going to be a concert over at —— next week. Don't you think you could take me over and we would have such a nice time. Your own dear

SUSIE.

P.S. They are going to have —— for sale. Please don't kiss me when anybody is looking.

S.

THE regular meeting of the Literary Society was held on Friday evening, Oct. 16th. Mr. Soule rendered a comic song in good style, a reading by Mr. Lehman was received with applause. Mr. J. E. Crealy gave an address on "The Influence of Society on Character." This was followed by another song from A. M. Soule. R. S. Shaw gave a reading from

Washington Irving, and the Orchestra rendered one of their best selections. The chief interest of the evening was centred in the debate, "Resolved that mixed farming offers more advantages than special lines." Mr. Hutchinson led the affirmative and presented his arguments in a forcible manner. Mr. Sparrow made some strong arguments in favor of the negative. Mr. Bell replied on behalf of the affirmative and Mr. Harcourt produced some good points for the negative. The decision was given in favor of the affirmative. Mr. Morgan then read the critics report and the meeting adjourned.

THE first regular meeting of the Literary Society was held in the class-room on Friday evening, Oct. 9th. The President, Mr. Buchanan, gave an address, in which he endeavored to impress on his audience the necessity of taking advantage of every opportunity to take an active part in the Society. Notwithstanding the short time for preparation, an excellent programme was rendered during the evening. Mr. Soule was then called on for a song which was well received. A reading by Mr. Harrison, on Tobacco, created considerable amusement. The orchestra, composed of H. Story, J. Atkinson and W. Shaw, gave a selection which was heartily encored. Mr. Day then gave a humorous reading which was greeted with applause. Mr. McCallum favored the Society with a choice selection from Dickens, followed by a recitation from Mr. Hutchinson, and also from Mr. Marsh. Mr. Burns gave an interesting address on Halifax and its harbor. In the absence of the critic, R. N. Morgan, Mr. Yuill was chosen for the evening, his remarks were humorous and suggestive. The names of Messrs. Holmes and Hutchinson were added to the programme committee and then the meeting was adjourned.

AN OPEN meeting of the Y. M. C. A. was held on Thursday evening, Oct. 15th. The hall was filled by the students and friends from the city. The Rev. Mr. Freeman opened the meeting with prayer. Mr. Hunt, who presided at the meeting, then announced that he had received a telegram from President Mills, expressing his regret that he could not be present at the meeting. Short addresses were then given by Mr. McIntosh, Major Davidson, Prof. Shaw, D. Buchanan, R. S. Shaw, D. Z. Gibson, W. L. Carlyle, J. M. Hutchinson, and L. Bell, who attended the

Northfield Convention as a delegate from the O. A. C. The topic selected for the evening was, "Seek ye first the Kingdom of God and His righteousness and all these things shall be added unto you. Mrs. Savage, Miss Patterson, Mr. Brydon and Mr. Soule sang several fine solos, which delighted the audience. A quartette given by Mr. and Mrs. Savage, Miss Patterson and Mr. Brydon formed a pleasing feature of the programme of the evening. Mr. Hunt, on behalf of the Association, thanked the friends from the city who had contributed so much to the enjoyment of the evening, and the meeting was then brought to a close.

THE annual farm sale was held on the 7th. Oct., the attendance being large. The prices paid for the stock, which was in good thrift generally, were not high. Indeed, for the calves, they were decidedly low, but for the sheep and swine they were fairly good. The following is a summary of the prices paid-

6 Shorthorn calves.....	\$282 00
2 Hereford calves.....	69 00
2 Aberdeen Poll calves / and aged bull	150 00
1 Ayrshire cow and calf / and yearling bull	172 00
1 Holstein bull calf.....	75 00
1 Jersey cow.....	100 00
10 Berkshire pigs, nearly all young..	88 00
33 Improved Yorkshire pigs, / nearly all young	355 00
20 Head of sheep.....	279 00
2 Yearling grade steers.....	117 00
5 Grade cows, nearly dry.....	193 00
1 Young colt.....	45 00

Total.....\$1925 00

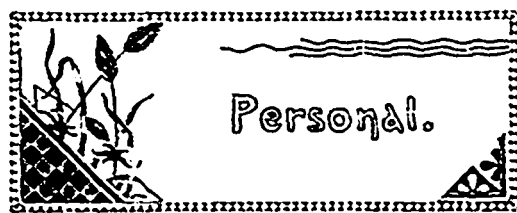
In addition to the live stock, seed grain was sold privately to the value of about \$100. It is quite possible that this feature of the Sale, under the wise direction of Mr. Zavitz, may, in the near future, over-shadow the other. The desire to have the Sale held in other sections of the country is evidently growing. It would be only just to meet this desire, since farmers living in remote parts should have an opportunity furnished them to get good stock as well as those near at hand.

MR. PUTNAM is the originator of a magic art by which tables suddenly rise, take to their feet and move rapidly across the room. The many attempts made by the third and second year to imitate this magic art had hitherto proved unsuccessful. On Monday evening,

in the dining hall, it was determined by common consent to try once more in the presence of the magician himself. Imagine his horror when a table was suddenly observed to "get a wiggle on" and move across the room, followed by other tables in rapid succession.

"There was silence, deep as death,  
And the 1st. year held their breath—For  
a time."

The magician shouted and exercised his wand in vain. The tables creaked and groaned, swung to and fro, increasing in speed as they went. It is hard to say what the results might have been, as the tables were still pacing round the room at a rapid gait and were on the point of rushing out the door, when the 2nd. and 3rd. year men with great heroism and presence of mind gallantly came to the rescue, flung themselves in front of the runaway tables and stopped their progress. These gentlemen deem it advisable that this experiment be more carefully conducted in future. It is rumored that Mr. Putnam intends making a tour of the College ere long in order to personally thank the 3rd. and 2nd. year men for their brave efforts in his behalf.



## Personal.

F. M. Husband, '91, is a very successful bee-keeper of Middlesex Co.

D. L. Leavens, A.O.A.C., '87, is farming in the vicinity of Belleville.

F. A. Wilkin, Silver Medalist of '91, is taking the course of applied science at McGill University.

W. E. Phin, A.O.A.C., '81, is contracting in Brantford. He was one of the contractors for the St. Clair Tunnel.

C. B. Etherington, '86, paid the College a flying visit this summer. He is employed on the staff of one of the New York papers.

T. J. Marsh, '86, has returned from his mission on the shores of Lake Temiscaming, and is taking his third year at Wycliff College.

N. Silverthorn, A.O.A.C., '82, a successful Veterinary Surgeon in New South Wales, Australia, sends his best wishes for the REVIEW.

J. A. Derbyshire, A.O.A.C., '89, of Brockville, visited the College on the 19th inst., accompanied by his blushing bride. May happiness and prosperity attend them.

N. McFarlane, '79, farmed in Quebec for a time, but afterwards went into commercial life, first as a traveller and then on his own account. At present he has a boot and shoe business in Tampa, Florida, U.S.A.

J. W. Widdifield had scarcely arrived here when he was called home by the sad news that his mother was dying. We have since learned of her death, which occurred on the 14th inst. We extend our sympathy to him in his bereavement.

Harry Field, B.S.A., '91, last year's Exchange Editor, is studying for the Congregational ministry at Victoria University, Cobourg, although we regret that agricultural science has lost such an able exponent, we wish him success "in sowing the good seed of the kingdom."

C. F. Whitley, B.S.A., '91, late Managing Editor of the REVIEW, was with Prof. Robertson at Ottawa, for a time and now is lecturing on dairying in Manitoba and the west.

S. Calvert, A.O.A.C., '86, paid Guelph a flying visit this summer. Since leaving the College he has taken his degree of B.Sc. from McGill University, and also a post graduate course in Science at Harvard University.

J. A. Craig, B.S.A., '88, Professor of Animal Husbandry in Madison University, Wis., U.S.A., writes wishing the REVIEW an overflowing measure of success, and we expect an article from his pen shortly.

H. A. Morgan, B.S.A., '89, paid his Alma Mater a few day's visit this summer. He was on his return from Cornell University where he has been further qualifying himself for his responsible position as Professor of Horticulture and Entomology in Louisiana State University, Baton Rouge.

"Joe" Palmer, B.S.A., '91, Personal Editor of the REVIEW last year, is with Prof. Dean and the perambulating dairy. Joe's lectures are a great attraction for the fair sex of Essex County. While S. P. Brown, A.O.A.C., '88, handles the churn, and as the *Globe* says, "surprises the ladies with the quality of the butter."

We are pleased to hear that G. C. Creelman, B.S.A., '88, has been promoted from lecturer to the chair of Biology in Mississippi State University. The attractions at the O. A. C. caused Prof. Creelman to spend a short time here after his summer term at Cornell.

We clip the following from the *Herald*:— "Prof. J. A. Craig, of the Agricultural College, Mis., has been appointed judge of live stock at the Provincial Exhibitions in Nova Scotia and Prince Edward Island. He was previous to his being called to the University, Editor of the *Canada Live Stock Journal*. This is an honor which the Agricultural College should be proud of.

We are pleased to hear that W. A. Warner, of Napanee, has followed the advice so often given in the columns of the REVIEW, and has settled down in married happiness on a large fruit farm near Trent. Though rather late in the day, we extend our congratulations.

T. E. Webster, A.O.A.C., '90, is farming near Creemore, Simcoe Co. He has had many difficulties to contend with, such as walking a long distance to his work every morning. But all this is past we are pleased to learn, as he has built a house, and we will leave it to our readers to imagine the next item of importance concerning Mr. Webster.

W. Randall, A.O.A.C., '89, is farming near Thornbury, Grey Co. He has a fine farm on the side of the Blue Mountains, and is going into fruit growing for which this district is noted. We would commend to his notice the last sentence in the preceding paragraph.

In older institutions of learning the students frequently point to the records of their parents. The O. A. C., being a younger institution, the ex-students do the next best thing, by sending their brothers. Among the freshmen we notice the following who can point with pride to their brother's names, Messrs. Dean, King, Lehman, McKenzie, Phin, McFarlane.

We are especially pleased to hear that W. Carlyle, winner of Prof. Robertson's Special Gold Medal for Agriculture and Dairying, '91, was successful, not only as an exhibitor, but also as a judge. The Agricultural Society of his section had such confidence in him that they appointed him single judge of cattle at Cornwall Exhibition. Although he had a large class to judge his decisions were received with evident satisfaction

H. B. Sharman, B.S.A., '91, lately appointed Assistant Chemist at the O. A. C., has seen more of the College than any other student, having entered its precincts in 1883. He took the first year regular course and a special live stock course. He then moved with his family from Stratford to Manitoba and farmed for a few years. In 1888 he received his associate diploma, and afterwards obtained a first-class professional certificate and taught for several years in Manitoba. The fall of 1890 saw him again at the O. A. C. He received his degree with the graduating class of '91.

Mr. Sharman is a diligent worker, a clear thinker, and a good speaker. The students will profit by his experience in teaching.

A little bird lighting on the window sill of our sanctum-sanctorum the other day, stopped a moment, turned his knowing head a little to one side and delivered himself of the following: "Do you remember Creelman of '88. The boy who roomed in No. 1, and played half-back with Auntie Harrison the time they beat Stratford at Rugby? Well, in my flight north, I passed over the grounds of the Agricultural College of Mississippi, and saw there a dwelling house in process of construction. An old crow told me it was for 'Creely.' He now occupies the chair of Biology in that institution. Good bye, I am off for the North Pole, but remember what I tell you, 'Creely's' going to get there."

G. Harcourt, B.S.A., of St. Anns, has received the appointment of Professor of Agriculture and Chemistry, in Charlottetown, P. E. I. He has been a very successful student and was awarded the Gold Medal in 1888, obtaining his degree the next year.

In 1889-90, he was manager of the O. A. C. Creamery. In the fall of 1890 the work of the Chemical Department having increased to such an extent that an assistant was needed, he was chosen for this position. His earnest and valued efforts, both in connection with the Y. M. C. A. and the Literary Society, will be long remembered. He was President of the College Literary Society for 1891, and of the Y. M. C. A. in 1890. In entering this larger field of usefulness he leaves many warm friends, not only in the College, but also in the Royal City.

The vacancy on the staff of the O. A. C., caused by the resignation of C. C. James, M.A., Professor of Chemistry, has been filled by the appointment of Prof. Shuttleworth, of Prince

of Wales College, P. E. I. Prof. Shuttleworth is an old O. A. C. boy, having received the first Silver Medal in 1882. Between the years 1882-6, he had charge of the Experimental Department. In 1886 he resigned this position to attend McGill University, where he received his degree of B.A.Sc. He was appointed to the position of Professor of Agricultural Chemistry in Charlottetown. Whilst there he gave entire satisfaction, and many were the regrets when he left. The summer of '91 was spent at Harvard University, especially preparing himself for the responsible position of Professor of Chemistry in the College, which he had entered as a student eleven years before. Prof. Shuttleworth has a kindly, genial manner, which at once wins him a place in the hearts of the students.

We regret the departure of Prof. James, but we are pleased to have as his successor so able and promising a teacher.

We are always much pleased to hear of our students doing honor to their Alma Mater, especially their competing successfully with older and more experienced breeders in the show rings. We might mention a few prominent ones:—W. J. McNiven, '86, breeder of Holsteins, Winona, came to the front with a herd of eight animals. He received at Toronto four firsts, one second, two thirds, and third on the herd, eight prizes in all. At London he received two firsts and a second.

A. Yuill, '91, Carlton Place, received a first and a second for his exhibit of Ayrshires, at Toronto, and were very successful at Ottawa. He sold six animals to the New Brunswick Government.

J. E. Tolton, '91, Walkerton, received the following prizes for his Oxfords, at Toronto, two firsts, one second and two thirds, besides third on the pen. At London he captured three firsts, five seconds and two thirds.

J. Harcourt, St. Anns, Silver Medalist, '90, was also very successful with his Oxfords.

R. N. Morgan, Silver Medalist, '91, carried off two firsts, a third, and a diploma, for his herd of Durhams at London.

At Harvard and the Ontario Agricultural College, the ratio of teachers to students is 1 to 10. University of Wisconsin has 1 to 13½.

Rules for punctuation:—When you read until you have to draw breath, put in a comma; when you yawn, insert a semi-colon; when you get very dry, make a paragraph, and when you go out to get it, put in a period.

## BREEDERS' CARDS.

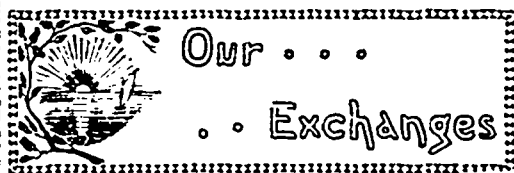
J. A. FLEMING, Weston, Ont., breeder of Hereford cattle. Write for catalogue.

JOHN HARCOURT, St. Ann's P.O., Ont., Beamsville Station, G.T.R., importer and breeder of Oxford Down sheep. Inspection invited.

THOS. CARLYLE & SONS, Chesterville, Ont., breeders of Clydesdale horses, Berkshire swine, Iceland and Exmoor ponies. Young stock for sale.

J. YUILL & SONS, Carleton Place, Ont., breeders of Clydesdale horses, Ayrshire Cattle, Shropshire sheep and Berkshire swine. Young stock for sale.

J. M. HURLEY, dealer and breeder of Improved large white Yorkshire pigs from imported stock. Breeding pigs for sale not akin; also road and carriage horses. Kingston, Road Stock Farm, or Box 442, Belleville, Ont.



Two copies of *TheVarsity* lie before us, but there is not much to which we can call special attention. One noted feature is a speech in Latin, as well as some poetry written in "country language."

The *Orator* is the largest and most readable College paper we have yet received. Few magazines have taken the trouble to present such an attractive appearance. Its columns treat of a variety of subjects, comprising Christianity, Literature, Geology, etc. There is a very original article on "Shakespeare's Portia," an anticipation of the ideal American Woman. Students of the "Immortal" will do well to read the sketch of Portia's character, written so ably by J. R. O'Connor.

In the *Aegis* we notice that they give a short story, which we feel would be an introduction into our paper that would be welcomed by the students. Of course the story should be good and well written.

We are always glad to receive exchanges from Agricultural Colleges, one of the best of these is the *Speculum* from Michigan Agricultural College. An address to the alumni, a short history of the electric light, together with personal and college news make up an interesting number.



**QUALITY HIGH.  
PRICES LOW.**

FOR BEST VALUE IN

**BOOTS AND SHOES**

TRY

**PARKHILL'S**

26 Lower Wyndham Street.

GUELPH AND ONTARIO  
*Investment and Savings Society.*  
INCORPORATED 1876.

HEAD OFFICE—Cor. Wyndham St. Market Sq., Guelph.

**CAPITAL, - \$1,000,000.**

DAVID STIRTON, - President.  
A. B. PETRIE, - Vice-President.

LOANS.—Money on mortgage at lowest current rates  
of interest with favorable terms for repayments.  
Savings Bank deposits of \$1.00 and upwards received  
and interest allowed.

WM. ROSS, MANAGER.

**JOHN MORGAN & SONS,**

BREEDERS AND IMPORTERS OF

**Shorthorn Cattle**

AND

**Shropshire Sheep.**

**YOUNG STOCK FOR SALE.**

Kerrwood P.O. and Station.

Sarnia Branch G. T. R.

**ART STORE.**

**R. H. BRYDON & CO.**

WE KEEP ONE OF THE LARGEST STOCKS OF

✻ **MOULDINGS** ✻

KEPT IN WESTERN ONTARIO.

—ALSO—

Pictures, Frames, Artists' Materials, Cur-  
tain Poles, Enamel Paints, Etc.

Your favors are requested. Our Prices are  
Right for All.

116 Quebec St., - opposite Montreal Bank.

**SHAW & GRUNDY,**

**Merchant Tailors,**

**HATTERS,**

AND DEALERS IN

**Fine Furnishing Goods**

OF ALL DESCRIPTIONS.

**EYESIGHT TESTED FREE**  
—BY—

**G. D. PRINGLE,**  
GRADUATE OPTICIAN.

Pringle's Jewelry Store, - Guelph, Ont.

ONTARIO

**Bee Keepers' College.**

For Terms apply to

**W. F. CLARK.**

**STUDENTS,**



Do not Fail to Patronise

Those who Advertise in the



**“REVIEW.”**