

PAGES

MISSING

THE O. A. C. REVIEW

THE DIGNITY OF A CALLING IS ITS UTILITY.

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Conditions Regarding Location of Farm Buildings

BY PROFESSOR EVANS.

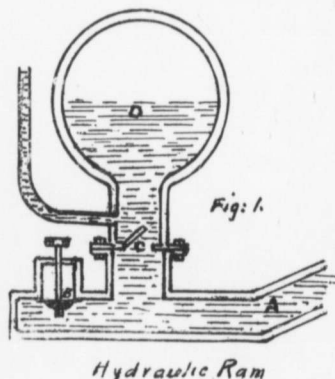
THE old homesteads are passing away, and are being replaced by modern structures with few or none of the modern conveniences so conducive to health and comfort. Our purpose, therefore, is to lay down a few facts for the consideration of the farmer contemplating erecting new premises. If these broad principles are acted upon and thoughtfully carried out he can but attain the desired ends, a homestead thoughtfully planned, conveniently arranged, carefully constructed, beautifully situated and healthfully located.

The farmer, continually exposed to the discomforts of all kinds of weather, needs and deserves for himself and family a home where, during his hours of rest and recreation, he can enjoy comfort to the fullest extent. In the past, frequently combined circumstances compelled the farmer to provide buildings for family and stock within a brief period of time, hence little forethought was given to deliberate over the essentials of site, conveniences, arrangement and comfort of the prospective home: but now there is not

a shadow of an excuse for any man to put up a building without due consideration as to position, its adaptation to use and relation to environment.

The first consideration should be given to situation. Buildings should be placed with due regard to aspect, soil, water, proximity to roads, relation to pasture and of one building to another to the end of securing the greatest degree of convenience and the utmost economy of time and labor. Having determined one's entire satisfaction that these conditions of utility are fulfilled, see that the structure embodies a modicum of that pleasing effect which arises from just proportions and harmonious adaptation to the use for which the buildings are intended. The ideal site is a hillside sloping south or south-west, with protecting hills or timber on the north and west. A site too closely invested by trees loses much of what it gains in shade and shelter by the absence of free circulation of air, by the exclusion of every breeze during sultry summer weather, and by shutting out the sunshine in the cold winter days. Shade trees are,

however, as essential to the comfort of man and beast as to the protection, beauty and attractiveness of the home stead. The buildings should face so

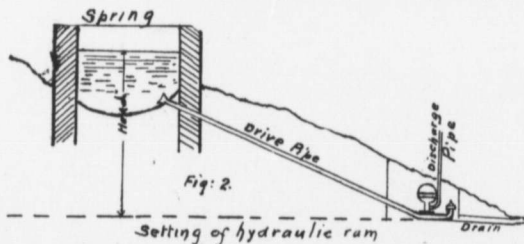


hollow site, however porous and well drained the soil may be is more liable to be hot and sultry in summer, and cold and frosty in winter. In the upper layer of the soil there is a certain amount of moisture to which is due damp and unhealthy conditions of basements and cellars. This dampness is largely attributable to surface water, and is more or less directly proportional to the absorptive power of the soil, and so can be, in a great measure, obviated by tiling and trenching.

A plentiful supply of water is, of course, essential to every site, and its existence and quality should be determined at once. For domestic purposes it should be pure and clear, free from turbidity, odor and taste. The best source is a free flowing spring; failing this a deep well with a pump is the usual alternative means of supply. The carelessness of placing the barn yards on higher ground than the well without due precautions to divert the surface drainage is, to say the least, deplorable, or to locate a cesspool within short distance of the well is one of those culpable indifferences deserving of prosecution for it is practically impossible to determine by the surface of

as to get sunlight into all the stables, pens and rooms if possible, for "when sunlight does not enter the doctor must," is as true of the stables as it is of the dwelling. This may be accomplished by placing the residence south east, instead of direct east or south.

Then investigate the character of the subsoil. In this connection the chief



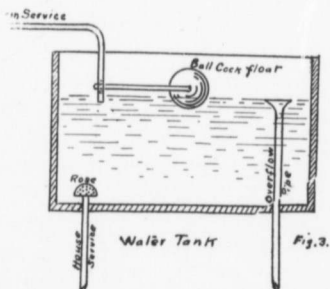
factors to be considered are the water and the air. An elevated position on a well drained soil is essential to avoid unhealthy and damp foundations. A

the ground the state of the soil below. The fact that the liquid from receptacles seeps away is sufficient evidence that it has reached some porous vein

and is percolating through the soil spreading contamination for hundreds of feet around.

The problem of providing a continuous water supply for the country home is no longer a speculation. Many efficient systems may now be installed at a moderate cost. In every case it is desirable to have a regulating cistern or tank, Fig. 3, as a means of storing the water for distribution by pipes to every part of the homestead where it is required. An elevated tank may be used to deliver the water by gravity or a pneumatic tank by air pressure. The advantages of the pneumatic over the elevated tank are many. The tank and pipes can be easily made frost proof in winter, and the water is kept cooler in summer. It is closed to dust and light, and has the additional advantage of resting on the solid ground. The same means may be utilized to force the water into a pneumatic tank as used to elevate it to a gravity tank, that is, by a windmill, gasoline engine, hot air engine, hydraulic ram or by hand. Which will be the most convenient and economic will depend upon the situation, the source of supply, amount required, and the need of power for other purposes. The engines have the merit of being ready to pump whenever required and at the same time to perform some other work besides. The windmill and the hydraulic ram have the advantage of operating without fuel. The windmill unfortunately has to depend on atmospheric conditions which when water is most needed, there is "neither breath nor motion" in it. The hydraulic ram on the other hand is a machine which works continuously by day or night, in calm or storm steadily, uniformly, requiring neither supervision nor fuel.

A sectional view of this machine is given in Fig. 1, which will help to explain its operation. A is the supply pipe conveying water, which enters the ram at B, from the spring. The valve B opening downwards allows the water to escape, producing a current along the pipe A. The water increasing

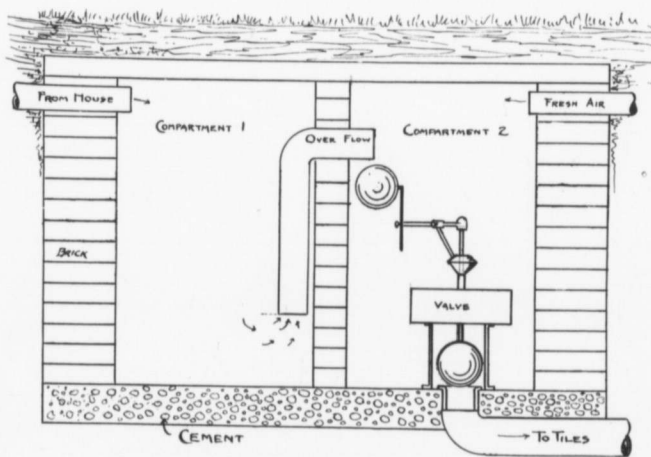


in velocity closes the valve B, arresting the motion suddenly, causing a reaction of sufficient pressure to open the valve C which allows a portion of the water to enter the chamber D. Thereupon the valve B drops again by its own weight setting the water once more into motion towards that point, and so relieving the pressure at C, closing the opening. This process is repeated continuously, the valves B and C opening and closing in turn, forcing the water up the pipe E which discharges a constant stream of water. It is essential that the ram be placed at a lower level than the spring so that the supply pipe may have a fall into the ram, Fig. 2. The relation between the height of source of supply above the ram and the elevation to which the water is to be raised determines the proportion of water delivered to the water wasted, and the length of the drive pipe depends upon the fall to

the ram and the height to which the water is lifted.

Another question of vital import is that of sanitation. It has been a much debated subject among sanitary authorities as to whether a cesspool can be constructed so as to be perfectly sanitary and satisfactory. This is not only possible, but much to be preferred in every way to the outhouse both as to comfort and sanitation. A cesspool

built as per sketch Fig. 4, is regarded as the most sanitary layout for the amount of money it will cost that can possibly be constructed. As to its construction a great deal depends, of course, on existing conditions such as location, soil and the amount of money to be expended. Its capacity may be made sufficiently large so that it will not need to be emptied more than once a year.



Cesspool for Country House. Fig. 4.

The Trappist Monastery at Oka, Quebec.

OKA is a village situated on the north shore of the Ottawa River where it expands into the Lake of the Two Mountains. Ste. Eustache is a small village some ten or twelve miles north of Oka on a side-line of the C. P. R. Between Oka and Ste. Eustache, and overlooking from its hilly situation the Lake of the Two Mountains and the Island of Montreal, stands a monastery, which appears to the occasional traveler like

labor, (En. Brit.) They sleep on straw, scourge themselves with leathern thongs, fast, and endure hardships in this life that they may walk blamelessly through this "vale of tears," and attain to a more honorable place in the life everlasting.

The site of La Trappe is an ideal one for such a monastery. The somewhat remote situation, with beautiful natural surroundings, conduce to habits of silence, reflection and prayer; the farm of 1,500 acres furnishes an abundance of manual labor, and the Roman Catholic Province of Quebec encourages and upholds the order. In such a situation, the monks can pursue their favorite occupation of farming and complete their span of life, unmolested, and undisturbed.



OKA MONKS AT WORK.

a bit of medieval Europe dropped among the old Laurentides.

The monks of this institution belong to the Trappist order. Founded in France in 1140, suppressed at the time of the revolution, institutions yet flourish in France, Germany and England. In America are three monasteries of this order—one at Gethsemane, Kentucky, another at Melleay, Iowa, and the aforesaid abbey at La Trappe, Que.

The vow of the monks embraces: perpetual silence—except for devotion and salutation, — severe abstinence, eleven hours daily prayer, hard manual

The traveler to Oka Monastery comes upon the building suddenly, for it is situated in a valley in the hills. A large edifice somewhat like a boarding school in outside appearance, with a church in the rear, proves to be the monastery proper, where some seventy or eighty monks and as many more farm hands and "adherents" live. The former of these are dressed in white robes and the latter in brown, and in all appear that rugged strength and cast of countenance which denote continual contact with out-of-door, manual work.

The sawmill and barns stand hard

by. The lumber used in the various construction processes is ripped out by monks and students and helpers. The barns are filled with choice herds of cattle, sheep, and swine. The dairy herd of one hundred choice cattle, kept in such trim, healthy stables, makes us recall that it is from the milk of this herd that famous Oka Cheese is made. Oka monks buy the right of manufacture in France, and, it is said, only the cheesemaking monk knows the secret.

This first commercial touch of the monks reminds the traveler of that other Oka Wine, and when he has seen the ten acres of luxuriant grapes, he realizes that here is another mark of Old France, whose inhabitants often will not drink tea nor coffee, but choose rather wine and cider at their meals.

The horticultural department is an important one. It is, like all the departments, established on a money-making basis. The present head is an expert horticulturist from France—Professour Reynaud. They have about twenty-five acres of apple trees in full bearing, ten acres of grapes, and all other fruit and garden truck that can be grown in that region. One brother has a ginseng patch, and is scouring the mountains for plants, propagating more, and growing under covered areas a considerable quantity almost old enough for market. Lucky he, if many roots par take somewhat of the shape of the human form for then the Chinese purchasers will pay great prices. The horticultural department at Oka has made itself a live commercial factor in Quebec Province for many years by

supplying high grade, northern-grown nursery stock. It has already served many customers, not the least of whom is the Macdonald College at Ste. Anne de Bellevue.

In the gorge below the monastery is the poultry department. The colony houses, the breeds kept, and the methods of handling, are most modern. This poultry plant, also established on a commercial basis, and the plans of extension would indicate a thriving

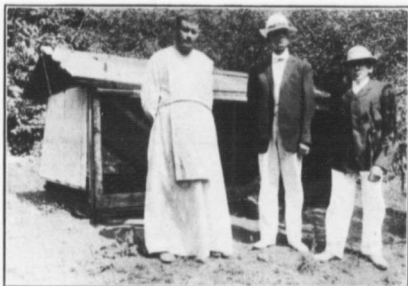


Photo by J. W. Jones.

business. Montreal furnishes a fancy price for Oka chickens, capons, and eggs. The well-known hotel—The Windsor—is a pleased customer of Frere Liguori, the commercial monk of Oka Monastery.

Somewhat apart from the monastery is situated the Ecole d'Agriculture where farmer boys are educated. Their education is given an agricultural trend, and boys are made acquainted with up-to-date methods of farming by actually working at the business. The cut of the rough poultry house shown above illustrates the practical work of the students of the school. The boys are permitted to sell all the chickens they can raise from a given number of eggs. It is to encourage this kind of education that the Govern

ment of Quebec Province gives an annual subsidy of several thousand dollars to Oka School of Agriculture.

The traveler leaves the monastery with a feeling that he has encountered a kind of life somewhat akin to that described in histories of medieval Europe. But there is some change from medieval conditions. Probably the dress, and habits are much the same; but the methods of agriculture, on which they depend for a living, have

been changed to suit the times. He is certainly impressed with the courteous bearing of his entertainers, and compelled to respect many of their ideas of life. Surely, he feels, monasticism must cease, but the retired life, the beautiful services, and the healthy recreative employment of these reverend, austere men must still find adherents, particularly in the Roman Catholic Province of Quebec.

J. W. J., '09.

La Trappe, Qué. Allée de N. D. de La. Vue de l'École d'Agriculture



SCENES AT OKA

The Importance of Cow Testing

BY CHAS. F. WHITLEY.

TO any farmer who prides himself on being really wide awake and business-like, the question of cow testing must present a forcible appeal. Shrewd enough in his ordinary dealings with business men, should not the commercial aspect of his own dairy herd be thoroughly considered?

A fair income from the herd is usually obtained, but is the due proportion of income to profit carefully determined? The income may be fairly large, but the total profit remain proportionately small; would that be a satisfactory outcome of a year's hard work with the crops and in the cow stable?

A timely question for any dairyman is, can the gross cash revenue remain at a fair figure and the net profit be materially increased? The answer is a most decided affirmative; but it will be dependent on the farmer's application of primary business principles to all details of his work, and most particularly to the individual cows comprising his herd. A moment's reflection makes this perfectly clear. If the profit is to be increased, and the selling price of dairy produce cannot be controlled by the farmer, he must seek to reduce expenses. Is every farmer perfectly certain that each single cow at present in his herd is returning a profit? If two or three cows out of every twenty are not producing enough milk and butter fat to pay the cost of feed, where can the question of profit from them possibly come in? But, if these two or three animals, those particularly costly

ones to keep, are taken out of the herd, expenses are immediately reduced and profits on the remaining animals are forthwith increased. This principle can be successfully applied to many a herd to-day as it has been to many already.

Let one illustration make perfectly clear what could be done by intelligent weeding out. In one herd of 22 cows the total value of production at an average of 3,429 lbs. milk stood at \$888. Allowing \$35 as the average cost of feed, the profit was \$118. Suppose now that the eight poorest cows, that averaged only 2,510 lbs. milk had been disposed of, leaving only fourteen cows in the herd, the calculation would have been, total value of production \$619, less cost of feed (14 cows at \$35) \$490, or a profit of \$129. This means that all the labor attendant on the care of eight cows for one entire year could have been saved, that \$280 worth of feed would have been on hand, and that the profit even then would have been eleven dollars more. The eight cows with the low production were all of mature age, and the fourteen proposed to be left included three heifers capable of development, but which stood below the average yield. It is evident further, that an enormous stride forward towards infinitely better herds would be taken if such a culling process could be put in force on a large scale.

This opens the larger question, how is the whole herd to be brought up to a greater profit-earning capacity? At

tractive individuality may seek to captivate, but what is needed most to day in every dairy herd is clear evidence of individual performance. A little time, a little arithmetic, a very little cash outlay, and the record of each cow's production is down in black and white as a basis for reference, for study, and for definite action along the line of herd improvement. With an occasional weighing of feed, the total cost for the year can be quickly estimated and balanced against the total income from milk or butter fat. To take only the average of the herd for six months or a year, or the total production for any short period is manifestly unsatisfactory. Then must follow judicious selection.

There is abundant necessity for some system of recording individual production. The exceptionally good cows, those champion producers that amaze the world with their capacity, how are they discovered? Simply and solely by the test, by the record. Without a memo of the individual yield such excellent performances would have been completely lost sight of in the incomplete herd "average." But with the figuring for the individual came the enhanced value, for the record championed the appearance, and the market value advanced by leaps and bounds.

Supposing, however, that these fancy animals, these marvels of production do not frequently appear in the ordinary farm herd, does it pay to test cows? Most decidedly, yes. It will pay not only in hard cash, but in the increased interest taken in the individuals of the herd, and anything that adds to the intelligent interest of routine farm labour is to be heartily welcomed. Pleasing appearance, and

"dairy form" are not invariably borne out or supplemented by a profitable yield at the pail. Some check must be kept. Scores of men who are now testing say that their judgment as to the best cow in the stable was sadly astray. The cow thought the best comes out only fourth or fifth, while one classed as only average may prove herself the best.

Then, too, must be considered the value of the record in revealing fluctuations in yield. If the record is continually before the owner's eye, or the hired man's eye, a sudden shrinkage of any one cow's milk will be noted, the cause sought for, and the remedy applied. This means augmented profit. Then will almost invariably follow better treatment for the herd in general so that the usual causes of rapid shrinkage in yield will be provided against. It will also mean that opportunity will be afforded the individual cow to prove her ability. If she is offered another pound of grain and she responds with a proportionately increased yield, a great deal has been gained by both man and beast. The owner is studying, which means a quickening of the perceptive faculties bound to have a pleasurable reflex action in his whole mental attitude towards farm work; he is also securing more profit; and the cow is better off now that she has the opportunity for which she may have been yearning.

With the record there is obtained then, in a word, that which every progressive dairyman really desires, not simply a rough estimate, or an unsatisfactory guess as to total production, but positive and definite information regarding each cow kept. This is the starting point for building up a first class and profitable herd. Without

this knowledge it is impossible to take any intelligent action making for improvement—or profit.

If it is difficult to "make money," or rather, to realize a profit, with the average farm herd in view of low prices for dairy produce and high prices for feed, is it not the dictate of ordinary common sense to see that the herd is composed of only first rate milkers? No culls or second class animals are wanted, no ordinary farmer can afford to feed them, but only such cows that will produce economically an abundant supply of milk and butter fat. That is the practical standard. Further, if it can be shown that the material at hand, that is the cows at present composing the herd, can be quickly improved with little or no cash outlay, should not every dairyman seize the opportunity?

As hundreds of our good dairy farmers in the Dominion can now testify, a most substantial improvement has been made in their herds, amounting in many cases to obtaining twice as much and, in some cases, almost three times as much milk from the same number of cows in four or five years by this method of recording systematically the weight of milk given by each individual cow, and then acting on the information obtained. Just consider what that means: an income of twenty dollars per cow increased to forty and fifty dollars; a cheque from the factory of thirty dollars per month from ten cows increased to sixty dollars! It means

vastly increased satisfaction to the owner in his better stock, to each member of the household in a little more spending money, and to the community in general in the visible improvement that is bound to follow in the farm and whole locality.

Let the following examples stimulate other farmers to immediate action. In two years one man increased his herd average from 3,500 lbs. milk to 5,900 lbs. per cow. In three years another man doubled his average per cow; another farmer in three years increased his revenue from \$34 to \$60 per cow. Think what a perfect revolution in Canadian dairying this means! With practically no extra cash outlay, but with a bountiful expenditure of thought, and without increasing the present number of cows kept, it is an easy matter to increase the present revenue from milk by *many millions of dollars* annually. What a name we could make for ourselves among the nations of the world if our dairymen would work unitedly in this direction.

Co-operation in the work of weighing and testing will be found most beneficial and local testing associations should be organized as thereby information is gained as to the results obtained in other herds, and a lively incentive given to a continuance of the work, while the expense is proportionately lowered. Over eighty associations in the Dominion have been organized by the Dairy and Cold Storage Commissioner's Branch, Ottawa.

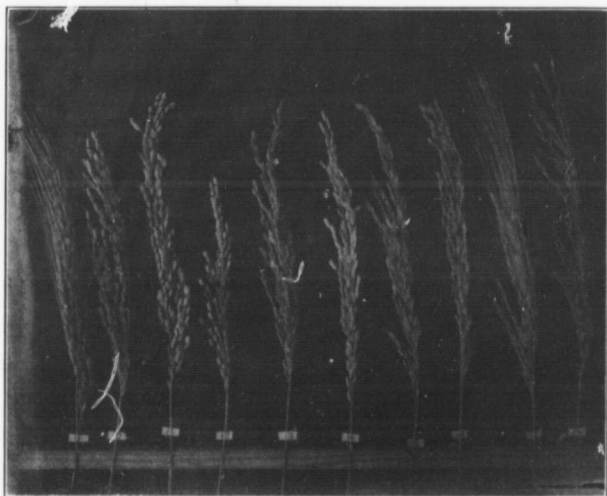
Rice Growing in Arkansas

BY W. S. JACOBS, B.S.A.

FOUR years ago that section of Arkansas known as the prairie section, and comprising five counties, Prairie, Lonoke, Arkansas, Lee and St. Francis, was practically a barren waste. Thousands of acres of fine fertile land were still in wild prairie grass which was of small value as hay. Owing to the close, impervious subsoil underlying this vast area, water which fell in the form of rain disappeared very slowly. Surface drainage is a small factor in the carrying away of the water as the ground for miles in all directions is very level; so level, in fact, that one can see, while standing at the depot at Lonoke, a train approaching while yet twenty-two miles away. Some twelve years ago a man by the name of Miller conceived the idea that rice could be grown on the land in Prairie County, near the town of Desarc. His attempt was not a success owing to difficulties encountered in pumping the water onto his land. After his failure the industry was not thought of again, until when six years later, some of the enterprising citizens of that section of the State raised \$1,000.00 and made a standing offer as a bonus to the man who would first demonstrate that rice could be successfully grown on that area. It remained for a Mr. Burroughs, living near Carlisle, Ark., to first successfully raise rice and claim this bonus. By an elaborate system of levees and careful attention to mechanical difficulties, and the overcoming of these, he was able to make a clear profit, over and above the expense of

his pumping plant, of \$3,000, and the \$1,000 bonus made him a clear profit of \$4,000. After Burroughs' phenomenal success it was not long before hundreds of farmers and landowners became very much interested in this new industry, and the value of land increased from three and five dollars per acre to twenty and twenty-five. Where formerly nothing had grown but broom sage and blue stem, now sprang up smokestack after smokestack of pumping plants, and thousands of acres of land which had never before felt the share of the plow was now brought into a state of cultivation. Immense crops of rice have been grown and are being grown in that section each year, and where there was previously nothing but a long level tract of unbroken prairie grass, there is now produced field after field of one of the most important cereals in the world to-day.

The cultivation and growing of rice is unique in itself. No other cereal crop is such that man is more absolutely in control. The effect of climatic conditions, precipitations, or lack of it, are all totally eliminated. If the growing season be somewhat dry, a little more water is turned on and this deficiency easily overcome. If more than the usual amount of water falls this only makes the job of pumping water the lighter. The only way in which the crop can be affected by precipitation is during the blooming stage. Rice is, as far as we know at the present time, a cross fertilized plant similar to rye, and continued rains during



VARIETIES.

the blooming period tend to destroy the pollen and prevent fertilization.

The first step in rice growing after procuring the land is to arrange the pumping plant and levees. The pumping plant to put the water on the land, and the levees to keep it there. In South Carolina only the levees are required as the water is obtained by the tide backing the water in rivers and creeks over the land, and thus obtaining the same results. Rice must have water from one and a half to three inches deep over it from the time it is two inches high until it is cut. The plant for applying this water in the State is somewhat expensive. Sinking a well from 110 to 150 feet deep costs from five to seven hundred and fifty dollars. The boiler and engine is another matter of from one thousand to fifteen hundred dollars. Therefore, it is necessary to be certain of good

profits in order to insure profitable interest on the investment. A plant costing \$2,000 will supply water for about 120 acres of land. The levees are placed at about every six inches fall in the land, and if the land is comparatively level, one levee surrounding the entire farm will be all that is required.

The land is prepared in much the same manner as for any other of the spring sown cereals, and the seed sown on or about the middle to the last of May. By the 10th of June the crop will be about one to two inches high, and the pumping the water must commence. It is necessary to keep the land wholly under water from the time the rice is one and one-half inches high until about a week or ten days before harvest, that is about the 10th to the 15th of September. No further work is required except to keep the pumping plant going continually during this

period; running the engine about ten hours per day. If this flooding is neglected the grass will start very readily, and soon choke out the young rice plants.

The rice is harvested with the ordinary binder and threshed in the ordinary way, after having been allowed about two weeks in which to dry. It is then sent direct to mills where it is prepared as we see it on the market to-day.

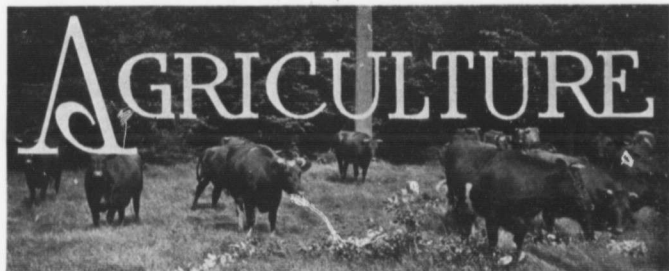
The profits in rice growing as compared with the growing of other crops are much higher. On one farm in Lenoir County, the conditions and expense of operation of which the writer is thoroughly conversant, the net profits this year have exceeded twenty-five dollars per acre. The growth of an industry can generally be taken as an indication of its popularity, and the growth of this industry in this State certainly speaks volumes for its popu-

larity. Four years ago no rice at all was grown in Arkansas. This year fully six per cent. of the crop produced in the United States will be produced in this State. The division is about as follows:

Louisiana and Texas produce about 87 per cent. of the crop; South Carolina about 4; Georgia 3 and Arkansas 6. The industry is bound to grow as the profits that are to be realized become better known. The demand for the finished product is on the increase, not only as a food, but also as an essential in every wedding ceremony. Therefore, we can conclude that so long as people continue to eat, and also participate in marriage ceremonies, just so long will the rice growing industry remain popular, on account of the immense profits realized, and the minimum amount of labor required in the general farming operations.



RICE THRESHING.



The Attributes of a Saddle Horse.

BY F. C. GRENSIDE, V.S.



SELECT SADDLE HORSES.

THE object of the study of the external conformation of the horse is to enable us to determine the merits of an individual for the purpose for which he is required. The desirable conformation differs in a measure in different classes of horses, but there are certain points which any good horse should possess in order to be up to a reasonably high standard of excellence.

For instance every good horse must show evidence of the possession of sufficient chest capacity and well developed digestive organs, in order to have stamina and ability to maintain good condition, and perform a desirable amount of work.

Valuable as a correct knowledge of conformation is in affording indications of a horse's capabilities and wearing ability, we may form very erroneous

ous conclusions, until we have determined, largely by experience, the character of his nervous organization. We may get a horse so perfect in conformation as to fill the eye of the connoisseur, and still he may be comparatively worthless when it comes to perform

ance. On the other hand, we may get a specimen of horseflesh, with well marked defects of conformation that is a brilliant performer, which excellence is almost entirely due to his nervous organization, so that we must not over estimate the indications of conformation, valuable as they are, and we must be particularly careful not to under estimate the value of an animal's nervous organization, in influencing his attractiveness and ability to do things.

We hear and think so much of conformation that we are apt to forget what an important role the nervous system plays in contributing to qualities that make horses valuable. It is well for us to endeavor to realize how much influence the nervous organization has in contributing to speed, action, light stepping, style, carriage, power, courage and stamina. When this vitalizing, power-giving, controlling element of nerve force is adequately supplied to a horse's physical mechanism, constructed so as to prevent friction, to conserve energy, and promote mechanical advantage in movement and balance, then we have an individual bordering on perfection, providing he has sufficient and good quality of material in his various component parts, to confer wearing ability.

In studying a horse's conformation, and in endeavoring to form an opinion as to his power, stamina and wearing

ability, we observe his *tout ensemble* before going into details as to his points. Other things being equal the long, low deep horse, has the most power, stamina and constitutional vigor, and can to the greatest degree economize force and stand wear and tear.

Judging from the character of the horses we frequently see used for riding purposes in New York State, we might be led to form the conclusion that there are no essential differences between a harness horse and a saddle horse. Certainly one can ride any sort of a horse, even a draught horse, and one can drive any kind of a horse, even a race horse, but it does not follow that they are the best for these respective purposes.

Individual tastes differ very much as to the qualifications demanded in a horse for riding purposes. Some equestrians (and their number seems somewhat on the increase), care practically nothing for any gait but the trot, as long as a horse can shuffle along in some sort of a way in the walk, that gait will pass, providing he can trot fast. Others do not care so much for speed in the trot, but want that gait performed with decision and force which means a pretty fair amount of action at both ends. To the latter the canter is of secondary importance, though they may attach some to the walking gait. There are others that consider the trot of minor importance and particularly demand a good smooth canter and a good walk.

The majority of riders of experience that have given the subject much thought desire to have all three gaits as good as possible. Change of gait in riding is conducive to the comfort of the rider, and the variety gives ad

ditional enjoyment to a ride. The horse as well as the rider derives relief from a change of gait.

If a vote were taken among riding men (those that ride in the park and on the road), as to the values to be assigned to the three gaits, on a scale of one hundred points, the majority would be in favor of giving at least forty to the trot with thirty each to the walk and canter.

The trot is the gait at which the rider gets most exercise, and covers ground well at the same time. It is usually less tiring to a horse than the canter, and less injurious to the forefeet and legs, particularly, if the ground is hard.

Assuming that the walk, trot and canter are the desirable gaits for a saddle horse, let us endeavor to determine the attributes essential to the proper execution of these as well as the other attributes necessary in making up a good saddle horse. One of the greatest delights in a riding horse is elasticity of movement which confers easy paces. This is in a large measure due to the high nervous organization of the easy mover.

There cannot be any question but what the Thoroughbred possesses this in its very highest state of perfection. The question then would be naturally asked why is he not the most perfect saddle horse. Some people think he is, and don't want to ride anything else, and many men with this taste are very good riders. The average rider, however, will not say so, for he demands level headedness, reliability and good manners, and is willing to con-

cede some loss of elasticity of movement for greater tractability.

Great perfection in an attribute is apt to be associated with serious defects so that we find many Thoroughbreds excitable and high strung, and some of them obstinate and intractable. They have as a rule sensitive



A HIGH CLASS MOUNT.

mouths, and are apt to be fussy with them, are very quick in their movements and unless a rider has got a strong seat and good hands, he is apt to experience a sense of insecurity on their backs. Many of them carry low heads, have little action or speed at the trot, and are inclined to stumble. Still with all these tendencies to defects he is the horse to aim at, for he undoubtedly gives two things without which no saddle horse can be considered very high class, viz.: elasticity of movement and quality.

Quality appeals even to the casual observer by its attractiveness, but with twofold force to the horseman, as he knows that it also means toughness,

ability to stand "wear and tear," and wiriness.

Occasionally, we find a Thorough bred, however, with fair speed at the trot, sufficient action, well carried head, tractability and sure-footedness, then we have a gem; but usually in order to get these latter qualities some other blood that has been tempered with cold blood has to be infused.

The saddle horse, in order to be well balanced, should have his head up, nose in, neck arched, and his legs well under him. His head should be of moderate size, clean-cut, with well carried ears, or in other words, show quality. It is particularly important that he should be able to bend his neck at the anterior part, otherwise he can not flex his head upon it, be well balanced, and have a steady responsive mouth. A horse may have the un slightly ewe or bulging neck at its inferior part, but still have good carriage, providing its anterior part is well formed.

Length of neck adds very much to the attractiveness of a horse and contributes largely to the long rein the horseman prizes so much. It also gives flexibility, and is apt to be associated with a responsive mouth.

The neck should show muscularity, but be clean-cut with an absence of beefiness. The withers and shoulders are points of very considerable importance and perhaps constitute the most essential features in differentiating the conformation of a saddle, and a harness horse.

It is no reflection upon a harness horse to say he has riding shoulders, but it is an aspersion upon a riding horse to say he has harness shoulders. The makeup of the withers and shoulders so modify each other's form, that

it is difficult to study them separately. It is of importance in a saddle horse to have the withers of moderate prominence and clean cut, for if they are flat, round or beefy, it is a difficult matter to keep the saddle in position. With a man it is not easy to keep the saddle from rolling on round withers, and it is almost impossible with a lady. Such withers necessitate tight girthing, making it very uncomfortable for the horse and inducing fatigue, while girth sores and seriously bruised withers are apt to result. The withers, however, can be too high, and if sparsely covered with muscles as they usually are, are also liable to bruising. Thin, high withers are usually indicative of delicacy of constitution and defective muscular development.

Some low withered horses have easy paces, but the majority of round, beefy withered ones, lack the smooth, easy play of the shoulders upon the chest, and are apt to roll.

In considering the withers with relation to the highest point of the croup, they should be at least as high, otherwise the saddle and weight of the rider gravitates forward throwing too much weight upon the anterior extremities. This is accentuated in horses with a dip just behind the shoulders.

The shoulders should have a pretty fair amount of length and obliquity in order to give range of movement, and to promote a reasonable length of stride. Length and obliquity of the shoulders also have a very important effect in dispersing concussion, and consequently in enabling the forelegs to stand wear and tear. Straight shouldered horses, in doing saddle work, are very apt to become unsound in the fore extremities. Fully eight

tenths of the lameness occurring in saddle horses is in the forelegs.

Great length and obliquity of the shoulders, however, are apt to result in a lack of action, and a fair amount of action of the right sort adds to the attractiveness and usually the sure footedness of a horse.

For reasons already given, it is particularly important that the forelegs of a horse should show evidence of strength, and wearing ability, and be well poised. The back is very frequently referred to as of first importance in a riding horse, and shortness of this point emphasized as being particularly desirable. It no doubt in

creases the mechanical strength of a horse's back, particularly if associated with well sprung ribs and muscularity, but in order to contribute to elasticity of movement, moderate length is necessary. The short backed horse must have long fore and hindquarters, otherwise, he is a poor specimen either to ride or look at.

The roach back horse is usually a rough-gaited one while the slack loined one lacks strength. The free and easy flexion of the stifles and hocks in the trot adds much to the comfort of the rider, particularly in a woman's mount.

The French Canadian Cattle.

BY J. A. COUTURE, SECRETARY FRENCH-CANADIAN CATTLE BREEDERS' ASSOCIATION.

The breed of French Canadian cattle, whose existence was not even suspected outside of the Province of Quebec previous to 1900, not only is the most ancient of North America, but is also the only one which was founded, developed and kept in all its purity for nearly three centuries on this continent.

History.

The French Canadian cattle are descended from those sent out from France in the early days of the colony. Some were sent by the king, Louis XIV., who had instructed his Minister, Colbert, who was very eager to see the colony flourish, to send here only the best animals of his kingdom. Some others were brought out by the early

settlers themselves, who came principally from the Provinces of Brittany and Normandy, which are separated by but a narrow channel from the Islands of Jersey and Guernsey, which are only a short distance from Ireland.

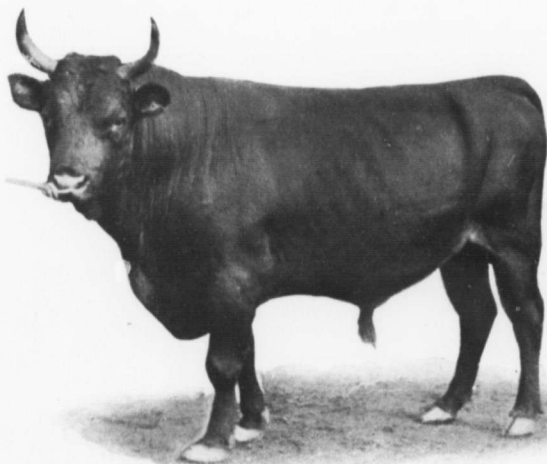
We read in the memoirs of Mr. de Tracy, Intendant, and Mr. de Courcelles, Governor, who brought out some cattle with them in 1665, that there were already some of those animals in the country and that they were mostly all fawn or black in color.

The French Canadian cattle are issued from the same strain as the Jerseys, the Guernseys and the Kerries. This fact is most evident by their resemblance to one or the other of these breeds in certain points. For

instance, the color is now that of the Jersey, then that of the Guernsey and then that of the Kerry. For richness of milk, delicacy of shape and gentleness of temperament they take after the Jersey; they have the frugality of the Kerry, the large body and the abundant lactation of the Guernsey. It goes without saying that the residence

In 1850, with the exception of a few herds of Ayrshires in the neighborhood of the towns and in the Eastern Townships, all the cattle of the Province of Quebec were of the pure Canadian breed.

In 1853 the Board of Agriculture came into existence. It meant well, but knew little. From the very first



FRENCH-CANADIAN BULL, PRINCE ELEGANT—56.
Property of M. Arsene Denis, Ste. Norbert Station, Que.

of these four breeds in their respective countries for several centuries has developed in each of them, certain distinguishing characteristics which makes them excel in those countries, for which they are peculiarly adapted. Nevertheless, even now the resemblance is so close that many a light colored, pure bred Canadian cow can almost pass as a dark Jersey.

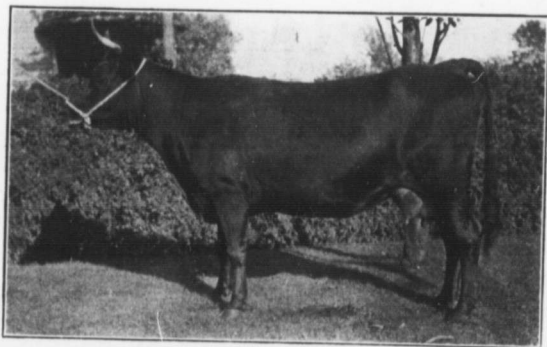
year of its existence up to 1880, it made every effort to substitute the Ayrshire and other foreign breeds for the Canadian. The Board having had its own way during those thirty years succeeded, to a certain extent, in its work of substitution, not to say of destruction. Its success was also complete in persuading the people that the French Canadian cattle, those worthless

animals, had fortunately been wiped out of the country. Officialdom, with the exception of two men, believed it all and behaved accordingly. Farmers knew better as to the existence of the breed, but they got to believe that it was no good, they neglected it more, if that were possible, and they longed for the day when they could afford to replace it by another.

In 1881, Mr. E. A. Barnard, Director

intelligent farmers were induced to go in for that breed, and herds were sent out to the great exhibitions.

In 1895 the French Canadian Cattle Breeders' Association was organized. In 1900 the French Canadian cows took part in the competition for the milking breeds at Buffalo, and proved that they can give the best returns for the food consumed. About that time the Ottawa Experimental Farm



FRENCH-CANADIAN COW GYPSY

Property of Macdonald College, Ste Anne, Que.

of Agriculture for the Province, Mr. S. LeSage, Deputy Minister of Agriculture, and myself, undertook, with the help of a few unprejudiced people, to rehabilitate the French Canadian cattle. To begin with, we ascertained by visiting the whole Province that at least 75 per cent. of the cattle were quite free from foreign blood. Then, we prevailed on the Government to open Record Books (1886), Competitions for the production of milk and butter were organized, lectures were given on the subject; some of the most

bought a herd of Canadians. The reader will see below how satisfactory they have proved to be.

The achievements of the French Canadian cattle at Buffalo attracted the attention of a number of far-seeing American breeders, among others Mr. Boldt, proprietor of the Waldorf-Astoria Hotel of New York, who bought a herd for his farm at Britannia. Herds were sent out to the States of New York, Pennsylvania, Massachusetts and Missouri; later on some were sent to Manitoba, Nova Scotia,

Prince Edward Island and Japan. No body claims now that the Canadian breed of cattle have disappeared.

Though there are numerous herds of these cattle which are registered, there is a still greater number which are not registered, but are equally as good, although the color is not that approved for registration.

Description.

The usual weight of an adult French Canadian cow is from 700 to 900 lbs. The mature sire usually attains a weight of about 1,400 lbs. In color they may be either black, brown or fawn, but the approved color for registration is dark brown with an orange or fawn colored strip down the back and around the muzzle. When the calves are dropped they are a solid red color and they are nearly a year old before their distinctive markings are developed. French Canadian cattle are attractive with their active and business-like dairy appearance, and remarkably docile and tranquil manners.

Hardiness and Thriftiness.

Endowed with the robust health of the northern breeds, acclimatized by three centuries of residence in this country, incomparably thrifty, no other breed of cattle possesses so many qualities, gives better returns for the care it receives and is more profitable for the generality of farmers than the French Canadian breed of cattle.

Here I might be allowed to make a couple of quotations.

"The long, cold winters of Quebec and the exposure to which these cattle (French Canadian) have been subjected, have begotten in them a hardihood that is simply unrivalled in dairy cat-

tle."—Professor Thos. Shaw, in "The Study of Breeds."

"The vigorous Quebec climate and the natural (without special care) conditions under which these cattle have been bred for centuries have developed in them an unusual hardiness and adaptability to almost any environment. * * * Their capacity for manufacturing the roughage of the farm, such as straw, is simply wonderful."—James R. Ostler, manager of Sir Wm. Van Horne's farm, St. Andrews, N. B., in the "Maritime Farmer Co-operative Dairyman," of 5th May, 1908).

Persistency in Milking.

"The French Canadian cows are noted for their persistency in milking; many of them giving milk almost the whole year round. The Buffalo test showed that they were almost as profitable at the end of the six months strain as at the beginning. It is believed that had the test lasted for one year instead of for six months only, the Canadians, with their marked staying powers, would have shown their superiority in an even more decided manner."

Richness of Milk.

"The Canadian cows give milk that is rich in quality. Very few of them give milk that will test below 4% of butter fat as an average for the whole year, while in individual cases it runs up to 6.5 or even 7%.

Profitableness.

The great profitableness of the French Canadian cows will be better demonstrated by quoting the official reports of the Ottawa Experimental Farm and of the six months test of the breeds of dairy cattle at the Buffalo Pan-American Exhibition.

Table showing the yield and profits derived from the various herds of pure bred dairy cattle at the Ottawa Experimental Farm during the year 1904. Each herd included the three best cows of the breed:

BREEDS	No. of cows	Days in Milk	YIELD OF MILK			Butter total quantity	Value at 20 cts per lb		Skim milk at 15 cts per 100 lbs	Total value of pr'd'cts		Cost per lb of butter	Profit per lb of butter	Total profit per cow
			Per day	During the year	Fat in milk		Lb	\$		e\$	e\$			
French Canadian			Lb.	Lb.	P. C.	Lb	\$	e\$	e\$	e	e	e	\$	e
Fortune d'Oka	335	26.	8734	4.66	468.60	93.72	10.89	104.61	9.7	10.3	59.26			
Zamora	327	23.5	7658	4.51	442.43	88.48	10.67	99.75	9.3	10.7	57.67			
Esilee	334	25.8	8628	4.10	416.90	83.38	12.31	95.69	10.5	9.5	51.79			
Average for FRENCH CANADIAN COWS	3	332	25.1	8340	4.52	442.64	88.52	11.29	99.81	9.8	10.1	56.24		
Average for other breeds														
Shortborns	3	295	16.39	5335	4.10	258.33	51.66	7.66	59.32	14.7	5.2	21.82		
Ayrshires	3	299	29.3	8784	3.86	398.72	79.74	12.47	92.21	10.7	9.2	49.51		
Guernseys	3	359	21.4	6899	4.84	390.76	78.14	9.74	87.89	10.4	9.5	47.15		

The above table shows: (a) that the French Canadian cows gave the largest quantity of butter during the year; (b) that their butter cost the least; (c) that they yielded the most profit per pound of butter and the highest net profit during the year; (d) that they gave only 400 lbs. of milk less than the Ayrshires for the year; (e) that their milk is nearly as rich as that of the Guernsey, the difference being only .32 per cent. The above table gives the average yield and profit for each breed, consequently it applies to only one cow of each breed. It shows that, during the year, the French Canadian cow

\$34.42 more net profit than the Short horn.

\$9.09 more net profit than the Guernsey.

\$6.73 more net profit than the Ayrshire.

The results obtained at the Experimental Farm, as well as at Buffalo, clearly demonstrate two facts to which it is necessary to call public attention, namely:

1. Competitions of a day or a week or a month are rather calculated to mislead the public than to give it accurate information regarding the real comparative value of the competing cows. 2. The wisdom displayed by the Hon. Mr. Fisher, Minister of Agriculture of the Dominion, in instituting a competition of 365 consecutive days for pure bred milk cows.

The Canadian Cows at the Buffalo Test.

Regarding the great six months test of the dairy breeds of cattle I could not do any better than to quote Mr. T. B. Macaulay, Secretary of the Sun Life Insurance Company, and Vice-President of the French Canadian Cattle

Breeders' Association. Says Mr. Ma caulay:

"At the great six months test at the Pan-American Exhibition, Buffalo, each of ten competing breeds was represented by five of its best cows. The results showed that the French Canadian cattle gave more profit, in form of churned butter, for each dollar's worth of food eaten than any other race. It is believed, moreover, that if the food supplied had been limited to such kinds only as are fed on the average farm, their superiority over all others would have been still more marked.

"Every farmer has a certain quantity of food (whether it be pasture or hay) which his farm produces, and he very properly desires to know which breed will give him the greatest amount of profit in return for that food.

"Owing to their hardiness and ability to thrive on but ordinary fare, a farmer can keep more Canadian cattle than of other breeds. The results of the Buffalo test were:

Breed	Value of food eaten.	Number of Cows which could be kept on food required by 100 Holsteins.
Canadians....	\$113 10	146
Dutch Belted..	132 32	124
Guernseys....	136 99	120
Jerseys.....	137 78	120
Red Polls.....	138 03	119
Ayrshires....	140 98	117
Brown Swiss..	147 26	112
Shorthorns....	162 12	102
Holsteins....	164 69	100

"It surely is of the utmost importance to a farmer to know that he can keep possibly three cows of this breed for every two of other breeds. We do not deny that some large cows of other breeds at the Buffalo exhibition gave more profit per cow than the

smaller French Canadians. That, however, is a matter of little importance to a farmer. He cares nothing whether his hay be eaten by two or by three cows. What he desires to know is how large a herd he can keep of each breed, and which of these herds will pay him best."

Here, it may not be out of place to quote the Hon. Mr. S. Fisher, Minister of Agriculture for the Dominion, speaking before the National Live Stock Convention, at Ottawa, on February 5th, 1908. Said Mr. Fisher, "The Ayrshire, the Holstein, the Jersey, and the Guernsey are all good cattle, and each may prove to be the most profitable under certain conditions. I am myself a breeder of Guernseys with which I am well pleased. But I must say that the French Canadian cow is the best paying butter producing machine which stands on four legs to-day."

The Records.

The *Foundation Stock Book* was opened in 1886; wherein were recorded, for ten years, animals of acknowledged pure blood and superior dairy qualities. Since 1896 none have been, or can be, entered except the descendants of the *Foundation Stock* already recorded. The whole number of animals now on record is about 8,500. The Records were nationalized in 1905, and the registration of animals is now under the supervision of the Department of Agriculture of the Dominion. The first volume of the Records is expected to be published in the course of the next three months.

Prominent Breeders.

The foremost breeders of French Canadian Cattle are the officers of the Breeders' Association, viz:

Messrs. Arsene Denis, St. Norbert

Station, Que., president; T. B. Macaulay, Hudson Heights, Que., vice-president; directors, Louis Thouin, Repentigny, Que.; Ls. P. Sylvestre, St. Theodore d'Acton; G. Garceau, Pointe-du-Lac, Hon. N. Garneau, Quebec City; Jos. Dugas, St. Jacques, Montcalm. Other breeders are, Ottawa Experimental Farm, Sir Wm. Van Horne, at his farm of St. Andrews, N. B.; Hon. Sidney Fisher, Minister of Agriculture, and the Macdonald College, Ste Anne de Bellevue.

Recently some wealthy people seem to have become interested in the breed. Thus, Sir Hugh A. Allan and the Hon. Lionel Guest are getting up herds; the manager of one of the biggest banks of Montreal, and a gentleman very high in the political world, have been persuaded to go in for these cattle; and, we expect to see before long, a herd of French Canadian Cattle at the Ontario Agricultural College.

I may say that there exists in the

United States a Society of French Canadian Cattle Breeders that has opened a Record. The president is Mr. C. E. Colburn, Portlandville, N. Y.

Conclusion.

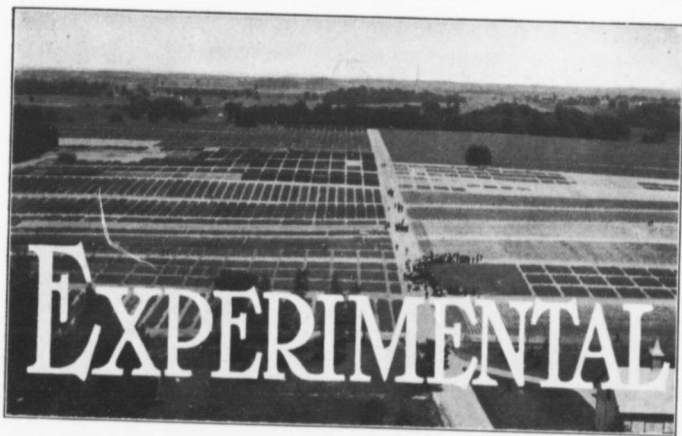
The conclusion may be that of Mr. Macaulay's booklet: "Canadians do not need to import from abroad expensive animals to improve their dairy stock, for they have in the Dominion itself a race that is entitled to the very front rank, and which has before it a great future. Combining, as this breed does, unequalled hardiness, ability to pick up a living on rugged pastures, and to thrive on ordinary food, docility, beauty, marked profitableness, abundance and richness of milk, persistency in milking, and thriftiness which permits a greater number of heads to be kept, it is evidently the stock *par excellence* which Canadian dairymen should use to improve their herds.

MOONLIGHT.

So tremulous the flame of thinking burns
 Beneath mine eyelids, that I may not keep
 My restless couch; I watch the still moon sweep
 Through starry space, like some white soul that spurns
 Earth-life, and to the sunlight ever turns;
 In her cool beams my burning eyes I steep—
 Oh, that my spirit thus may rest in sleep
 When my pale ashes Mother Earth inurns!

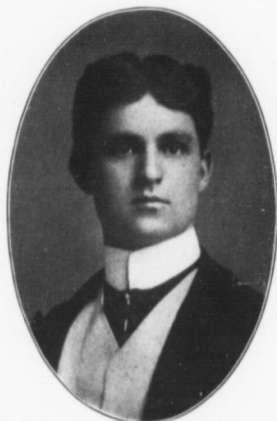
And as the moonlight quietly unrest,
 Changing thought's scorching glow to truth's pure light,
 So Thou, who art my heart's most holy guest,
 Dost make its ruddy flame glow spirit white;
 And like pure-hearted child, 'mid happy dreams,
 I rest my heart and soul in Thy love-beams.

—Wm. P. McKenzie.



Technique of Plant Hybridization

BY C. D. JARVIS.



C. D. JARVIS.

THE remarkable progress of recent years, in the experimental study of evolution, variation and heredity has awakened greater interest in the improvement of cultivated crops

by breeding. Only during the past five or six years have plant-breeders recognized any uniformity or constancy of action in hybridization. Formerly they considered it largely a game of chance, and they were too much interested in the game to take the trouble of recording methods or tabulating results. In 1865 Gregor Johann Mendel, an Austrian priest, published in an obscure journal a paper on "Experiments in Plant Hybridization." In this paper the author reports the results of ten years' experiments and proposes a law with regard to hybrids. This valuable contribution to science was lost sight of for almost a generation, or until the year 1900, when three independent workers almost simultaneously rediscovered and confirmed what has now come to be known as *Mendel's Law of Hybrids*.

Purpose of Hybridization.

The discovery of Mendel's Law has

greatly changed our attitude toward hybridization. Formerly it was supposed that the crossing of two organisms produced new characters in the offspring. It is now believed, in the light of these later discoveries, that organisms are composed of many characters which are inherited as units, and that the process of hybridization simply rearranges these units, or forms new combinations of units. Just as the unit elements in chemistry can be



1. A *Narcissus* flower cluster. The two lower buds are in condition to be emasculated.

combined and recombined into different compounds, so can the unit characters of plants and animals be combined and recombined by hybridization.

The object of hybridization then, is simply to shuffle and rearrange these unit characters into the most desirable combination. The plant-breeder may select desirable fluctuations of a unit character, but he must look to nature to first produce the unit character.

Limits of Hybridization.

There appears to be no definite rule

with regard to the limits of crossing plants, but in general it may be said that the closer the botanical relations of two plants the more easily will they cross. Close relationship between two plants does not necessarily mean that they have similar unit characters, for plants very much alike,—the pumpkin and squash, for example,—have refused to cross. The nearest relative of any given species is probably that from which it has taken its origin. This origin is assumed to have taken place "by steps" or "leaps" and not by a slow process of gradual modification as was believed by early writers and even by some of the present day writers.

Crosses between individuals of the same variety, and between varieties of the same Linnean species, are generally very easily made; those between Linnean species are occasionally made and those between genera and families are very rarely made. The refusal of certain plants to cross may be attributed to several causes, the most common of which is the inability of the pollen tube to enter the ovule or, in other words, the refusal of a plant to allow its ovules to be impregnated by the pollen of another plant.

A few of our agricultural crops have been carefully studied and special methods of hybridizing have been proposed. As the practice of plant breeding increases other crops will undoubtedly be similarly treated. It is not the purpose of the present paper to discuss these special methods, but rather to give in a general way the important principles and facts to be observed in the crossing of plants.

Flowers and Their Parts.

To avoid confusion, a brief review of some of the terms and expressions used in the following discussion may be of

service. Flowers are usually composed of four distinct sets of organs,—the calyx, the corolla, the stamens, and the pistils. A flower possessing all four sets is said to be *complete*. The outer whorl or leaf-like set, the *calyx*, and the second whorl or showy set, the *corolla*, go to make up what is known as the *floral envelope*. This envelope protects the two inner sets or *essential* organs, the *stamens* and the *pistils*. These are the so-called sexual organs and are the ones with which the plant breeder is most concerned. The stamens are composed of two parts,—the stalk or *filament* and the enlarged terminal part or *anther*. The anther contains the *pollen*, which is usually very abundant and of a yellowish or brownish color. The pollen grains are the so-called *male productive cells*. Each of these minute pollen grains contains at least one *nucleus* or essential part of the re-productive cell. The pistil, whether simple or compound, is composed of three parts. The upper end, the *stigma*, is usually rough or sticky in order to hold any pollen with which it comes in contact. The application of pollen to the stigma, whether done naturally by insects, wind or water, or artificially by man, is *pollination*.

The pollen grains, when they come in contact with the moist stigma, start to grow or elongate. This elongation is called the *pollen tube*. It makes its way down through the slender part of the pistil, the *style*, to the *ovary*, or that part of the pistil which contains the *ovules*, or so-called *female egg-cells*. The nucleus of the male *egg-cell* passes down through the pollen tube and unites with the nucleus of the female egg-cell. This union of the male and female nuclei is *fertilization*. If fertilization occurs between the male and

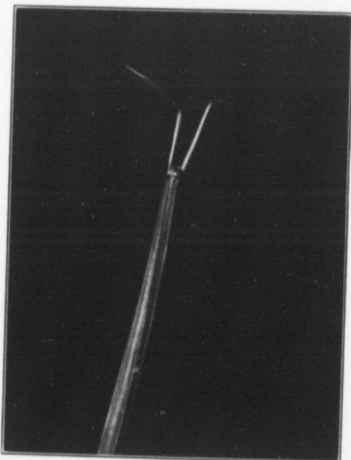
female egg-cells of the same flower, or even of different flowers of the same plant, it is called *self-fertilization*. Union between plants of the same "pure line," or strain, that is, sister or cousin plants, gives different degrees of *close-fertilization*. Union between plants of different "pure lines," or strains, whether of the same or differ-



II. EMASCULATING A FLOWER.

ent varieties, or of the same or different species, is *cross-fertilization*. Cross-fertilization is the rule with many plants, and is effected naturally by insects, wind, and occasionally by water. Wind-pollinated flowers are said to be *anemophilous*, while those pollinated by insects are said to be *entomophilous*. Anemophilous flowers are usually in

conspicuous, and are abundantly supplied with pollen. Many of our deciduous trees have flowers of this type. Entomophilous flowers are distinguished by their showy colors, by which insects are attracted. To this class belong most of our ornamental flowers, and those of fruit trees and vegetable plants. Many of such flowers have irregularly shaped corollas, which are so adapted that insects visiting them



III. The same flower cluster as shown in I, after the two lower buds have been emasculated and the other flowers removed. The emasculated flowers are now ready to be pollinated.

for nectar are almost certain to pollinate them with pollen from other flowers. The hand pollination of such flowers is difficult because of the care necessary to prevent injury to the essential organs.

Besides the use of structural peculiarities in flowers there are other means of insuring cross-fertilization among plants. The stamens and pistils of some flowers mature at different times.

Such flowers are said to be *dichogamous*. When the stamens mature first, the flower is *protandrous*; when the pistils mature first the flower is *protogynous*. Many flowers lack either stamens or pistils when they are said to be *imperfect* or *dichinous*, as opposed to *perfect* or *hermaphrodite* flowers. A flower having stamens only is *staminate*, and one having pistils only is *pistillate*. When both staminate and pistillate flowers are borne on the same plant, as with squashes, corn and chestnuts, the plant is *monoecious*. When both kinds are borne on separate plants, the willows for example, the plant is *dioecious*.

Manipulating the Flowers.

It is evident from what has been said that a careful study of the natural habits of a plant is necessary for successful hand pollinating. It must be known whether a plant is monoecious or dioecious; whether it has perfect or imperfect staminate or pistillate flowers; whether the pistils and stamens mature at the same or at different times; whether early, medium or late flowers are the best seed producers; and all the other peculiarities of the plant in question must be studied.

Before proceeding with the subject of manipulation it seems advisable to emphasize some of the peculiarities of the pollen. Each kind of plant has pollen of a characteristic shape. Fresh healthy pollen under a microscope appears plump and regular in shape. It is generally ready for use when nature releases it from the anthers. With some plants the first flowers that open produce very little pollen, and this is frequently unreliable.

In general, it may be safe to say that pollen taken from either the earliest or the latest flowers is likely to be less

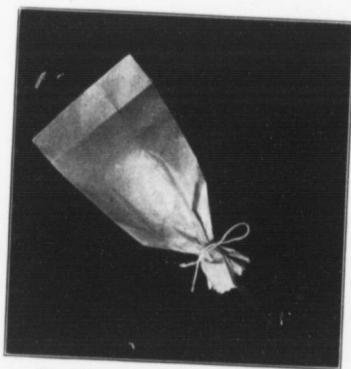
viable than that taken from mid-season flowers. It often happens that the stigma of the plant used as the seed parent is not ready for some time after pollen has been obtained, and it becomes necessary to preserve the latter. This is often accomplished by a slow drying process after which the pollen is placed in a tightly-corked glass vial. The time that pollen may be preserved in this way varies greatly according to the species of plant from which it has been taken, and according to the condition of the atmosphere. The pollen from some plants has been found to be viable after being kept a year, while from others it has been useless after forty-eight hours. As a general rule the stigma is mature or *receptive* within forty-eight hours after the flower has fully opened. When receptive the stigma of most flowers becomes moist or sticky and when examined with a hand lens small beads of a gummy exudation will be revealed. With other flowers the surface presents a roughened or papillose appearance. With still others the receptive period is only determined by experiment. The application of the pollen at the proper time is of greater importance than is generally believed. Experiments conducted in the plant-breeding laboratory of the United States Department of Agriculture has clearly shown that premature pollination is injurious in case of tobacco, orange, cotton and tomato.

Emasculation.

The process of emasculating a flower consists in the removal of the anthers to prevent self-pollination. With large regular shaped flowers this is a simple operation, but with small flowers with intricate parts, the operation becomes very difficult and requires the most careful manipulation. The operation is

performed before the anthers reach maturity, and to avoid pollination by wind or insects before the flower has opened.

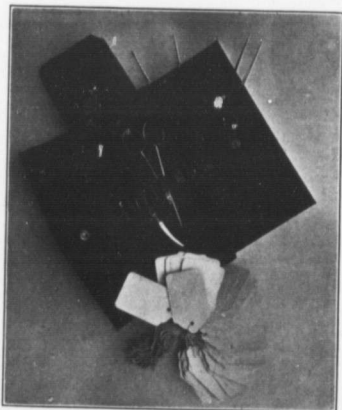
It is customary, however, to delay emasculation till just before the flower opens, unless, of course, the anthers should become too far advanced. It is usually necessary to remove part of the corolla, and if the anthers are attached to its throat, the corolla and anthers are removed together. With large flowers a small pair of sharp-pointed scissors may be more convenient, but with most flowers the use of a pair of



IV. The pollinated flowers protected from foreign pollen by the use of a common paper sack.

very fine tweezers is usually recommended. When flowers are borne in clusters all but three or four are removed and the remaining ones similarly treated. With pistillate flowers it is only necessary to guard against foreign pollen. The emasculated flower and the staminate flower, so far as treatment is concerned, are considered alike. In either case the flower is protected from foreign pollen until its pistil becomes receptive. This is usually accomplished by the use of

small paper sacks ordinarily used by grocers. The mouth of the sack is moistened so that it may be closely tied to the stem of the emasculated flower. A small numbered label is then attached and the date of emasculation recorded in a note-book opposite the number.



V. A PLANT-BREEDERS' KIT.

Pollination.

The stigma of the flowers are examined from time to time and pollen applied as soon as they become receptive. Some flowers which develop rapidly may best be pollinated at the time of emasculation. The pollen is usually collected in a watch glass and applied with a small camel's hair brush. Some times the flower to be used as the male

parent is detached and simply brought in contact with the stigma of the emasculated flower. Where absolute certainty is required the flower to be used as the male parent is also "bagged" before maturity to avoid the possibility of contamination by foreign pollen. After pollination the flower is immediately "rebagged," and a second notation made in the note-book. After fertilization has taken place and the fruit started to develop the paper sack is usually replaced by a cheese-cloth sack which serves the purpose of retaining the fruit should it be dropped, and at the same time admits light and air. The flowers of some plants, like the cucumber and grape, sometimes set fruit without fertilization having occurred. Such fruit, however, is seedless. Seedless cucumbers, which have been grown under glass where natural pollination is eliminated, are commonly found in the market.

In conclusion it may be said that success from artificial crossing comes only from a careful study of the natural habits of the plants to be operated with and from close attention to the difficulties attending the work. At one time it was thought that if one hand pollinated flower out of ten produced seed it was a great accomplishment, but with ordinary plants and with the care that should accompany such work a much greater proportion, say eighty per cent. may be expected.

Horticulture

Some Fruits from Florida

By H. H. HUME, VICE-PRESIDENT AND SECRETARY, GLEN SAINT MARY NURSERIES, FLORIDA.

The following is the balance of the article published in our December number.—Ed.

Pecans.

It is a significant fact that our gaze is fixed on far-away things, and we are prone to forget the near at-hand, important and worthy of attention though they may be. So it has been for many years with the Pecan. Growing as a native tree in the Mississippi valley, its merits as an orchard tree were not brought prominently to notice until very recently, and it almost appears now that the pendulum has swung too far in the opposite direction. But the fact remains, vouched for by many different authorities that there is no nut quite so good as a high-grade Pecan. They are very rich in oil, the analysis showing about 70 per cent. fat, and it isn't a good plan for the youngster to eat too many of them on Christmas day.

The nuts grow in burrs or husks, green during the growing stage, but turning black and splitting open at maturity. The brown nuts are then exposed and are ready for harvesting. Some people think it must be a sort of picnic to harvest the crop, but if they undertook the work they would find their picnic turned into a task of no mean size. The lame and the lazy may wait for the nuts to fall naturally, which they will do if you wait long enough. But the wait is long and the loss is considerable. But the wise man hand picks the trees, stripping them

at a single picking, shucks the nuts, cures them in the sun and stores them. The active season in the nut market is between Thanksgiving and Christmas and by the first of the year the bulk of the stock is cleared up. A very large portion of the general nut crop is taken by factories in which the kernels are extracted by machinery, and the meats are then placed on the market. This is much more convenient for the housewife and confectioners, but alas, it does away with the good old-fashioned enjoyment of sitting beside a blazing wood fire with a pan of nuts and doing your own cracking for the Christmas confections. The growers who supply the Christmas trade direct, market their product in small boxes, neatly packed and ready to ship. Their product looks quite different from that which you see in the open market, as the latter is always painted and polished, to such an extent as to lose its identity.

In common with most fruits, pecan orcharding began with the planting of seedling trees. These proved so unreliable that they have now been superseded by budded and grafted trees of standard varieties. Among those most favorably known at this time are Stuart, Van Deman, Frotscher, Schley, Teche, Delmas and Curtis.

The trees are commonly set 40 to 50 feet apart—an acre of ground doesn't

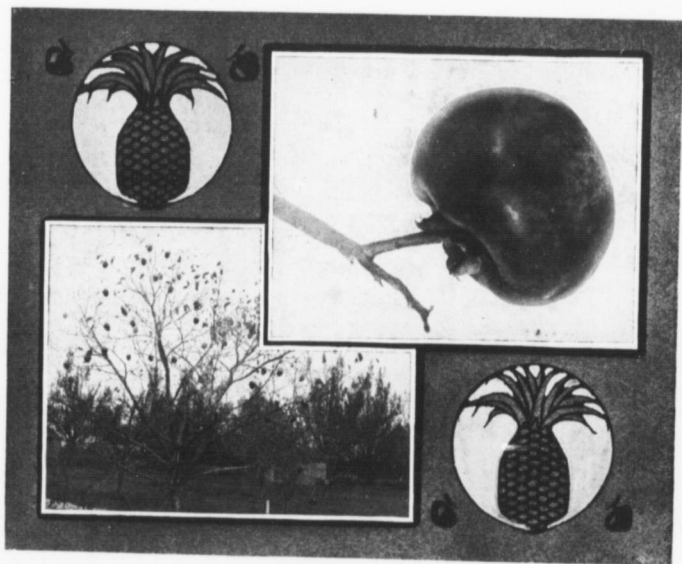
seem to have much on it when the trees are young; they are cared for and cultivated much as other fruits are. Most of the pecan orchards are in northern and western Florida.

Japan Persimmons.

We are indebted to Japan for a number of very excellent fruits, but none more noteworthy than the Japan per

a rounded or flattened top of about the same spread. Some varieties, however, are quite strict and upright in habit of growth.

In shape, size, color and texture the fruit is quite variable. The fruit of some of the larger varieties like Hachiya, Tane-Nashi, and Yemon will weigh fourteen to sixteen ounces, while others like Zengi or Taber's 129, will



JAPAN PERSIMMONS.

simmon. They have given to it more attention perhaps than to any other fruit, and it occupies in their fruit economy much the same place that the apple does with us.

The trees are of rather dwarf growth. As I am writing this I can look out of the window at a Hachiya persimmon tree now fourteen years old, that is not more than fifteen feet high, with

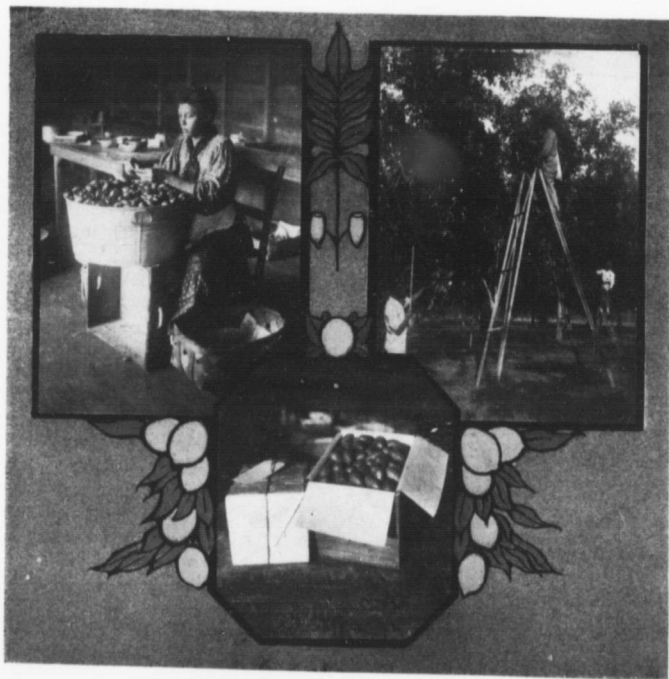
weigh only three or four ounces. The flesh of the first three, just mentioned, is light colored, in consistency and color about like apple-jelly before it becomes hard. Zengi and a few others have dark brown flesh, quite solid and meaty, edible while hard. But don't try the light fleshed varieties before they soften. Shades of departed persimmons! You'll never want another.

There's enough "pucker" in one fruit to do a dozen people.

Just in this respect we find one of the greatest drawbacks in marketing persimmons. They must be shipped while firm. They are put on the fruit stands. Their brilliant red color is very attractive, people buy them, try one and never another. They do not know enough to wait until the right time. Even the mocking bird and "possum" know enough to wait.

The persimmons are grown almost

entirely by grafting at the crown or native persimmon seedlings. They come into bearing in three or four seasons, and are very prolific. I know of no more beautiful sight than the persimmon trees covered with their bright glossy foliage among which the bright red fruit is set. We sometimes fail, I think, to appreciate the ornamental value of fruit trees. There are few ornamental trees that can compare with the Japan persimmon.



1. Shucking Pecan Nuts. 2. Picking Pecan Nuts.
3. Gift Packages of Fancy Pecans.

THE O. A. C. REVIEW

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MISS E. M. WHITNEY, Locals.

C. M. LEARMONTH, '10, College Life.

P. E. LIGHT, '11, Locals.

C. F. BAILEY, '09, Business Manager.

Editorial

The Public Speaking Contest this year was in every way most successful.

The Public Speaking Contest

The subjects were for the most part wisely chosen, and the speeches were well delivered. To the six

men who took part we extend our hearty congratulations upon their splendid efforts.

The benefits which these men received from preparing and delivering their addresses can scarcely be estimated too highly. A good deal of reading and original thought are necessary in preparing a good speech, hence there is much knowledge gained.

In the delivering of the speeches confidence and experience are gained, two things which are most essential to every man who would become a successful and effective speaker.

The fact that more than twice the number that could be accepted made

application for places in the Contest this year, is sufficient evidence of the great interest taken in this kind of work at the College. The rule of the contest is that the speeches must bear directly on agricultural work, and be suitable for a Farmers' Institute meeting. So we see evinced again the interest taken in subjects suitable for Farmers' Institute work by the large number wishing to take part. We, therefore, take this opportunity to throw out a hint concerning the advisability of allowing every student who so desires to prepare and deliver a ten or fifteen-minute speech some time during his Public Speaking Course, which would be suitable for a Farmers' Institute meeting. Of course, care would need to be exercised in the choice of subjects. Subjects should be chosen so that the speeches would be acceptable where they would be likely to be delivered. Each man who took

part in the Contest will take away with him a good speech well in hand. Why should not every man taking public speaking do the same? It would not matter how many took the same subject, so long as it was one which would be of interest to those for whom it was prepared. We believe that if this can be successfully carried out a big step will have been taken toward arousing enthusiasm in some localities where, at the present time, it is at low ebb. The graduates from this College are looked up to as leaders; leaders in agricultural operations and leaders in agricultural thought. They should then be prepared in every possible way to lead, and if there is one thing more than another which will help them to do so it is to be able to intelligently express to others the things which they have learned here.

To be able to take a subject well in hand, to hold the reins of argument firmly, to direct and drive well home the burden of meaning, is a power useful to every man who rises to address a council or stands on a platform to persuade a meeting.

Good speech, well spoken, is a social charm, an economy in explanation and hourly ministers to good understandings.

In the March, 1908, issue of the Review, the advisability of exempting the Second Year students from student labor was discussed to some length. The members of Class '11 presented a petition to the President immediately before the close of the spring term, asking that student labor for Second Year students be abolished. Their request was granted

and since the opening of the term in September we have had opportunity to observe with what success the new arrangement has met. Without a single exception the sophomores are thoroughly convinced that the time devoted to student labor in previous years, has been much more profitably employed in the Machinery Hall and seed judging lectures. Before the present college year the Sophomore Class has received practically no instruction in either of these departments. Especially to the man who intends to return to the farm is this work of great importance, since it is in such matters that he is called upon to use his judgment, and it is only when he possesses definite knowledge that he can use his judgment to his best interests. During the fall term, the class, under the able instruction of Mr. Buchanan, of the Experimental Department, made a thorough study of all the grass and grain seeds met with upon the farms of the Province. By comparing samples of different quality, a knowledge of the desirable and undesirable characteristics of seed grain was obtained. Such instruction cannot fail to be of material advantage to the practical farmer. The demonstrations given by Mr. Evans of the Mechanical Department upon the mechanism of farm implements, farm machinery and gasoline engines, will also be of great value in the purchasing and operation of the machinery upon the farm. The abolition of student labor has not, however, gained for the class all that was hoped for. It is questionable if it has provided a greater amount of time for general reading. Only a small percentage of the class make any great use of the library. This is chiefly because of the limited time at the dis-

The Second Year and Student Labor

posal of the average student for reading on general subjects. One objection to making the change was that some students were assisted financially by student labor and that the loss of this assistance would be keenly felt by those students. We fail to find one such instance. There seems to be no question but that the Second Year students have benefited by the removal of student labor, and that the experiment has proved quite successful.

"Improvement of School Grounds," is the name of a new circular published by the Ontario Government. A copy of this circular will be sent to each School Board in

A New Circular

Ontario to be used as a book of reference by the trustees and teachers. The circular contains much exceptionally valuable information for every Public School teacher in the Province.

It deals with "Location of Buildings," "Making of Lawns," "Planting of Trees," "Flower Borders," and

gives many useful hints as to the best and most suitable varieties of trees, shrubs and flowers to be planted. It contains also many excellent illustrations contrasting desirable and undesirable school grounds and school buildings. Many plans also are given for the proper laying out of the grounds.

This is decidedly a step in the right direction, and one which we trust will be the means of stirring up to action many School Boards who are now only considering the question of improving the grounds under their control.

We believe that the earlier a love for rural life and the beauties of nature can be implanted in a boy's mind the less desire he will have to leave the farm as he grows older, the more he understands of the crops he grows the better he will like to grow them. How can he study them without a school garden? How can he be expected to have a school garden without the co-operation and action of the trustees and School Boards? Is it not time to be up and doing?





COLLEGE LIFE

Conversazione

Brave men and pretty women thronged
in crowds,
And filled the spacious halls with
merry din.

—Old English Poem.

The Annual Conversazione, the most brilliant function of the college year, has come and gone, bringing with it its attendant train of excitement, eager preparation and gay enjoyment, and leaving in its wake a host of pleasant memories.

It was a function that would have done honor to an institution of greater magnitude than our own, and the students of both institutions are justly proud of it.

As in previous years, the "Conversazione" was held in Macdonald Hall, and the Junior Class, with the able assistance of the Macdonald girls, had spent several days in preparing for it, and when the eventful evening arrived the Hall had been transformed into a veritable fairy-land of multi-colored lights and magnificent decorations.

The gymnasium, where the concert numbers were rendered, was easily the center of beauty. The deep green of the cedar boughs made a pretty background for the snowshoes, tennis rackets and college pennants with which the walls were decorated, a profusion of inviting lounges and settees lined the sides of the room, and the whole scene was bathed in the soft glow from a myriad of poinsettia shaded lights, which gleamed like flaming-red stars from among the graceful cedar-wreaths with which the rafters were festooned.

The stage was a mass of pretty flowers, and graceful palms, and was set off by a background of evergreens, from which the letters O. A. C. blazed in college colors, and the red and blue letters of our sister institution sent back an answering glow from the other end. The general effect of the decorations was truly magnificent, and it is little wonder that the gymnasium was the center of attraction.

The third floor, where the refresh

ments were served, was almost as attractive in its way. Long lines of shaded lights drooped from the ceiling like thousands of luminous pink blossoms. The refreshment tables lined one side of the hall and were banked high with a profusion of ferns and flowers.

One of the most striking features of the evening was the novel innovation introduced in the arrangement of the various rendezvous. In previous years a number or letter has been used to indicate the location of these meeting places. This year, however, the rendezvous were represented by six old English inns, situated in different parts of the building. The pretty idea was carried out in detail by appropriate decorations. At the east end of the second floor Ye White Hart Inn hung out its inviting signboard to the passing traveler. The interior of the inn was decorated after the fashion of Old England, with trophies of the chase, saddles, riding crops, ancient weapons and copper flagons. A stone's throw from the White Hart stood the grim grey walls of Ye Castle Inn, which frowned down upon the unseemly levity of the passing throng. Passing up stairs to the west end of the third floor, the wayfarer came upon the sign of Ye Lemon Tree, in the door-yard of which stood an ancient lemon tree, its gnarled and thorny branches laden down with real lemons, and beneath it was a hard cushionless bench, upon which poor unfortunates might sit and meditate upon the evil practise of "skipping proms."

Three Inns were situated on the ground floor, namely, Ye Bell Inn, Ye Inn of Ye Rising Sun, and Ye Britannia Inn, and the same idea was carried out in these as in the others. (Needless

to say that all these inns were conducted on a strict, local option basis.)

The halls of the second and ground floors were very prettily decorated, but space will not permit of a description of them. Suffice to say that it is doubtful if at any previous function of this kind that Macdonald Hall has been so beautiful as it was on the evening of January the twenty-second.

At eight o'clock the guests began to arrive and were received by Mrs. Creel man, Miss Watson and Mrs. Fuller in the reception room. In a short time the big hall was filled to overflowing. Many of the guests were from other cities and towns, and representatives from several other Colleges honored us with their presence.

By nine o'clock the pleasant task of filling promenade cards was finished and the evening proper commenced. There were sixteen promenades, eight of which were concert numbers.

Fralick's Orchestra of Toronto furnished superb music for the promenades and delighted everyone with their splendid list of selections.

During the concert numbers the guests repaired to the gym, where Harold Jarvis held everyone spellbound with the superb range and power of his voice. His hearers were delighted with the magnificent interpretation with which he rendered his selections, and he was repeatedly called back in response to encores. The crowning feature of the musical programme was the rendering of Sullivan's exquisite composition, "Oh, Hush Thee, My Baby," by the Jarvis Quartette. The rich voices of the quartette blending together in the beautiful harmonies of the song simply entranced the audience, and those who were fortunate enough to hear this selection will long

look back to it with pleasant memories. The numbers rendered by Mrs. Littlefield, Mrs. Lewis, and Mr. Slade were also of a very high order, and contributed greatly to the success of the evening.

When concert numbers were not taking place the crowd thronged the halls, promenading to the strains of orchestra music, which came floating up from below. Hundreds of pretty girls went swinging along on the arms of their gallant partners to the rhythm of some catchy two-step, or nestled down in some dark cozy-corner to listen to the strains of dreamy waltzes. Snowy-haired boys and girls upon whom Father Time has left his mark, but for whom life still holds its fun and laughter, were filled with the spirit of youth and merriment, and swept along with the gay procession as if our Alma Mater had assumed the role of fairy god mother and restored them to youth for a single night.

Timid Freshmen talking shyly to their fair partners or making surreptitious raids on the refreshment table; jolly Sophomores filling the cozy corners and rapidly succumbing to cardiac affections; energetic Juniors, busy with their task of making every body happy; gallant Seniors endeavoring to stave off the wiles of Cupid, but failing utterly; this was the throng that filled the wide corridors, and a jollier, happier crowd never graced the interior of Macdonald Hall.

But though "men may come and girls may go," Conversats can not go on forever. Even the fun and jollity of the moment could not persuade Father Time to stay his relentless flight, and the evening drew all too swiftly to a close. By two o'clock the gay throng of guests had departed and the hall was

quiet again. Thus ended the Converson of 1909.

The greatest praise is due to Miss M. K. Rutherford and Mr. A. M. Shaw and their energetic committee, who, by their tireless efforts and careful preparation, were responsible for the success of the function. The boys of the College tender their heartiest thanks to their fair sister students, who assisted them so ably in the carrying out of the work. The committee in charge was as follows: Miss M. K. Rutherford, A. M. Shaw, O. C. White, J. M. Lewis, R. L. Moorhouse, W. R. Reek, J. D. Tohill and W. E. Edwards.

Lecture.

On Tuesday evening, January the twentieth, Mr. Frank Yeigh, the famous lecturer, favored the students with an illustrated lecture on "Canada." Massey Hall was filled to the doors and the cosmopolitan audience listened attentively as the lecturer spoke on scenes, picturing landscape, from coast to coast. Mr. Yeigh spoke at some length on the recent Tercentenary celebration, held at Quebec. It is the sincere wish of the student body that Mr. Yeigh will furnish us with another of his delightful illustrated lectures at some future date.

An enjoyable feature of the evening was the presentation to Professors G. E. Day and C. A. Zavitz of a gold headed ebony cane each. The Short Course students presented the gifts as a token of remembrance and as an indication of binding good fellowship. The professors replied in kindly words, expressing their deep appreciation for the honor bestowed on them, and it was their well-wish that these men, re turning to their homes after their short sojourn at this College, would retain

strong friendships to the same degree as the professors cherished the handsome gifts.

Eighth Public Speaking Contest.

The annual Public Speaking Contest was held in the gymnasium on January, the tenth, under the direction of the Union Literary Society. President G. Manton occupied the chair.

The six addresses given were suitable for a Farmers' Institute meeting, where practical matter is most valued. The answers given to questions asked by anyone in the audience showed the speakers' abilities to render impromptu replies. This is a note worthy feature of the contest.

The gymnasium was well filled with a very appreciative audience, and the subjects were interesting and ably rendered.

The judges, Professors G. E. Day and W. H. Day and Mr. G. A. Putnam, decided that the order of merit was as follows:

1. A. M. Shaw, '10.
Subject, "Good Roads."
2. P. C. Dempsey, '11.

Subject, "Agricultural Co-operation."

3. R. C. Treherne, '09.

Subject, "The New Entomology."

4. W. E. Edwards, '10.

Subject, "Advance ment in Canadian Agriculture."

Mr. R. B. Cooley and Mr. M. M. Baldwin both made good speeches, their respective subjects being "The Farmer and Politics" and "Tobacco Culture in Essex County." The first prize is ten dollars, the second eight, the third six and the fourth four dollars.

Between the speeches entertainment of a light humorous character was supplied by Mr.

Charles Emery, of Toronto. His selections were well received by the audience. Mr. Charles Rich, pianist, rendered several popular selections, and an enjoyable and profitable evening was brought to a close by singing the national anthem.



A. M. SHAW,
Winner Public Speaking Contest.



Hockey

AS stated in our last issue, College decided to withdraw from the ranks of Intercollegiate hockey this year, and enter the Intermediate O. H. A. This step was decided upon by the Executive, after careful deliberation, they believing that our chances of winning in the latter league were greater than in the former. Our first efforts in the O. H. A. can not be styled an unqualified success, for we have to our credit one victory only, this against Hespeler, on their ice. At the hands of each of the other teams in the group, Galt, Preston and Ayr, we have met defeat, and the scores which fairly indicate our strength in comparison with our opponents, go to show that our hockey directors did not make a mistake in entering the O. H. A., for we surely have made just as creditable a showing as we did last year in the other league. Lack of team play has been responsible to a great extent for the defeats we

sustained, and that improvement in that direction is quite possible was clearly shown in the game at Ayr against the home team. Though we ultimately lost, it was a good exhibition of clean, fast hockey, combined with team play that exhibited a complete reversal of form over previous occasions. We hope to see the team in the same league again next year, and see no reason why they should not move a notch or two higher in the race than they are at present.

January 7th.—The first game of the season was played on the home ice against Ayr, College being defeated by 4 to 3. Both teams were in poor condition, and combination play was woefully lacking. College scored the first goal, Ayr the second, and it remained this way until a few moments before half time, when Ayr, by a burst of speed put two more past Hoffman, leaving the half 3-2. College made the first tally upon the resume of play, but

Ayr steadied down, and after a regular fusilade of the College nets, notched another and the game. Hoffman in goal, played one of the best games of his career, and it is much to his credit that the score was kept as low as it stood.

The College team was: Goal, Hoffman; point, McRae; cover, Edgar; rover, Foster; center, Clark; left, Learmonth; right, Gordon.

January 9th.—College defeated Hespeler on the latter's ice in a game that resembled shinny more than hockey. It was very rough through out, and many players decorated the fence, the offenders coming from both sides. Hespeler drew first blood, but College quickly retaliated, Clark and the two Gordons getting in some combination work that resulted in four goals before the end of the first half. In the second half Hespeler braced up, scoring two while our boys made only one, leaving the final result 4-3 in favor of College.

College line-up was: Goal, Hoffman; point, McRae; cover, Edgar; rover, Moore; center, Clark; right, O. R. Gordon; left, B. Gordon.

January 12th.—Our boys journeyed to Galt to play the scheduled game. The Galt rink was small and very poorly lighted, making fast hockey almost an impossibility. College was in rather hard luck, a number of their shots hitting the Galt goal post and bouncing out, while several of the goals scored against them, would never have gotten past the vigilant eye of Hoffman had it not been so dark that he could not see the puck at any great distance away. However, Galt was the better team and won by a good margin, the final score being 7-1.

January 16th.—Preston defeated us

on our own ice 10-2. The first half was close and exciting, the visitors having only a slight advantage, but on resuming play our boys went to pieces, and Preston simply skated all around them, adding six more goals before time was called.

The same team lined up for College in this and the game at Ayr as played at Hespeler.

January 19th.—The best game of the season was played in Ayr, and won by the home team, after ten minutes over time the score being 9-7. The game started out fast, and a great deal of slashing prevailed, which was promptly checked by the referee. Ayr scored three goals, and College one, but our boys got busy and were making things interesting around the Ayr net when the bell rang, but no score resulted. The second half was much faster than the first. College scored four in quick succession, but in the last three minutes of play, Ayr forced two more through, tying the score and saving the game. The teams then took the ice for ten minutes overtime, and in that time Ayr scored two, which we failed to even up.

College team: Goal, Hoffman; point, Edgar; cover, B. Gordon; centre, Clark; rover, Learmonth; left, R. Gordon; right, Howard.

January 21st.—College met another defeat, Hespeler turning the tables on them. The game was fairly even, and fairly fast, but the shooting of the College forwards was not up to the mark, and they missed many opportunities to score. The final score was 6-3.

The remaining two games of the schedule against Galt and Preston were defaulted, the Executive not deeming it advisable to go to the expense of playing the games, when our chances

of success were so slight and when even a win would not have made any material difference to our standing in the league.

Our New Rink.

Political Economists say that where ever there is a demand a supply will come sooner or later. Last winter there was a demand for skating at times when the rink was reserved for hockey, hence the supply—our new rink.

In former times the Macdonald girls—and others—found that one evening's skating a week was insufficient. As our hockey enthusiasts did not wish to have the time to which they might devote to their favorite pastime limited, the only solution of the problem was to provide more ice. Accordingly, our

Athletic Executive had a plot of ground, which lies beside our enclosed rink, levelled and flooded, thus affording greatly increased accommodation.

That the opportunity given, is appreciated, is evidenced by the large numbers of both sexes to be seen each evening on the rink, and to all appearances enjoying themselves very much.

At times when the rather rough ice on our new rink becomes somewhat crowded, some of the more adventurous of our friends from across the way go to the smoother ice of the enclosed rink. Hockey soon ceases, and the rest of the skaters follow their leaders, forcing the hockeyists to the smaller, rougher rink outside, much to their chagrin and displeasure.

THE PROSPECTOR.

Lured by the golden glamor of the West,
 He crossed the pathless plains and scaled the bold
 Titanic forms that, rising fold on fold,
 Touch heaven's blue; and, toiling, strove to wrest
 From Nature's rugged and reluctant breast
 The treasure she had hidden there of mold—
 The treasure of her hoarded yellow gold—
 Seductive hope of many a hapless quest!

For this he left all other hopes behind,
 And gave his manhood's prime and powers away,
 Content to be forgotten of his kind—
 Yet all the while within himself there lay
 The unregarded treasure of the mind,
 Deep-buried, priceless, wasting day by day.

—Helena Coleman.

Our Old Boys

J. D. Gilmour, '08, has been appointed Assistant Agriculturist at Lindsay, and Metcalf, also of '08, will occupy a similar position at Collingwood.

A. H. Hawke, an associate of 1898, is farming near Drinkwater, Sask. He is now at College taking the Short Course.

While on his way home from a trip to the Old Country, R. J. Finn, one of the successful farmers of Moosomin, Sask., visited the College lately. Formerly of Hespeler, Finn entered College in 1881, a classmate of Hon. Mr. Motherwell, Minister of Agriculture for Saskatchewan, and graduated, carrying off the gold medal, Motherwell occupying second place.

A pretty wedding took place at the residence of Mrs. John Chambers, Pearson street, on Monday morning at 11:30, Dec. 28th, 1908, when her second daughter, Laura E., was married to Mr. William A. Brown, B.S.A., of the Maine University staff, and only son of Mr. and Mrs. George Brown, Meaford. The ceremony was performed by Rev. Dr. Campbell, pastor of the Meaford Methodist Church, and Mr. Rolland Chambers gave his sister away. The bride and groom were unattended.

After the ceremony the guests, numbering about 25, repaired to the dining room, where a sumptuous repast awaited them. Mr. and Mrs. A. Brown, of Owen Sound, and Miss Maud Saund

ers, of Presque, Isle, were the guests from a distance.

Mr. and Mrs. Brown left on the 3:00 train for Portland, where Mr. Brown will lecture at the Conference now in session, prior to returning to Orono, Maine, where they will reside. In honor of the bride and groom a reception was held at the home of Prof. Hurd on their arrival on the evening of January 2nd, 1909, where they were given a hearty welcome and presented with a cabinet of silver from the staff of the College of Agricultural of Maine University.

Sidney Calvert entered College in 1887 and obtained his diploma in 1886. He took post graduate work for a year, this being previous to the affiliation of the O. A. C. with Toronto University. Leaving Guelph, he became connected with the Missouri State University at Columbia, where he is now Professor of Organic Chemistry. He has been connected with this institution for the past fifteen years, rendering excellent service.

We have it on good authority that Swaine, who took his first year with the class of 1910, has followed the example of several of his classmates and taken unto himself a wife. All who roomed on either of the Hunt Streets during the College year, '06-'07 will remember Swaine, large of limb, open hearted, and with an ever-ready water pitcher, and will join with the Review in extending to Mr. and Mrs. Swaine

their heartiest congratulations and best wishes for a happy and prosperous life journey.

R. D. Prittie visited the College last week. He is now head of the Forestry Department of the Western Division of the C. P. R. He is engaged in the planting and growing of trees, shrubs and plants at various places along the line from Winnipeg to Vancouver. He has a splendid work to do, assisting settlers on C. P. R. lands, beautifying station grounds, and so forth.

We wish to correct a statement made in our Christmas number, that T. H. Sharp is managing a banana plantation in Bermuda. He is, and has been for some time, manager of a sugar factory and sugar cane plantation in Jamaica, B. W. I. We regret that this mis-statement was made, and hope that everybody will understand the impossibility of verifying every item of news handed in.

In the engraving below is shown a view of the fruit ranch of R. W.



HOME OF R. W. DAWSON.

After leaving College, J. F. Monroe, B. S. A., '06, went to the Georgia Experiment Station, where he had been appointed Assistant Horticulturist. The orchard and all outside work of the department was placed in his charge, giving him valuable experience, which he is turning to good account at his old home at South End, Ont., to which he returned some two years later. He is engaged in fruit and vegetable growing, specializing in the culture of peaches and grapes.

Dawson, near Nelson, in the Kootenay Valley, in British Columbia. Dawson entered College with the class of 1909, but went West before completing his second year. He landed in the Kootenay and bought forty acres of land some of which was very heavily timbered. He immediately began clearing operations and, after two and a half years of hard work, has twenty acres cleared, and some six hundred apple trees planted. Although he did not take the full course, he has found that

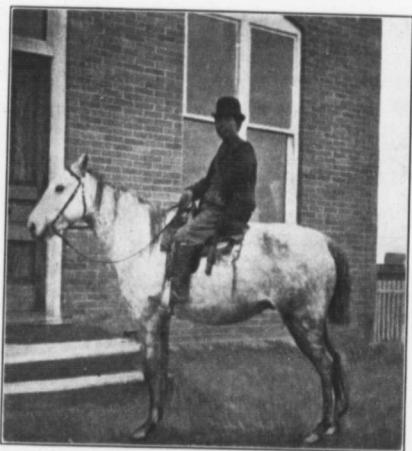
his work at College has been of material benefit to him, especially in horticulture, and has made him much better fitted to cope with the difficulties that are continually arising. His address is Willow Point P. O.

The object of the Alumni Department of The Review is to give ex-students personal news of friends whom they knew at College, but who have since drifted far away.

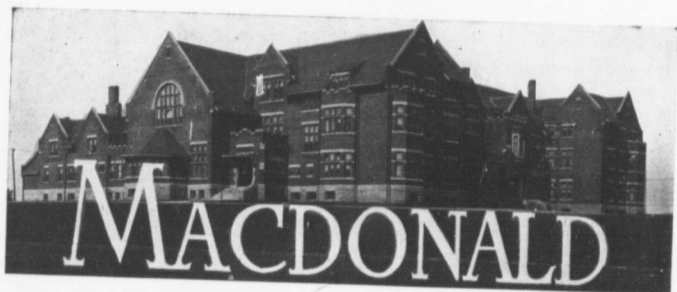
Ex-students, graduates, this is your department, it is for your benefit and it will be what you make it, and no more. The Editor can only arrange and put together the items sent in to him; without such help he is powerless.

From time to time we receive criticism and complaint of the paucity of information contained in our columns, but when we ask for co-operation our critics are the last ones to help us. We take every possible precaution to prevent the publishing of statements not founded on fact. Nevertheless, mistakes appear from time to time, but we are always ready to make corrections when our attention is called to them.

If you know of any event of interest to classmates let us hear about it. If you do not care to put it in shape for publication, give us the facts and we will attend to it, but give us news. This is your department, and it will be what you make it to be.



NAG "TANY" OF SUGAR BEET FAME.



Music in the Home

BY A. A. BACKUS, M.D.

ONE great influential factor in emotional life is overlooked in our educational curriculum, and in domestic life. It is music, the power of harmony and melody to control the sensibilities and the passions.

We are as yet not even upon the threshold of its possibilities and so far, the art of music has been used only as an element to add to our sensual pleasure, to inspire religious emotions in all places of worship, and in war, to stimulate the courage and increase the physical endurance of the soldiers. That music has the power to do all this is a fact beyond dispute, and should be a hint of its possibilities in other marches of that clamorous thing called life.

The clarion of the trumpet, the chime of the bag-pipe, the sound of the harp, the melody of the banjo, the peal of the organ, touches and stimulates each its particular emotion. When these spirits which preside in all the arts were normal, it was not by chance they were called The Muses, but, because in every art there must be that true essential of all music—harmony

—in painting, the harmony of color; in architecture, the harmony of form; and so Schelling says "Architecture is frozen music," and Madame de Stael speaks of statuary as "fixed music." Man is not the only creature influenced by sweet sounds. The birds, both free and caged, are inspired to greater efforts of song by certain musical notes, preferably those of the higher key; the dog actually suffers from those higher notes, but takes pleasure from those in the lower key; the herded sheep are happier and better nourished because of the sound of the shepherd's pipe; and every horseman knows, or should know, the influence of the low whistle, or humming voice upon the nervous horse.

The marvelous mechanism of the ear is not alone to enable us to communicate with each other and to protect us from unseen dangers, a much less complex contrivance would do that, but, also to enable us to receive through certain sounds the deepest emotions known to human nature.

Who has not in a concert hall seen the faces of a vast audience soften at

the sound of some melody, or grow pale with emotion at the climax of some great oratorio? There is no in fluence in the world which holds such power over the emotions as music, and why we do not study and use this power for our betterment and our hap piness is one of the mysteries of per verse human nature.

We read of the starved bodies and depraved natures of those living in the crowded districts of the great cities, and are as shocked as we can be over anything of which we practically know nothing about; for in the agricultural districts of this great Canada there is no hunger of the body—but is there not a certain hunger of soul?

We cannot keep our physical health by "bread alone"—nor can we feed our emotions satisfactorily by the dull routine of daily tasks; there must be something added, a certain music in the soul to make life, any life, worth the living.

It is quite true we have our tele phones, our more comfortable houses with many conveniences unknown in the early days, but, perhaps the old fashioned singing schools added more to the pleasure and happiness of the communities, where they existed, than do these things we now boast of, add to ours.

There is no doubt about the materi alism of to-day, and to scorn the arts, except such arts as contribute to the physical comfort, is the present cus tom. Music, and its twin sister poetry are laid aside as useless and in doing this we are leaving a blank in life which is likely to be filled with a vice and selfishness.

It is only in the very old fashioned homes that the day is begun by the reading of the most beautiful and musi

cal poetry ever written—the psalms of David—and closed with some simple hymn of praise—you smile—and yet this foolishness (?) feeds the soul's hunger as do the carbohydrates the body's need. Our emotional life is as much a part of us as is our physical life, it is our emotional life that de cided what our physical life shall be.

If our emotions are brave, true, and tender, our lives will be noble and filled with gentle deeds; if our emo tions are base, selfish and undisciplined, so shall our lives be and the one power to touch and train the emotional life is music. Emotional life is fed through the success of sound and sight, color and harmony, so we have harmonious coloring as well as harmonious sounds.

The normal eye during the month of October, in Country Canada, feeds the emotions with the sight of harmonious coloring and glorious lights and shade. The crimson of the maples, the sorrel of the chestnuts loosening from the greeny burrs, the pale yellow of the birches with the dark green of the pines; all this harmony of color influ ences thought, touches the sensibilities, but, it is through the ear our deepest emotions are aroused. The perfect ear differentiates every sound—the rustle of the leaves, the swaying of the branches, the twitter of the birds, the sad moan of the winds, the patter of the rain, the bleating of the sheep, the mooing of the cows—every note of na ture's music touching a similar note in the labyrinth of the human ear and awakening the gentle emotions. Again the discordant sounds, the wail of the beaten child, the shout of the angry man, the squeal of the pig being slaugh tered, the howl of the lonely dog, the shriek of misery and the cry of pain; emotions stirred to strife, to anger, to

doubt, to unbelief in the goodness of God.

It is through the ear emotions are touched, controlled, regulated and to touch and train this emotional life, music is the all-powerful ally upon which we must rely.

When the great master wrote:

"The man that hath no music in him self,

And is not moved with concord of sweet sounds,

Is fit for treasons, stratagems, and spoils;

The motions of his spirit are dull as night

And his affections dark as Erebus,

Let no such man be trusted."

he stated a scientific fact which it would be well to consider when selecting a companion in a friend, particularly in a companion for life. In the home the music of the low, soft voice, the music of poetry, the music of song.

To sing and dance is the impulse of happiness, and, why should we not be happy? We have but to observe the effect of the sounds from that wonderful mechanism—the gramophone—upon all sorts and conditions of people to see the power of music to add to our well being and pleasure, and yet this is only mechanical harmony. The simplest air upon the most primitive instrument, when touched by loving hands, gives more pleasure than can ever be derived from gramophones or street pianos, and the old fashioned songs sung by voices of those dear to us in the home, stir the feelings of the weary heart, and tune the emotions to peace and enjoyment.

In our study of "Home Economics" we might do well to consider the things which add to our happiness, as well as the things which add to our

convenience and comfort. "A man's life consists not in the abundance of things which he possesseth" but in the abundance of his enjoyments, the purity of his thoughts, and the nobility of his deeds, so as our thoughts and acts are under the control of our emotions, it is essential to have some knowledge of the powers which influence them, and the most active influence known is music.

Not of necessity, classical music, but musical sounds, musical voices, musical laughter. When selecting a clock, see to it that it gives a musical note when striking the hours. And as discord has the opposite affect from pleasant sounds, avoid loud voices, uncouth laughter, creaking boots, squeaking doors, and all those disturbing noises which ravage the nerves and impair good nature.

The power of music to bring into the home happiness, and through happiness health, is something to be thought of in the regulating of the Home.

The time is not far off when in the treatment of nervous diseases, music and musical sounds will be scientifically used as an agent of greater value than drugs in bringing a speedy recovery.

In our struggle for those material comforts of life let us not quite forget to pause and listen for the music and poetry of life, for after all is said, it is in these two arts our greatest happiness will flow.

Sonnet.

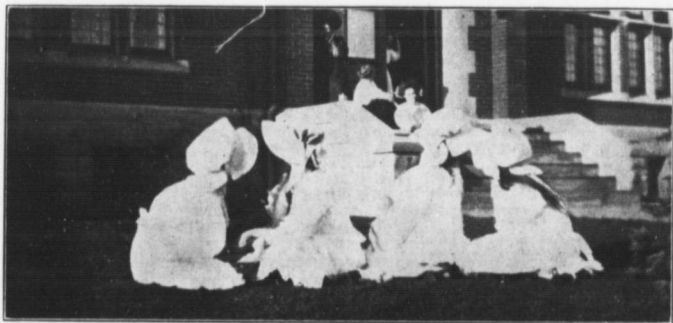
In Mistress Nicely, a Pattern for Housekeepers.

She was a woman peerless in her station,
With household virtues wedded to her name;

Spotless in linen, grass-bleached in her
fame,
And pure and clear-starched in her
conversation;
Thence in my Castle of Imagination
She dwells for evermore, the dainty
dame,
To keep all airy draperies from shame,
And all dream furnitures in preserva-
tion:

There walketh she with keys quite
silver bright,
In perfect nose, and shoes of seemly
black,
Apron and stomacher of lily-white,
And decent order follows in her track:
The burnished plate grows lustrous in
her sight,
And polished floors and tables shine
her back.

—Thomas Hood.



Among Ourselves

On Friday evening, January 8th, the new Short Course girls assembled together in the gymnasium in response to an urgent summons which the enterprising Homemakers, remembering their experience of last September, had issued. Music being plenty, dancing was the order of the evening at the first, but when all were present, and with inward trembling but outward calmness, awaited the result. Miss Whitney ably supported was seen upon the platform. During the silence which ensued the new girls were given a hearty welcome by Miss Whitney, and as a great favor were allowed to partake of some Baby Food which all

students of Dietetics informed the girls was indispensable. The rush which became general toward the platform was heartily applauded, when the participants found themselves each grasping an All-Day-Sucker. Miss Whitney put every one at their ease, and when Paul Jones and Sir Rodger de Coverly were proposed they were made very vigorously evident.

At Home.

An opportunity of becoming better acquainted was afforded the college men and the new girls of the Short Course classes, on Saturday evening, January 9th, a goodly number of young people thronged the comfortably ar-

ranged reception rooms of Macdonald and they apparently enjoyed the evening. During the promenades the Misses Spence, Kilpatrick and Wylie played several inspiring selections. Solos and other interesting things were listened to in the gymnasium during the intervals. The usual refreshments were served, and soon after the party dispersed.

Y. W. C. A.

The last Y. W. C. A. of the term of 1908 was taken by our Vice-President, Miss Dobson. A Christmas lesson, well written and delivered was given, and much enjoyed.

Miss Anderson, of Toronto, the tra-

veling Secretary of the Association, was able to be present at the opening meeting of the new term. She addressed the gathering upon the work of the Association, its extent, and nature, at home and abroad, and her words were listened to with great pleasure.

It is with great regret and sympathy that the resignation of Miss Bailey from the position of President of our Y. W. C. A. is received. Miss Dobson, the Vice-President, is taking up the work which Miss Bailey, through ill health, has had to leave. The Executive desires to see a great widening and extending of its work during the coming year, and all help will be gratefully received.

Much Ado About Nothing

If you think these jokes are old,

And should be put upon the shelf,
Just come around, a few of you

And hand some good ones in your
self!



Miss S. (studying Hamlet)—"Fools propound questions wise men cannot answer."

Miss P. (looking up Carlyle)—"That is why I flunked this exam., I guess!"



Mac. Girl—What queer looking skates.

Friend—Yes, what are they made of?

Mac. Girl—Oh, I know, that stuff celluloid (she meant aluminum).



Freshite to Old Girl—Is there a street car service in Guelph?

Old Girl—Why yes, the four cars meet at the square every Saturday.

Popular Song—Ain't it funny what a difference just a few hours make?

As sung by Gladys—Ain't it funny what a difference just one R (hour) makes!!



There was great excitement in the Hall for several days after the At Home, as a gentleman's hat was seen resting calmly in the vestibule. Whose lover had been so flustered when he quitted the Hall as to forget his hat? The problem was solved at last by the news that an O. A. C. youth had at last obtained board in the Hall!!



In a crowded car en route to the hockey match an O. A. C. student rises gallantly and offers his seat to a fair Macdonaldite, who accepts it, and says, with a bewitching smile, "I think there is room for two."

Freshite (after the At Home)—Why there are some nice boys at the O. A. C., quite gentlemanly!!

Antiquities wanted—Address parcels to the

TURK SHOP,
Macdonald Hall.

“Parting is such sweet sorrow!”

A glimpse of the G. T. R. platform,
December 22nd, 1908, 5:55 p.m.

Ah! Then, and there were hurryings
to and fro,

For bags and trains and murmurs of
distress;

And cheeks, once pale, now in despite
of woe,

Flushed with the warmth of many a
late caress,

And there were sudden partings, such
as press

The hope from out young hearts,
united lives

Once borne asunder may not be re-
fitted, who can guess

Never more they'll meet—though hard
each strives,

When, after months of joy, that sad
“Two weeks” arrives.

The Friday night before the last
prom. two youths from the O. A. C.
strolled confidently up the walk lead-
ing to Macdonald Hall, rang the bell,
and on the opening of the door,
stepped inside, saying, “Miss—and
Miss—please.” On the news volun-
teered by the smiling maid that the
girls were not receiving to-night, they
hastily retired amid a volley of laugh-
ter from the upper window.

Treatment necessary for an invalid
with a mere cold at Macdonald Hall:

1. Rubbed severely with one pint of

camphor, taking pains to insert as
much as possible into the patient's
mouth.

2. Swathe patient in bright red
flannel.

3. Procure a hogshead and fill to
the brim with boiling water. Insert
face and remain in this position for up-
wards of 15 minutes.

4. A mustard plaster, 5 inches deep,
must be laid on the chest.

5. A capsule, 5 inches long, is next
given to be swallowed without a gulp.

6. One glassful of boiling water is
then swallowed.

This treatment is recommended, and
it is warranted to cure (if it does not
kill) the patient.

MYSELF AND ME.

G. Good.

I'm the best pal that ever I had—
I like to be with me,
I like to sit and tell myself
Things confidentially.

I often sit and ask me
If I shouldn't or I should,
And I find that my advice to me
Is always pretty good.

I never got acquainted with
Myself till here at late,
And I find myself a bully chum,
I treat me simply great.

I talk with me and walk with me,
And show me right and wrong,
I never knew how well myself
And me could get along.

I never try to cheat me,
I'm as trustful as can be,
No matter what may come and go
I'm on the square with me.

It's great to know yourself and have
A pal that's all your own;
To be such company for yourself
You're never left alone.

You'll try to dodge the masses,
And you'll find a crowd a joke,
If you only treat yourself as well
As you treat other folk.

I've made a study of myself,
Compared with me the lot
And I've finally concluded
I'm the best friend that I've got.

Just get together with yourself,
And trust yourself with you,
And you'll be surprised how well your
self
Will like you, if you do.

Portraits of Particular People with
whom you are probably personally ac
quainted.

I.

Exhibited at the Royal Academy, date
unknown.

Framed in an open doorway.
Background.

Piles of vaccination certificates.
Boxes of suspicious yellow paper:
Middle distance.

A large tick tick.
A small animated object.
Foreground.

A Cute Cap of Copper Cumbered
with a Clapper.

II.

Took first prize at the Pan American
Exposition, and has since hung
in the White House at Washing
ton.

Framed in pure gold.
Background.

Three large show-cases filled with
Domestic Art.
Middle Distance.

An attractive directoire model.
Foreground.

Tons of Tracers Trying to Thread
Thousands
of Tapes Through the Teacher's
Thimble.

III.

Painted by T. U. B. Drierr.
A perpetual Problem Prefering
Preposterously Piggy Petticoats
To Pretty Pumpkin Pies and
Plum Plashed Puddings.

IV.

Presented to the Macdonald Institute
in 1903.

Framed in an atmosphere of authority.
Background.

A book-case containing some vol
umes familiar to us all.

Middle Distance.

A Dainty Dame Dingling Daily
Directions and Dispersing Dread
ful Dietetics Destined to Dis
turb

Delightful Dreams.
Foreground.

A large chrysanthemum and a bunch
of keys.

V.

A full plate engraving in the B. C. S.
C. B.

A sensible Sympathizer, Sometimes
Sensational but certainly Sufficiently
Strict to Satisfy
Slumbrous Scholars.

VI.

Botticelli.
Framed in a glass case.
Background.

One Skeletal system—200 to 300
parts, authorities differ.

Middle Distance.
An anatomical study clad in brown.
Foreground.

A Mad Meandering March
Of Many Modest Manikins.

VII.

Sketched with the point of a
No. 12 needle.
A Bright Bird always Busy,
Basting, or Beautifying Bows.

Of Clever Characters as to their
Career.
Foreground.

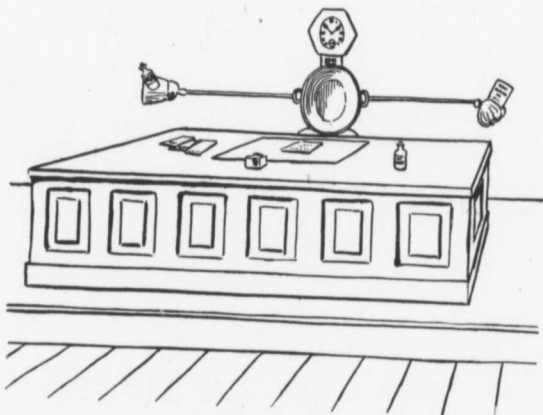
An historical shade producer men
tioned in several of Shake
speare's plays.

VIII.

Found inscribed upon the Eastern
Wall of the Sphinx. Reproduced by
request, without permission.

X.

Hung in the North Kitchen.
Framed in spotless white.



IX.

Hung in the Palace of Beautiful Mem
ories

15, rue de la Paix

Venice

Araby

Framed in "Dem" plans.

Background.

Sixteen minute portions of humanity.
Middle Distance.

A Correct Critic kindly Counselling
a Coming Class

Background.

Twenty-two rules for the thorough
Cleansing of all utensils.

Middle Distance.

A sweet Smile Surrounded by Sev
eral Shimmering Sunbeams and
Softly Saying Such Sage Some
things as Simplify the Science
of Satisfying Stomachs.

Foreground.

A Small musical instrument and a
variety of other things.



Who is that man who sits and bites
 His pen with aspect solemn?
 He is the Funny Man who writes
 The monthly local column.

By day he scarce can keep awake,
 At night he cannot rest,
 His meals he hardly dares to take
 His jests, he can't digest.

His hair though dark, is streaked with
 white,
 His cheek is wan and pale
 And all for seeking day and night
 For jokes that are not stale.

His joys are few; the chiefest one
 Is when by luck a word
 Suggests to him a novel pun
 His readers haven't heard.

And when a Yankee joke he sees
 In some old book, well then,
 Perhaps, he gains a moment's ease
 And makes it do again.

The thought that chiefly makes him
 sigh,
 Is that a time must come
 When jokes, extinct like mammoths,
 lie,
 And jokers must be dumb.

When every quip to death is done,
 And every crank is told,
 When men have printed every pun,
 And every joke is old.

When nought in heaven or earth or sea
 Has not been turned to chaff,
 And not a single oddity
 Is left to make us laugh.

~ ~

**From the 1st Year Examination
 Papers.**

Young oats should never be fed to
 green pigs.

~ ~

In a head of wheat we find—A Col
 onel, two flowering glooms and a rake
 off.

A Toast.

Here's to the Garden of Eden,
Where Adam was always a weeding,
"Till Eve, by mistake,
Was bit by a snake,
Who on the ripe pippins was feeding.

Then a longing seemed to possess her,
For clothing sufficient to dress her,
And ever since then,
It's been up to the men,
To pay for her dresses—God bless her!

Short Course Student (surveying swimming bath)—What a privilege to have! If I were at this College, it would take a pretty good man to prevent me from taking a bath every month.

Miss W.—Oh, here you are Mr. Jason!

J. C. Young—That is not my name, it's my nickname.

Miss W. fainted.



The Experimentalist.

Whilst a well-known Senior was endeavoring to make clear the true meaning of "Rosabel" to the Professor of English, the other day, it occurred to the learned Professor to make the following very opportune remarks:

That, Mr. McKenzie, is the indication of the feminine mind. In other words, you should not take the first rebuff. She often means "yes," whilst her voice says "No."

P.S.—Mac was seen making a bee line for Macdonald Hall about five minutes later.

Overheard at Conversat:

S.—Let me introduce you to these two ladies over here?

T.—No, thanks; I don't like their style of beauty.

S.—They are my sisters!

T.—They have my sympathy, but I can't do it.

Which is right?—A hen lies, or a hen lays?

Professor Graham's answer to this vexed question is this—When a hen cackles, she either lays or she lies.

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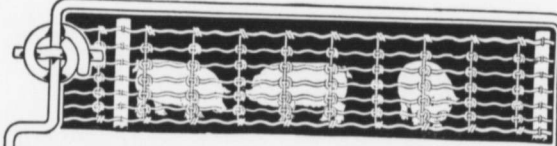
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in the Matter of Raising Calves on
Skim Milk.**

Gentlemen:

This has been our most successful year at the fairs, and our winnings were large in the younger classes. Much of our success we attribute to the regular use of *Herbageum*. By its use we are enabled to maintain the true dairy conformation in both our Jersey and Guernsey herds. We have found *Herbageum* to be very economical because it enables us to put our calves on skim milk at a very early age; they do fully as well as on new milk and we save the cream. Not only is *Herbageum* a sure preventive of scours, but in extreme cases of scours a sure and permanent cure.

For one season we used one of the heavily advertised Stock Foods, but we very much prefer *Herbageum*, as with it the results are certain and it is altogether more economical. To sum up the matter we may say that *Herbageum* is of very great assistance to us in raising show stock. The regular feeding of it assures more perfect development, and calves **raised on skim milk and *Herbageum*** do, in our experience, develop a **better** type of dairy heifer than those **raised on new whole milk**. This is our experience and we give it for what it is worth.

Yours truly,

WALTER McMONAGLE.

Glen View Farm, Sussex, N. B.

The above opinion, expressed by a man of Mr. McMonagle's experience and standing, should convince even a prejudiced mind of the value of *Herbageum* for young calves. Hundreds of farmers testify that *Herbageum* makes skim milk equal to new milk for calves, but the standing and character of Mr. McMonagle make his experience and opinion doubly valuable.

Mr. J. C. Ross is one of the most successful breeders and exhibitors of Cotswold sheep. He gives his opinion as follows:

Gentlemen:—

It affords me pleasure to say a good word for *Herbageum*. I have been feeding it for five years to horses, cattle, and sheep. I find it of great benefit in keeping show stock in shape. It keeps them free from disease and with a good appetite. It makes drugs and condition powders unnecessary, and there is never any bad effect from its use. I have been very successful in the leading prize rings of America, and I consider that *Herbageum* has helped me in this. I will certainly continue to use it. I have tried other preparations but I find nothing that gives such satisfactory results as *Herbageum*. I am, as you request, sending you photographs of some of my prize winning stock with description.

Yours truly,

J. C. ROSS.

Clayfield Stock Farm, Jarvis, Ont.

Mr. Fulmer (chemistry)—Mr. Mc Killigan, give me the equation for that experiment you have just performed.

McKilligan—I didn't mix it right, and I can't get it to come out correct.

K—You haven't very much hair on your head, Robinson!

R—Oh! I guess I will be able to pull through without it.

K—I hope so, because they will never pull you through with it.

C. L. S. Palmer—Isn't Oleo-margarine just as good as butter?

Mr. Le Drew—Perhaps so, Mr. Palmer; but I wouldn't accept molasses with flies in it for blueberry jam.

Prof. Zavitz (addressing Short Course students)—Mr. Chairman, members of the Short Class. (Then some body smiled aloud.)

Voice From the Poultry.

Jerry—If I see you speaking to that girl again, I'll fatten you for the first of April. She's come here for the Short Course, three years, and she's mine-mine-mine.

Tommy Clark (at breakfast)—I wonder whether there is salt or sugar in this shaker?

He then raised the shaker to his nostrils, took a long loud smell, and pronounced it "sugar."

Prof. Harcourt—Methyl Alcohol is a good solvent for fats.

Snyder—Will Ethyl Alcohol do the same?

Prof. H.—Yes.

Snyder—I'm going to start drinking.

FENCE TALK No. 1

Common sense and simple arithmetic can show you the economy of Page Fence as against any other fence there is.

Common sense will show you that because Page Fences are—by actual test—fully one-third stronger than the best of other fences.

Common sense shows you that the stronger fence is the better fence—because it can be stretched tighter, and will stand up to its work longer.

Page Fences, with their high-carbon (tougher, harder) steel nine-gauge horizontal wires, are a third stronger than the best of the other kinds. By harsh tests, this Page wire stands a strain of 2,400 lbs. The "hard drawn" horizontals in the other kinds break at 1,800 lbs. strain. Some of them break at less.

Simple arithmetic will show you that Page Fences, costing maybe a cent more a rod than the half-as-strong kinds, is actually five cents and more a rod cheaper—because fewer posts will keep them in better shape.

Figure it yourself. Using Page Empire Fences, say, you can safely set the posts half as far apart again as you'd dare to with ordinary wire fencing. That means two posts for Page Fence to three for the other kind.

What is it worth to dig post holes? What are fence-posts worth in your section? Figure out the saving for yourself—it is easy to do.

Here are but part of the reasons why you can't afford to buy other than the Page Fences—no matter what you pay. Let us send you a booklet (free) that shows you how to prove fence-value before you buy. Ask by mail of our nearest place. The Page Wire Fence Co., Ltd., Walkerville, Toronto, Montreal, St. John, Vancouver, Victoria.

"PAGE FENCES WEAR BEST"

Maiden—Who is that cute little fellow over there?

Mr. R. I.—That's Mr. Fulmer.

This, sir, is the O. A. C.!

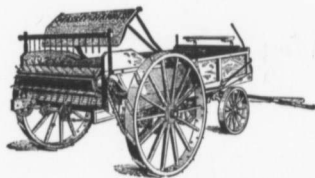
Oh! I see!

J.—It is a well-known fact that the front foot of a chicken is always the strongest.

Conductor on train—Schaw! Schaw next station.

T. Clark—Shaw isn't with us tonight, Conductor.

One imported Freshman was heard to remark: This c-c-country isn't h-h-h-half so c-c-c-cold a-as I exp-p-pected. I've o-o-o-nly fr-fr-frozen one e-e-car a-a-nd m-m-m-my n-n-n-n-nose.



POINTERS ON SOIL FERTILITY

Amount of Manure Required

It is, of course, impossible to give any definite rules on this point, but tests conducted by Agricultural Colleges, Government Experts and others have proved that a light coating applied by a Manure Spreader gives much better results than a heavy application by hand, thus causing a given amount of manure to cover much more land and acre for acre the land will yield more with the smaller amount applied with the spreader.

Top Dressing of Field Crops

The Manure Spreader has made possible the top dressing of field crops which in a majority of cases gives the best results; for the first rain carries the fertilizing constituents down into the soil directly to the roots of the plants, the top coating serves as a mulch to prevent drying out and also, in the case of fall sown crops, as a protection in winter.

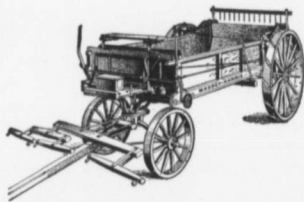
Manuring a Meadow

This can be successfully accomplished by using a Massey-Harris Manure Spreader. It cannot be done satisfactorily by hand as the spreading would be very uneven and many large chunks would be left to find their way into the hay, rendering it almost, if not quite, unfit for use.

On Pasture Land

A light coating of manure can be applied with this Spreader so as to greatly improve the pasturage without causing the cattle to refuse to graze over it as would almost surely result from hand spreading. Many pastures which were almost worthless have been reclaimed in this way.

Massey-Harris
Co. Limited
Toronto
Canada



**A \$3,000
Stock Book
Free**

International Stock Food

THREE FEEDS FOR ONE CENT

Will save you money over the ordinary way of feeding.

Will keep your stock in better condition.

Is equally good for horses, colts, cows, calves, hogs, pigs, sheep, lambs, etc.

Is absolutely harmless even if taken into the human system.

Is sold on a cash guarantee by over 125,000 dealers.

COLORED SPEED PICTURE OF
DAN PATCH, 1:55. CRESCUS, 2:02 $\frac{3}{4}$.

MAILED ABSOLUTELY FREE.

We have just published a large colored lithograph showing Dan Patch and Crescus in a fast finish down the stretch. It was made from life, and shows both of these magnificent animals in their natural colors. If gotten out in a small edition it would sell for \$2.00. We will be glad to mail it to you free, postage prepaid by us, if you will write us at once, answering the following question:

1st—Name this paper. 2nd.—How many head of live stock do you own?

Picture will not be mailed unless you answer these questions.

International Stock Food Co., Toronto, Canada

King Emerson may not be a good Monarch, but he is destined to become a great politician—At present he looks after the College rinks.

He was returning from the Royal City skating rink in prohibited hours. Being of portly build, he failed to escape the eagle eye of the Dean. Mr. Emerson you've been down to the rink? Yes sir, and I've got it in good shape for to-morrow. I wish it were a covered rink—Good night.

G-G-Good n-n-night!

◇ ◇

Mr. Le Drew (Public Speaking)—A man could make a speech on waiting for the car.

Orser—How long would it take him to make a speech if he had just missed the car?

Mr. Le Drew—He would be speech less.

GASOLINE ENGINES

2 $\frac{1}{2}$ and 4 $\frac{1}{2}$ H. P.

**Made Right
Right Materials
Right Price**

No Fan, No Tank, No Freezing, No Packed Joints. We are making such an engine. Especially adapted for farm purposes.

Write for Catalogue 16G.

**Scott Machine
Company, Ltd.**

B. H. HIGGINS, Secretary

LONDON, ONTARIO.

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AN INVESTMENT as well as PROTECTION

So says the FARMERS' ADVOCATE in advising every up-to-date farmer to carry some form of Endowment Insurance.

The Endowment Policy, after *three years*, has an actual *Cash or Loan Value*.

The Endowment Policy protects both your family and yourself, and at the same time provides a fund for use in need at any time after three years. Secure information immediately.

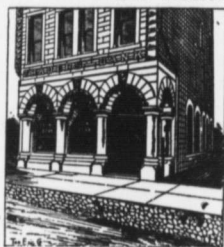
The Manufacturers Life Insurance Co'y

"No better life company in Canada."

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ASSETS OVER THIRTY-THREE MILLIONS (\$33,000,000).

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