

# The JOURNAL of AGRICULTURE AND HORTICULTURE

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Number 8



SKIING IN THE LAURENTIANS

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THE PROVINCE OF QUEBEC.

# Cream Separator Facts Worth Thinking About!

It is not enough to buy a cream separator that skims *fairly clean* and that runs *fairly easy*—you want one that gets *all* the butterfat down to the last drop and that runs so easily that a child can turn it. In addition, you must get construction that makes many years of good service possible.

In recent tests, a well known cow testing association found it a common occurrence, on average farms, for *out-worn, poorly constructed, poorly cared-for separators to waste \$25 worth of butterfat every month. Think of it, \$300 wasted in a single year!* If the machine you are using is failing you in such a manner, you cannot afford to operate it a single week longer, regardless of the so-called "bargain price" you may have paid for it.

It is unnecessary for you to suffer such butterfat losses. You can escape them by throwing out the wasteful machine now and replacing it with a new, efficient McCormick-Deering Ball-Bearing Cream Separator. These modern, easy-running separators represent genuine economy. From the viewpoint of long life, easy-turning, and close-skimming, they outrank all others. You need one on your farm!

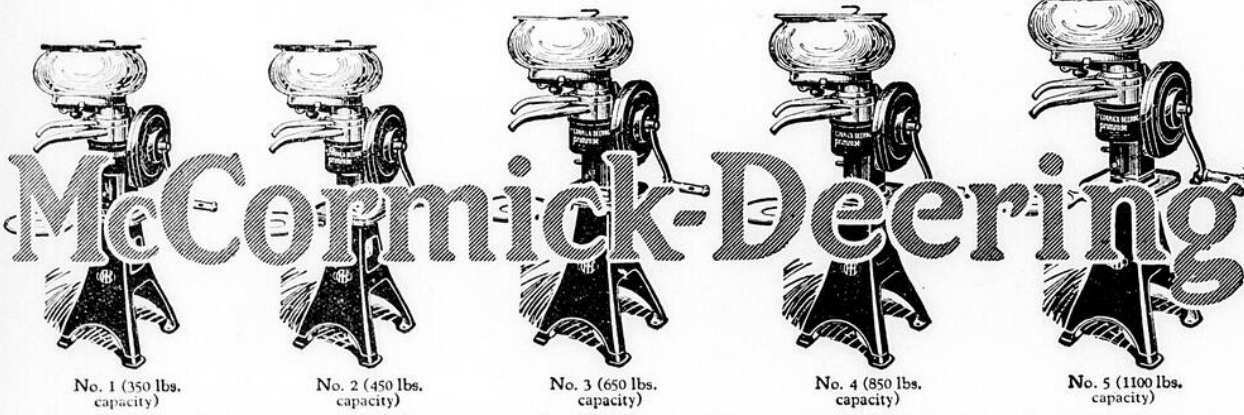
If ready cash is not plentiful, ask our agent for his liberal terms. Let a McCormick-Deering Primrose earn bigger cream profits for you and apply the extra dollars on the easy payments the McCormick-Deering agent will offer you.

*There are five popular sizes. Ask the McCormick-Deering agent about the size best suited to your herd.*

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CANADA



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No. 3 (650 lbs. capacity)

No. 4 (850 lbs. capacity)

No. 5 (1100 lbs. capacity)

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Clip cows. More milk, richer milk and clean milk. Pays big returns. Clip with

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World's Largest Makers of Clipping and Shearing Machines. Complete Catalog on Request.



### For Country Homes

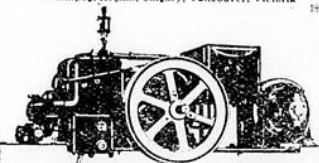
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The Bank of Montreal began business in 1817 with a capital of \$350,000. For over a century it has followed a conservatively-aggressive policy. Today its capital and reserve fund total \$54,500,000 and its total assets are in excess of \$650,000,000.





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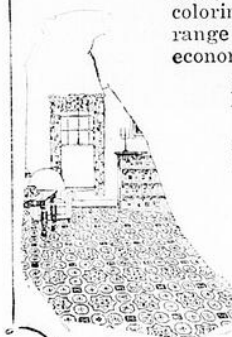
*both Durable and Attractive,*

**D**OMINION Linoleum has long won favor on the farm by its remarkable wearing qualities. Scraping or scuffing of footsteps cannot hurt it; heavy furniture may be moved over it at will. For years and years it wears with lasting satisfaction.

Turn over any piece of genuine Dominion Linoleum or Dominion Linoleum Rug and see for yourself the secret of this durability—the strong canvas back that holds and binds the linoleum itself into a firm, compact, time-defying floor covering.

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Many attractive patterns and colorings lend variety to your range of selection. Beauty, economy and less work are assured with Dominion Linoleum and Dominion Linoleum Rugs. Why not adopt them for your home!



Always turn over the corner of Dominion Linoleum and Linoleum Rugs. The genuine have a canvas back which is your guarantee of years of service. See also the Dominion trade mark on the face of every rug and on piece goods as well.

Visit your Dealer to-day and note the moderate prices. Send us your name and address and we will mail you an attractive rug folder in four colors. Address Dominion Oilcloth & Linoleum Co. Limited Montreal

You are deeply interested in the increase production of your farm. You must then keep yourself well posted as to the best means to do it. The Journal of Agriculture contains valuable information in every issue and it costs only \$1.00 per annum. Send your subscription to the Director of the Journal of Agriculture, Legislature Building, Quebec. On request we send a sample copy.



## Order Your Farm Help Now

IN VIEW of the great demand for farm help existing in Canada, the Canadian Pacific Railway will continue its Farm Help Service during 1924 and will enlarge its scope to include women domestics and boys.

THE COMPANY is in touch with large numbers of good farm laborers in Great Britain, Norway, Sweden, Denmark, France, Holland, Switzerland and other European countries and through its widespread organization can promptly fill applications for help received from Canadian farmers.

In order to have the help reach Canada in time for the Spring operations farmers needing help should arrange to get their applications in early, the earlier the better, as naturally those applications which are received early will receive first attention.

Blank application forms and full information regarding the service may be obtained from any C.P.R. agent or from any of the officials listed below. THE SERVICE IS ENTIRELY FREE OF CHARGE.

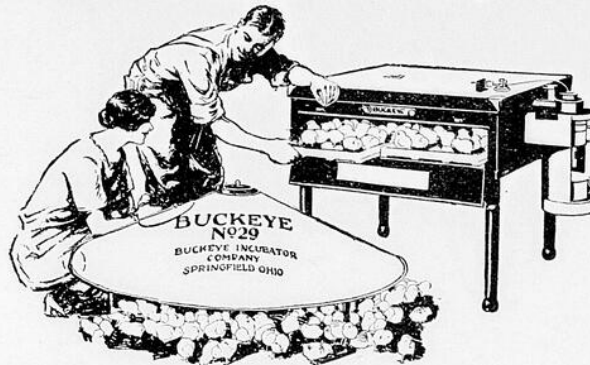
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Buckeye Incubators hatch 175 million chicks a year — bringing forth the finest, healthiest chicks. And more than 150 million chicks a year are raised by the Buckeye System of Colony Brooding — the system which is making big profits for Buckeye owners.

"How can I save my chicks from dying in the shell?"

"How can I prevent the frightful mortality due to faulty brooders?"

The Buckeye "Reason Why" Catalog answers these vital questions and many more. It tells why Buckeye Incubators hatch every hatchable egg, with hardly a weakling among them. And why Buckeye Colony Brooders raise them all to maturity.

Send for new catalogs. If interested in Blue Flame Brooders, send for Catalog No. 24; or in Coal-Burning Brooders, No. 36; Buckeye Incubator Catalog No. 48 tells how to grow more and better chicks.

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## Whiter Teeth in 10 Days

Make this free test. Combat the film



This is how countless people get the whiter teeth you admire. They combat the film that makes teeth cloudy. Millions do it daily. And so will you when you make this test and see what it means to your teeth.

### It hides the luster

Film is that viscous coat you feel. No ordinary tooth paste can effectively combat it, so much of it remains. Soon it becomes discolored, then forms dingy coats. That is how teeth lose their beauty.

Film also ruins teeth. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay. Germs breed by millions in it. They, with tartar, are the chief cause of pyorrhea.

**PROTECT THE ENAMEL**  
 Pepsodent disintegrates the film, then removes it with an agent far softer than enamel. Never use a film combatant which contains harsh grit.

Few escape such troubles when they brush teeth in the old ways.

Dental science has now found two ways to fight that film. One disintegrates the film, one removes it without harmful scouring.

Able authorities have proved these methods effective. A new-type tooth paste has been created to apply them daily. The name is Pepsodent. Leading dentists everywhere advise it. Now careful people of some 50 nations use it every day.

### Watch it act

Pepsodent also multiplies the tooth-protecting agents in saliva. Every use brings these combined results which mean so much to people.

Send the coupon for a 10-Day Tube. Note how clean the teeth feel after using. Mark the absence of the viscous film. See how teeth become whiter as the film-coats disappear.

You will always be glad that you made this test. Cut out coupon now.



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 Only one tube to a family

# Proud of his Wife



**F**ROM across the room you see them. She, poised — confident; warm cheeks and slim shoulders; the woman clever enough to stay young with her husband. He, with pride of possession in every unconscious action; the husband who is proud of his wife.

Yet how few women realize this simple subtlety of life! Too many of us believe the need of beauty caution cases at the altar.

Youth! Enchantment! The radiance of school-girl days. We need no longer lose them.

The means are simple, as millions will tell you — just soap and water; the balmy lather of palm and olive oils as embodied in Palmolive.

#### *The correct method*

Use powder and rouge if you wish. *But never leave them on over night.* They clog the pores, often enlarge them. Blackheads and disfigurements often follow. They must be washed away.

Wash your face gently with soothing Palmolive. Then massage it softly into the skin. Rinse thoroughly. *Then repeat both washing and rinsing.* Ap-

ply a touch of cold cream—that is all. Do this regularly, and particularly in the evening.

#### *The world's most simple beauty treatment*

Thus in a simple manner, millions since the days of Cleopatra have found beauty, charm and Youth Prolonged.

No medicaments are necessary. Just remove the day's accumulations of dirt and oil and perspiration, cleanse the pores, and Nature will be kind to you. Your skin will be of fine texture. Your color will be good. Wrinkles will not be the problem as the years advance.

#### *Avoid this mistake*

Do not use ordinary soaps in the treatment given above. Do not think any green soap, or represented as of palm and olive oils, is the same as Palmolive. Palmolive is a skin emollient in soap form.

And it costs but 10c the cake! — so little that millions let it do for their bodies what it does for their faces. Obtain a cake today. Then note what an amazing difference one week makes.

*Palm and olive oils —nothing else—give nature's green color to Palmolive Soap.*

*Note carefully the name and wrapper. Palmolive Soap is never sold unwrapped.*

*Volume and efficiency produce 25c quality for only*

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## EDITORIAL COMMENT

### Notes by The Way

ANOTHER good thing about the radio is that it clears the rural phone line at night in those districts where "receiving sets" are owned in any considerable numbers. For, after all, the news that one hears over the rural phone must soon become monotonous. The habitual listener-in must soon grow weary of the interminable discussions between Mrs. Brown and Mrs. Fogerty on their relative progress with the family washing, or baking, as the case may be. But with the radio the ear-piece horizon is widened—the sixth line gossip gives way to prohibition speeches and bedtime stories from New York and Pittsburg; the report of the Ladies' Aid Society, as retailed in terms of dresses by one who was there, is found to have less punch than the society editor's talk on what they are wearing this season on Fifth Avenue. Even the details of Mrs. Gumper's recent illness fail to hold the audience as they once did. All who have the opportunity are busily turning knobs—anxiously endeavoring to get Kansas City, or Hollywood. And while they are thus employed we have a chance to use the line.

Our greatest National asset is White River, Ontario. A little railway hamlet, situate somewhere on the north shore of Lake Superior, and with a population of about zero, White River systematically corrals all records for low temperatures made in other than Arctic circles. When the mercury in Montreal hovers near the freezing point and we begin to debate the question of double windows, reports come from White River of three feet of snow; and when we shiver and shovel coal to meet the demands of zero weather, we read of "60 below" at White River and are comforted. Thus this little railway "tank town" on the Height of Land makes for National optimism; it is our universal excuse for saying: "Well, it might be worse!"

There are a couple of series of articles running just now in *The Journal* that we think merit a word of commendation. The first is that dealing with the feeding of livestock. The articles in this series are being prepared by L. H. Hamilton, of the Animal Husbandry Department, Macdonald College. Mr. Hamilton has recently returned to the college after spending a year at the University of Wisconsin taking advanced work in nutrition. While at Wisconsin he had the advantage of being able to work under Prof. Morrison, of "Feeds and Feeding" fame. What he is now attempting to do is to give in half a dozen short articles the underlying principles of nutrition, the balancing of rations, and the most economical use of feeds. The first article, on the principles of feeding as applied to livestock, appeared in our January issue; the second, giving in non technical terms the scientific basis for balancing rations, appears in this number; while during the next few months he will take up specifically the problems of dairy cattle feeding, swine feeding, sheep and horse feeding. Farm grown feeds will be included to the fullest possible extent in the rations submitted—and the economy factor will be kept constantly to the fore.

The second series, of which the first article will be found in this issue, will deal with the subject of home beautification. This subject is being taken up, with particular reference to our farm homes, by M. H. Howitt, of the Horticultural Department, Macdonald College. Mr. Howitt also has recently completed a year's special study in his chosen work, spending last year in the Department of Landscape Architecture at Harvard University. The plan to be followed by Mr. Howitt calls for a general article

on planning the homestead—which will be found elsewhere in this number of *The Journal*; an article in March which will give specific directions in regard to the arrangement of shrubs; while planting operations will be dealt with in April, pruning and general care of the Shrubbery, etc., in May, the uses of perennials in June—and so on. Anyone who has had a chance to see and compare well planted homes with the bare dooryards and unattractive houses that are so common in most of our rural districts, will be aware of the value of such specific information as will be given in M. Howitt's articles—if it be applied.

Our recommendation in connection with such series of articles is that those who are particularly interested in following a given series might do well to clip these as they appear, and keep for future reference. The articles by Mr. Hamilton, for instance, offer a good understandable short course in the science and practice of feeding farm animals. The articles by Mr. Howitt will be found extremely useful by the man who has decided to beautify the grounds about his home—giving as they do such specific details as varieties of plants that may be used, arrangement, and subsequent care. If the reader is desirous of clipping still more articles from our pages we should recommend him to turn the points of his scissors in the direction of the Editorial Page. We have found that editorials make excellent shaving paper.

Since our last number of *The Journal* was issued, the Province of Quebec has suffered the loss of its lieutenant-governor, the Hon. Louis Philippe Brodeur, whose death occurred on the second of January, just two-months after he had been appointed to the position of chief executive of the province. One of the best known judges of the Supreme Court of Canada, before his appointment to Spencer Wood, the late lieutenant-governor had made a host of friends both in public and private life, and his death is sincerely mourned.

The new lieutenant-governor, appointed to replace the late Hon. Mr. Brodeur, is the Hon. Narcisse Perodeau, who has for some years been Minister without Portfolio in the Taschereau Cabinet, and leader of the Government in the Legislative Council at Quebec. Hon Mr. Perodeau is very well known throughout the province both as a successful practitioner of law, and as Professor of Law in the University of Montreal. He has been a member of the Legislative Council since 1897, and his appointment to the lieutenant-governorship on the 8th of January is a popular one.

At the Ottawa Winter Fair, held last month, Quebec livestock again gave good account of itself. In exceptionally keen competition, Royal Master, for R. Ness & Son, Howick, led the aged stallion class in Clydesdales, while J. E. Arnold & Son, Grenville as usual carried off most of the honors in Percherons. In the dairy cattle section R. R. Ness & Sons, Howick, claimed their share of awards in the Ayrshire young bull classes—the only classes in which they exhibited; while entries from the Raymondale Farm, Vaudreuil stood well up amongst the winners in the Holstein classes.

A new feature introduced at the show this year was the judging of all dairy cows by a system of scoring in which both production and conformation were taken into account. All cows entered in the breeding classes were first made to compete in a three-day milking contest, then taken into the ring and judged for conformation, and the two scores totalled. This system was first introduced by Ayrshire breeders in Scotland, when it was made the basis of judging at the "New Show" held at Ayr a year or so ago.

### The Sale of Gold Bricks

THE greatest profit-making enterprise in this as in all generations is the selling of gold bricks. There are, of course, occasional spectacular fortunes achieved in other ways, but for the steady influx of easy dollars over a long period of years there is no scheme of wide application that can compare with that of accepting the savings of a credulous public.

Thus it is that tens of thousands of pink-faced men in matty suits and bow ties reap handsome livings through the sale of prettily engraved, but totally worthless, stock certificates to a public that has no earthly need of such paper; and that millions more support expensive wives and toy dogs by manipulating the pea and shell game at our country fairs; whilst the best pews in our most luxurious churches are rented with money that magically appears from nowhere, after the small investors have been frozen out of the market.

Every once in a while a great wail goes up from the shorn lambs. Rural clergymen who have purchased building lots by mail in one of our western cities are pained and surprised when they find that these lots are located in sections that have not yet been thrown open for homesteading—and they write to the newspapers about it. And knowing youths who have set out to beat the man with the sleek black moustaches who has opened up a three-card Monte game, get all excited and spoil their pretty voices with loud cries of "Robber! Robber!" as they see the moustached man fold his little table and melt into the crowd—with their week's wages.

But it is not the agility of the midway man, nor the extraordinary plausibility of the oil-stock salesman's conversation that makes of the hokus-pokus game one that endures from generation to generation. It is the fact that there are so many boobs in the world. If we had no boobs we should have no bucket-shops, no crown and anchor boards, no subscription agents. And boobs are all persons either who think they know a thing or two, or who will take a tip from a friend.

No one is better qualified to discuss staged games and their effect upon the victim than are we—particularly their effect upon the victim. For we are the original "easy mark". Our life has been spent in the fruitless purchase of tickets in church raffles, in abortive attempts to win clocks and baby dolls by encircling square blocks with wooden hoops that apparently had shrunk—if indeed they ever had been large enough to fit said blocks—or by essaying with baseballs to knock from a shelf cats whose tails had been nailed down by cautious midway hands, in the luckless placing of our money on the "red" in games where marbles roll down through miniature forests of little pegs to drop finally into white or blue receptacles at the bottom—but never by any chance into the red.

Always after we have been bitten by the hand upon which we have attempted to feed we repeat the amateur's creed of never again. But always we run across just afterwards a game that looks so simple that we hide our face in shame as we pass over our money for the chips. And always we come away sadder but more foolish.

But the big gambling is not done at the midway stall. Nor do the bets made at the races cut any great figure in the financial transactions negotiated by the firm of Boobs Inc. In each of these cases the victim walks into the trap with his eyes more or less open. He knows, although he may not admit it even to himself, that he is gambling and that he runs a great risk of loss. Where the big cheques

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AND HORTICULTURE

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are passed over, and where the boob is seen at his best, is on the stock market. Here the big fellows may recognise the spirit of gamble—but to the boobs the possibilities of anything save large profits and affluence, with its accompanying motor cars and golf club memberships, never enter their heads. They are always betting on a sure thing. They always have their information direct from a friend who works in the bank that handles the account of the company whose shares are due for a ten point rise.

We have many friends and acquaintances. They are all hard up. We never meet any of them without having to refuse a request for the loan of five dollars. Yet we cannot recall a single one who has not, at some time or another, assured us that he was just about to make a killing on the stock market, and invited us to step in and get our share of the melon. If we had not accepted their invitations we might now be able to oblige them with the five spot.

Norris Hodgins.

## A Brief Comparison of Some Silages

At the Central Experimental Farm, comparisons of the feeding value of the three silages—oats, peas and vetch, sunflower, and corn, showed the cost of product on of these stored in the silo to be \$5.60, \$1.80 and \$2.95 per ton respectively.

In the first part of the experiment, corn silage produced 4% more milk at 13.5% less cost and 3.7% more fat at 12% less cost than did the O. P. V. silage. In the second part of the experiment, corn silage produced 5% more milk and 3.8% more fat than the sunflower but the latter produced both milk and fat a little cheaper. Taking the corn silage as a standard, and valuing it at the cost of production, the relative values of O. P. V. silage and sunflower silage were \$2.88 and \$2.76 per ton, respectively. The high cost of production of the O. P. V. silage is due to the low yield per acre. In the case of the sunflower silage, the cost is low, due to the high yield, but a large percentage of this extra yield is water. Calculated on the basis of the dry matter, corn and sunflower silage would cost about the same. Sunflower silage, with its excess water, freezes badly in winter, a very undesirable thing, while O. P. V. silage freezes little, if any making it easy to handle. Neither O. P. V. silage nor sunflower silage are as palatable as corn silage, but

the cattle ate both, once they became used to them. Corn silage still holds premier place, having the most advantages and the fewest disadvantages, but sunflower silage and O. P. V. silage are eco-

nomical feeds where corn silage can not be grown.

GEO. W. MUIR,

Animal Husbandman,  
Central Experimental Farm.

# GOVERNMENT

By Dr. H. D. Brunt

## 1. FRANCE

WE purpose, in this and several succeeding articles, to give short descriptions of foreign governments. The war has taught us, as has nothing else in the past hundred years of international interdependence, how little we know and understand of other peoples. Perhaps a slight knowledge of their government methods may help this understanding process.

The "Second Empire", that is, the government of Napoleon III (nephew of the great Napoleon), came to an end on Sept. 4th, 1870, after the Franco-Prussian War. France was then declared a Republic under the executive control of a President.\*

The Law-making power is vested in a Chamber of Deputies and a Senate.

The Chamber of Deputies corresponds to our House of Commons. The members are elected for four years by manhood suffrage. But no citizen can vote while in actual military service, a service binding upon every normal male. The manner of election is "Scrutin de Liste", that is, each elector votes for as many Deputies as the Department (see later) has to elect; and Proportional Representation has been introduced whereby the voter puts those for whom he votes in an "Order of Preference".

The chamber is composed of 610 Deputies, and is split into a number of parties—Republicans of the left, Progressives, Social Radicals, Action Libérale, Unified Socialists, Radicals, Conservatives, Republican Socialists.

\*Note — It would be well to recall the differences between Executive, Legislative and Judicial Functions as explained in our series of articles, just closed, on the Government of Canada.

The Senate is the second chamber in the Legislature. It is composed of 314 members, elected for nine years, one third retiring every three years. In this it resembles the American Senate (elected for six years, one third retiring every two years), while the members of the Canadian Senate are appointed by the Government for life. Unlike the American senators, who are elected directly by the voters, the French senators are chosen in each Department by a special electoral body made up of delegates from commune councils and Deputies and Councillors and other representatives in each Department. The Senate is divided into almost as many parties as the Chamber of Deputies.

Laws are made in much the same way as in the Canadian Parliament—financial bills must originate in the lower chamber.

The Senate also acts as a High Court of Justice to try persons accused of treason, that is, attempts against the safety of the State or its form of government.

The Executive or Government is made up of:

1. *The President*: elected for seven years, but not by the people. He is elected by a majority in a National Assembly composed of the Senate and Chamber of Deputies. Nominally he rules the country; but like King George, he really acts upon the advice of the Premier and Cabinet. His powers are mentioned here, but the reader must remember that they are really the powers of the Premier and Cabinet.

He proclaims and signs laws made by the Legislature; selects a Cabinet from the two Chambers; appoints to all higher civil and military posts; has the right of individual pardon (his own right); is responsible to Government or People only in case of high treason; concludes all foreign treaties; declares war with consent of both Chambers. Every act of the President must be countersigned by a Minister. This is the real check on his power. He has but few of the real powers of the American President.

2. *Premier*: as in Canada he is the leader of the strongest party in Legislature. He selects his Cabinet, with co-operation of President.

3. *Cabinet*: composed of Ministers, each head of some great service of the state—Foreign affairs, Justice, Finance, Marine, Instruction, Commerce, Agriculture, Colonies, War, Labor, Public Works, Hygiene and Social assistance, Liberated Territories.

The Premier and Cabinet rule so long as they can control a vote of confidence in the Legislature.

Perhaps the most interesting part of the French system is its Local Government. France has the

most strongly and rigidly centralized government of any democratic country. In Canada, the municipalities and the provinces, within their sphere, are largely independent of the central government at Ottawa. In the United States the separate states jealously guard their individual rights and powers. In France, practically all power resides in the central government at Paris, through its system of local administration.

For this purpose, France is divided into ninety departments. All the ministries mentioned above—Justice, Agriculture etc.—have representatives in the department, and it is under a *Prefect*, appointed from Paris, whose powers are very great, all the greater because not always clearly defined. He has a Council, whose advice he takes, but is not bound to follow that advice. He represents the government at Paris—supervises the carrying-out of laws, issues police regulations, nominates subordinate officials, has under his control all officials of the State in his department.

There is a General Council (conseil general) which is elected by the people, one half every three years, one Councillor for each Canton. This Council deliberates upon all economic affairs of its department, decides upon the division of the taxes among the *arrondissements*, roads, normal schools, poor relief. The Prefect controls and the President of the Republic may annul their decisions.

It is the departments that the Deputies represent in the Chamber of Deputies at Paris.

Each department is divided into districts or *arrondissements*, of which there are 386 in France; each *arrondissement* is under a Sub-Prefect. Here, too, there is a Council (Conseil d'Arrondissement) elected by the people, one member for each *canton*. Its chief work, under control of Sub-Prefect, is to divide among the communes their share of direct taxation given to *arrondissement* by the department.

Still going downward, come the cantons, each made up of 12 communes. The Canton has but two purposes: to send a delegate to the *arrondissement* council; and to act as the sphere of a justice of the peace (*judge de paix*). There were 2916 Cantons in France before 1914.

But the unit of real local government, so far as it exists is the commune, already mentioned. In 1921, there were 37,963 communes in the 90 departments of France. Their size can be estimated by the fact that nearly all have each less than 1500 inhabitants, while nearly two-thirds have less than 500 inhabitants. Only about 140 communes have more than 20,000 inhabitants. One can see, therefore, that the communes correspond somewhat to our small towns and villages. It must be remembered, too, that village life is characteristic even of agricultural France for two reasons: first, it is an historical survival of the village-community of the Middle Ages; and many allotments are as small as 2 acres and even smaller.

Even here, however, appears the all-powerful hand of the Prefect of the department. The Municipal Council, of from 10 to 36 members is elected by Frenchmen of at least 21 years, who have lived for six months in the commune. The Councillors are elected for four years and by the *Scrutin de Liste*; that is, each voter votes for the entire number of members required. But every act of the Council must have the approval of the Prefect of the Council General, of the department, or in some cases of the President of the Republic.

This system constitutes the most highly centralized system of local government known to the writer. Whether it gives that training in citizenship so desirable in the democracy is left to the judgement of the reader. It may, however, cause some future political unrest. Alsace-Lorraine, from 1870-1919 a part of the German Empire, is now part of France, under the Minister of Liberated Territories. One great cause of discontent, during that period, was the very limited amount of self-government (autonomy) given Alsace-Lorraine by the German Imperial Government. Yet that self-government was very ample as compared with the power they will have as departments of France. The development may be worth attention of would-be statesmen in every country.

# Balancing the Ration

## The Second of a Series of Articles on Feeds and Feeding

By L. H. Hamilton, Animal Husbandry Dept., Macdonald College.

WE have seen in the previous article that certain food constituents are necessary for normal growth and reproduction. The placing of these together in the proper amounts and proportions so that an animal can be fed with the greatest economy is what we might call balancing our ration. This is the point where most people who have not a knowledge of feeds usually make some error which may be costly. A properly balanced ration for any class of stock must have in its make up the following essential features: 1. An ample supply of energy, which is derived principally from the carbohydrates and fats of the feed or the sugars, starches, etc. 2. An ample supply of good proteins, which are the flesh formers and in which some feeds are particularly rich. 3. Sufficient ash, which is necessary for bone formation and proper development. 4. A supply of vitamins, which are necessary for normal health and proper assimilation of the constituents. 5. It must have good mechanical features, and by this we mean that it must have bulk, succulence, etc., etc.

To arrive at some definite basis or standard upon which to work in comparing feeds a great amount of practical experimental work has been done. The testing of different feeds in different mixtures and in varying amounts with different classes of stock has taken place. Several standards have been set by different men working along these lines for the various classes of stock. This was a most natural result due to the fact that everyone has a method of his own for carrying out the work and also the incompleteness of the work in earlier times. Dr. Armsby for instance worked for a purely scientific point of view. Others relied more upon their observations in the practical feeding tests. The latter method has proved to be the best and of the systems Prof. F. B. Morrison's tables of requirements are most widely adopted and used. These tables or standards naturally vary with different classes of stock and also with the purpose in mind in feeding the stock; that is in fattening steers in a short period our ration would naturally differ from that where we were feeding for a longer time. The ration also for growing and fattening young stock and maintaining mature stock varies considerably in its make up. Due to lack of space at this time it is impossible to list this standard for the different classes of stock but as we go on the requirements for these various classes will be given and discussed.

There are a few things about this standard that will need some explanation. In the first place it designates the amounts of dry matter, digestible crude protein and total digestible nutrients required every twenty-four hours for each 1000 pounds live weight fed for different purposes. The dry matter is simply what is left after the water has been evaporated. The total digestible nutrients are found by adding the number of pounds of digestible crude protein digestible carbohydrates (which is the sum of the digestible crude fibre and nitrogen free extract) and 2.25 times the digestible fat. The number of pounds of digestible fat is increased 2.25 times because one pound of fat has 2.25 times the energy value of an equal weight of digestible crude protein or carbohydrate. The importance of the crude protein from the standpoint of its cost and feeding value was mentioned previously. The amount in any feeding stuff is found by chemical analysis. This amount of protein in relation to the carbohydrates and fat must always be borne in mind and it is the ratio of these two the proteins to the carbohydrates + 2.25 x the fat that is termed the nutritive ratio or it is the ratio between the protein and non protein constituents of the feed. It is from this relation that we speak of and classify feeds and rations into wide medium and narrow nutritive ratios. In so speaking we mean the proportion of protein to the non-protein that is contained in the feed or ration.

Knowing what an animal requires in terms of dry matter, crude protein and

total digestible nutrients and the composition or amounts of these nutrients that each feed contains, it is purely a matter of mathematical calculation to find out how much we should be feeding, where and in what constituents our present feed mixture is lacking, and with the prevailing prices of feed how it could be most economically supplemented.

As an example and simple explanation of just how this works out let us formulate a ration for fattening two year old feeder steers. The steers averaging 900 pounds when placed in the feed lot are to be fed a heavy fattening ration for 150 days so that they will gain in the neighborhood of 2.5 pounds per day. The Morrison standard for two year old steers on full feed is as follows.

MORRISON STANDARD FOR 2 YEAR OLD STEERS ON FULL FEED.

	Per 1000 lbs. live weight.			
	Dry Matter.	Min. of Dig. C. Prot.	Total Dig. Nutrients	Nutritive Ratio.
First 40-60 days	22-25	1.8-2.1	16.5-18.5	1:7.0-1:8.0
Second 40-60 "	20-23	1.8-2.0	16.0-18.0	1:7.0-1:8.0
Third 40-60 "	18-21	1.7-1.9	15.3-17.5	1:7.0-1:8.0

In computing rations for these steers the most accurate way is to figure out the rations on the basis of the average live weight of the steers during each period of fattening. If the steers weigh 900 pounds when placed on feed and gain 2.4 pounds per head daily their average weight for the first 50 days will be 1020 pounds; for the second 50 days 1140 pounds and for the last 50 days 1260 pounds. The standard requirements for each period on this basis is as follows.

REQUIREMENTS FOR STEERS AT DIFFERENT PERIODS OF FATTENING.

Av. wt. during Period.	Dry Matter	Dig. Crude Protein.	Tot. Dig. Nutrients.	Nutritive Ratio.
First 50 days 1020	22.4=25.5	1.84=2.14	16.8=18.9	1.70=1:8.0
Second 50 days 1140	22.8=26.2	2.05=2.28	18.2=20.5	" "

### Breeding Principles

A very excellent address, entitled PROBLEMS OF BREEDING FOR PRODUCTION, delivered by R. R. Graves of the U. S. Dairy Division before the World's Dairy Congress, has been appearing in recent issues of Hoard's Dairyman. In it Mr. Graves reviews breeding practices, and points out which of these are based on known facts and which on suppositions and theories. Space does not permit of our use of this address in full, but we are giving herewith a summary of Mr. Graves' conclusions, as prepared by the editors of Hoard's for publication in their own paper:

1. The inheritance of conformation, color, size, and fat test are well fixed for certain breeds and are practically pure where care has been exercised in breeding.
2. The producing capacity of animals is not a fixed inheritance character and is seldom found pure in dairy animals. Full sisters often show a difference in production of 4,000 to 6,000 lbs. milk, or more.
3. We do not yet have the facts on which to base the assumption that a large heart girth indicates superior constitution, that a large barrel means greater ability to digest large amounts of feed and convert it into milk, or that well developed milk veins are indicative of large flows of blood to the heart. Definite information on these points is now being sought.
4. A cow's inherent capacity to produce may be limited by poor conformation, but conformation alone will not tell us that a cow has the inheritance for production.
5. Selection of breeding animals on the basis of production records has brought improvement in production, but it can be further improved by consideration also of conformation. However, the number of animals having both production and conformation well established as inherited factors is very limited.
6. Breeding related animals is thought to produce greater uniformity in type and production. However, cross breeding of animals having the same inherent qualities should produce as good results.
7. Commercial practices have unduly emphasized the breeding of certain strains or families to a degree that may be injurious rather than helpful.
8. Evidence thus far secured does not indicate that close breeding is necessary to secure prepotency in sires. Indications are that line breeding is helpful largely because it emphasizes and insures certain production and type for breeding purposes.
9. By crossing inbred families we may expect to secure cattle of greater vigor, with some of the offspring superior in certain desirable characters to either of the parent families. In this way we may produce a new strain that will be more nearly pure for large production.
10. There is now being tried a big breeding experiment involving large numbers of animals that should prove of real value in solving some of the conflicting theories of breeding for large production. This work is being conducted by the U. S. Dairy Division, in co-operation with several of the state colleges and a few individuals.

Third 50 days	1260	22.7=26.5	2.14=2.39	19.5=22.0	" "
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The steers are to be fed all the mature corn silage and clover hay they will clean up night and morning, while corn will be fed as the chief concentrate with cottonseed meal to balance the ration. Two year old steers will eat 30-40 pounds silage at the beginning and less during the later stages. They will also eat from 3-6 pounds of hay. Let us start with 36 pounds of corn silage, 4 pounds of clover hay and enough shelled corn to bring the amount of total digestible nutrients up to standard. As shown in the table this will require 11 pounds.

TRIAL RATION FOR FATTENING 2 YEAR OLD STEERS FIRST PERIOD.

Feed.	Dry Matter.	Dig. Crude Protein.	Total Dig. Nutrients.	Nutritive Ratio.
Corn Silage 35 lbs.	9.20	0.385	6.20	
Clover hay 4 lbs.	3.48	0.304	2.04	
Shelled Corn 11 lbs.	9.84	0.825	9.43	
Total	22.52	1.514	17.67	1:10.7

This ration furnishes sufficient total digestible nutrients and agrees in dry matter but falls short in protein. As we wish maximum gains let us substitute 2 pounds of cottonseed meal for 2 pounds of corn and we will have the ration shown in the first division of the following table. This agrees with the requirements. In the same manner we formulate the ration for the remaining two periods bearing in mind that maximum gains is our object and that steers require less roughage during the latter stages.

RATIONS FOR FATTENING 2 YEAR OLD STEERS FOR FIRST, SECOND AND THIRD PERIODS.

Feeding Stuffs.	Dry Matter	Dig. Crude Protein	Total Dig.	Nutritive Ratio.
First 50 days.				
Corn silage 35.0 lbs.	9.20	0.385	6.20	
Clover hay 4.0 lbs.	3.48	0.304	2.04	
Shelled corn 9.5 lbs.	8.50	0.712	8.14	
Cottonseed meal 1.75 lbs.	1.62	0.648	1.37	
Total	22.80	2.049	17.75	1:7.7

Second 50 days.				
Corn silage 23.0 lbs.	4.96	0.308	7.36	
Clover hay 3.0 lbs.	1.53	0.228	2.61	
Shelled corn 13.0 lbs.	11.14	0.975	11.64	
Cottonseed meal 2.0 lbs.	1.56	0.740	1.85	
Total	19.19	2.251	23.46	1:7.5
Third 50 days.				
Corn silage 23.0 lbs.	4.07	0.253	6.05	
Clover hay 3.0 lbs.	1.53	0.228	2.61	
Shelled corn 16.0 lbs.	13.71	1.200	14.32	
Cottonseed meal 2.1 lbs.	1.64	0.777	1.94	
Total	20.95	2.458	24.92	1:7.5

These rations meet the standards in all particulars and will give good results in practice. When the prices for concentrates are comparatively high it may not be economical to feed so much grain or to strive for such gains and finish. However the object here is simply to show how this balancing and supplementing of rations is worked out.

In our next article we will discuss to some extent the economy of feeds for the dairy cow at the prevailing prices. We will also show how the ration for the cow producing milk is formulated. In this connection we will be glad to have anyone who is feeding cows send in the ration he is feeding and the prevailing prices of the available feeds and we can treat definite examples. All letters will be answered but only a couple can be used in the next article.

### Ayrshire Breeders' Activities and Outlook in Quebec

By J. A. Ste. Marie, B. S. A.

THE Ayrshire breeders as a class should have good reasons to be proud of the success that many of their fellow breeders and breed have obtained during the year. From the smallest to the largest fairs and from the Ormstown to the National and Royal show, the Ayrshire breed was a great center of attraction. Many of our fellow breeders, were able to capture in other provinces or in the United States, very high honours with their exhibit. To these advance guards of the breed go our best wishes. For, with these winnings, the wedge for more Ayrshire cattle goes forward and with all we should rejoice over such good work.

Quebec has never seen so much activity in Ayrshiredom as that witnessed in 1923 and this augurs well for the future. Very few herds of any importance are not now under the process of accreditation and most of the leading herds are accredited. A very notably increased number of cows have been entered in the Record of Performance test and many breeders are now making it their "Motto" to strive for a hundred percent R. O. P. herd in 1924. More Ayrshire breeders than ever have participated in the shows, Quebec Fair having a record number and what is a particularly healthy sign for the breed was the very high proportion of Ayrshire cattle at all the small or county fairs. Lastly, the start made in a few sections of the province in the organization of heifer and calf clubs by the Live Stock Branch, a new activity of unknown possibilities and value for the dairy breeds if generalized. In a word an Ayrshire wave is passing through the province, which should stimulate the faith of those already breeding Ayrshires and induce many good dairymen, who have so far been satisfied to work with common cows, to follow the footsteps of their more successful brother farmers, in buying a sire and a few females of quality as a start.

An increasing demand for more and better Ayrshires is bound to come sooner or later and it is up to the breeders to make it sooner and prepare to supply it with animals of quality. Quebec is a tremendously large province, it has over 125,000 farmers. Of this number, only 2000 approximately, are keeping pure bred dairy breeds. Of this number, a large proportion have but small herds. Further it is claimed by all who have knowledge of the Agricultural conditions that dairying is and will be the salvation of the Quebec farmers. Again, statistics also tell us that the average production of all the cows in Quebec is still below 4000 lbs. Hence, could there be a stronger argument to show that there is unlimited possibility for a square game and organized action in Ayrshire business? I say square game and organized action purposely. For, in the past and even now, too many purebred scrub males and females have been and are being sold to well intentioned farmers, which will not raise the standard of the 4000 lb. cow and this is not the way to induce faith in Ayrshires and cause other farmers to follow their neighbour's example who may have received a poor bull or cow.

Organized action must also be strengthened to keep up the propaganda work; to obtain all possible value of assistance money, donated by the Government; to prevent the loss of high quality animals and to help the out-of-the-way breeder who is doing good work.

In closing, if the breeders would allow me to make a suggestion, I would say, make a frame to be installed in a conspicuous place in your office or stable and write on it for the 1924 program of action: "A tuberculosis free herd, one hundred percent R. O. P. cows. No registration or sale for breeding of scrub males and females. More liberal feeding of young stock. Assistance to have calf clubs organized and attend a local or provincial show with an exhibit."

By the application of the above suggestion, the breeding of Ayrshires will be found interesting financially and otherwise and the Ayrshire cause will be well served.

(Canadian Ayrshire Review)

**Delicately Nurtured**—It was a hot day and seven cars were waiting their turn at a filling station. The last one was a steaming little 1915 Rattler, with six rattles and a bottom. Finally it got its turn (even a Detroit worm will turn) and the peevish attendant yelled:

"How many gallons?"

The driver of Lizzie held up one finger.

"Say," bellowed the attendant. "What are you tryin' to do? Wean it?"—*American Legion Weekly.*

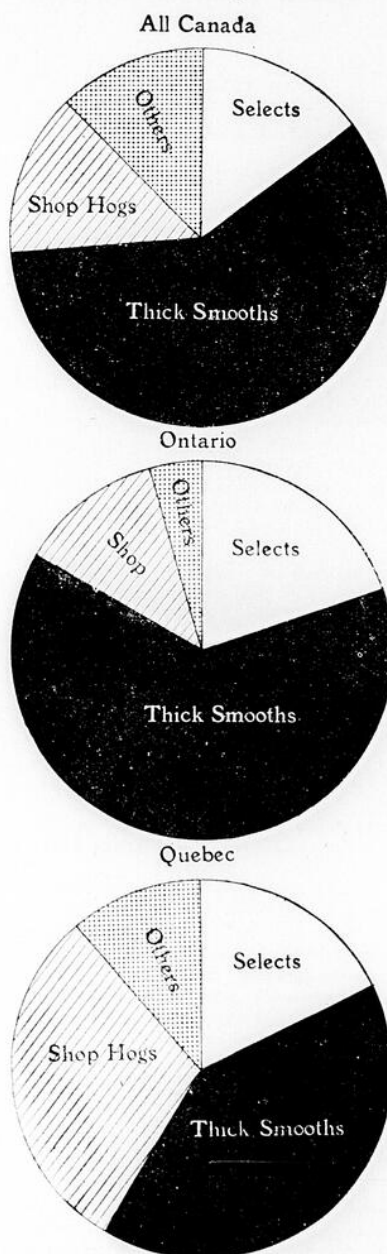
### Silage for Pregnant Ewes

SUCCULENT feeds, which are keenly relished by sheep, are valuable for their tonic and regulating qualities. Roots, such as turnips or mangels, are possibly the most satisfactory form of succulent feed, but they cost considerably more to grow and store than silage. It is sometimes more convenient and profitable to feed the latter, as it has been found that good quality silage, free from moulds and low in acid, can replace roots in the ration of the pregnant ewe if proper care is taken as to the amount fed. Some good legume hay should form the main part of the roughage, this to be supplemented with not more than two to three pounds per head per day of silage.

If the silage is from a well matured crop and consequently high in dry matter, the larger quantity may be fed. If from a green, watery crop with consequent low dry matter content, then less should be fed. Mouldy silage is more injurious to sheep than to other classes of live stock, so only silage free from mould should be fed. Corn silage is the best known and therefore most recommended for sheep, but other silages, such as peas, oats and vetch, clover or sunflowers may be used, though in the latter case, much smaller quantities would be advisable, owing to the high moisture content. Frozen silage should not be used as scouring and bloating may result. The reason that care must be taken in regulating the amount of silage or other succulent feed fed to pregnant ewes is that it is claimed that too much will cause weak, flabby lambs.

The ration of silage may be increased slightly after lambing as it will assist the milk flow and there is not then any danger of affecting the lamb.

### How The Hogs Grade



Of the 2,000,000 hogs graded throughout Canada from January to November, 1923, just about one in eight were "select bacon"; six out of every ten were "thick smooths"; and the other classes were in the proportions shown in the top circle. How Ontario and Quebec measure up to standard will be seen by the second and third circles, or put in percentages, they work out as follows: Select Bacon, Ont. 19.5, Que. 17.4; Thick Smooth, Ont. 64.2, Que. 42; Shop Hogs, Ont. 11.4, Que. 29.3; Others, Ont. 4.9, Que. 11.3.

### Quebec Jersey Jottings

By R. L. Gale,

Sec-Treas. Quebec Jersey Cattle Breeders Assn.

STANDING on the threshold of another year it is perhaps worth while to sit down for a moment's retrospection in connection with Quebec Jersey doings for 1923. We either progress or retrogress in this world. We don't stand still. Has the Jersey cause progressed then during 1923 in Quebec? We'll say it has! What then are the outstanding features, the "high lights" so to speak? Follows brief mention of a few:—

#### "MARTHA"

To our mind the outstanding event in the Quebec Jersey world during 1923 is the rise to fame of a new Canadian Champion. Eminent's Martha of St. Omer, an eight year old cow on March 16, 1923 completed a 365 day record of 19,051 lbs. of milk, 1002 lbs. of butter fat thereby becoming the Champion Jersey Cow of Canada in the production of both milk and butter fat. She was owned and tested by Maxwellton Farm of Ste. Anne de Bellevue, Mr. Gordon C. Poole, herdsman at Maxwellton Farm, having whole charge of the cow. By virtue of this record "Martha" was one of the famous exhibit of the eleven highest producing Jerseys in the world which was staged at the National Dairy Show in Syracuse, N. Y. in October, 1923. All hail to Martha!

#### "JERSEY CREAM"

From the Eastern Townships, the "Garden spot" of the Province, the flow of Jersey cream continues uninterruptedly and in ever increasing quantities to Montreal and the New England States. Mr. E. O. Baldwin of Coaticook, who milks some 80 pure-bred Jersey cows, has large Jersey cream contracts in Montreal including the Mount Royal Hotel; and Richmond Jersey, Inc., of Richmond, who, in addition to the breeding of Jersey cattle, have established a creamery on a Jersey basis, forward huge quantities of Jersey cream to New England.

#### JERSEYS AT FALL FAIRS

The breed was well represented at the different fairs, the Maplehurst herd as usual making its successful tour of the fair circuit while Richmond Jerseys had a couple of animals which got through to the "National" and secured high ranking there. It is interesting to note that Jersey exhibits are increasing in both quantity and quality at the country fairs. We have in mind the Ayer's Cliff fair especially. Not only were there half a dozen or more Jersey breeders staging exhibits with a total of some 50 Jerseys but the exhibits were of very good quality.

#### JUNE JERSEY JUBILEE AUCTION

The special feature of the 1923 June Jersey Jubilee held at Richmond Jerseys—was the Auction Sale of 9 pure-bred heifer calves, each donated by a different breeder. The calves thus disposed of brought a total of \$902.50 thus amply replenishing the exchequer of the Quebec Jersey Cattle Breeders' Association. This method of securing funds was so successful that it might almost bear repetition during 1924.

#### LONGEVITY OF JERSEYS

On December 9, 1923 the cow Melia Ann's Goldie—completed an R. O. P. Record of 11037 lbs. of milk, 516 lbs. of butter fat. What we wish to emphasize is that she was 13 years, 7 months old at the start of test. She is a large strong "pure St. Lambert" cow and is expected to exceed the above production on her next test which should be started shortly. Wilhelmina—seventeen years of age—has started what promises to be a very creditable R. O. P. Record. Jerseys maintain their efficiency to a ripe, old age. Both of these cows are owned and tested by Grayburn Farms, Waterville. In connection with the Grayburn herd it is perhaps worthy of note that in the 20 test cows at present maintained the four highest producing mature cows (five years old or over) have produced more butter fat each month since June, 1923 than the four highest producing mature cows of any other Jersey breeder on this Continent during the same months.

The above are a few of the 1923 Jersey happenings selected at random. We believe they denote progress. We believe 1924 will see more progress. At all events things point that way.

**A Justifiable Rebate**—A Scotchman went to the box-office after witnessing the new film.

"Will ye kindly retain me the amount of the amusement tax," he said.

"Why?" asked the manager.

"I wasna amused," said the Scotchman.— *The Grain-diggers' Gazette.*

## Dominion Cheese and Butter Contests

A report has been made by Dominion Dairy Commissioner on the results of Educational Cheese and Butter Scoring contests conducted by his Branch in 1923. The contests extend from May to October inclusive. The provincial authorities name the factories, selecting a different one each month. Fifty-six cheese factories in all participated in the contest, the provinces represented being Ontario, Quebec, New Brunswick, Prince Edward Island, and Alberta. Quebec topped the score for flavour with an average total of 94.66. Ontario coming next with 94.27, then Prince Edward Island with 93.62, New Brunswick with 92.96 and Alberta with 92.06. Quebec also stood at the head for workmanship, New Brunswick, Prince Edward Island, Ontario, and Alberta coming in the order named, but the difference between each was slight. For texture, closeness, colour and finish there was little to choose between Ontario and Quebec, although the latter had the most samples passed for closeness, the other provinces running New Brunswick, Alberta, Prince Edward Island. The report gives the result from the make of each individual factory taking part and also as regards the milk at setting, the rennet used, cutting the curds, temperature, salting, averages of rescoring per province, etc.

So far as butter is concerned similar particulars



This is the day of the small meat carcass—and especially of the small lamb. For two years in succession the grand championship for best carload of market lambs at the Chicago International Live Stock Exposition has come to Canada—on South-down lambs. In 1922 the champions averaged 87 lbs.; in 1923 they averaged 92 lbs. What the market will pay most for today is the 80 lb. lamb, similar to those shown in the above lot, which lot, by the way, topped the Toronto market for 1923.

are given. Forty-nine creameries entered the contest, distributed as follows: Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and Nova Scotia six each; British Columbia and New Brunswick five each and Prince Edward Island three. The samples from Manitoba and Nova Scotia were all special grade. Saskatchewan and Quebec each had five of that grade; Alberta and Ontario each four, New

Brunswick three, British Columbia two, and Prince Edward Island one. The other samples were all first grade, excepting one each from Quebec and Prince Edward Island, which were second grade. Nova Scotia, Saskatchewan and Quebec each had an average score of 42 or over for flavour, Manitoba, Ontario, Alberta, and New Brunswick an average of over 41; British Columbia, 39.60, and P. E. I., 38.90.

# STERILITY of DAIRY CATTLE

By Dr. R. L. Conklin, Macdonald College, Que.

IF a dairy cow is to be of value to the farmer she must function properly in all phases connected with reproduction. A great flow of milk for one year, thereby producing phenomenal records is not sufficient. Unless an animal is bred and conceives at least once in 12-16 months, the cost of keeping her will be greater than the profit realized from her previous period of lactation.

The average farmer does not seriously consider sterility as a matter of financial loss to him. His state of mind is truly a happy one, for he easily forgets calves born dead or which die young; he overlooks the sterility of a certain few cows in his herd, "they are farrow". Animals which have been good producers but which are now placed in this category are kept in the herd through sympathy, where no veterinary examination of the generative organs is made; the farmer never discovers the reason for a cow going "farrow". He does not know exactly what he means when he speaks of a cow as "farrow". All that he knows is that she apparently is not pregnant and that he has little chance of getting her "settled".

The breeder of valuable purebred stock must have some satisfactory evidence that an animal is absolutely sterile before sending the beast for slaughter. Why should the average farmer turn away good producers without other than circumstantial evidence? The study of the generative organs and treatment of diseased conditions of these parts has advanced greatly within the past few years, yet the work has not been pushed in Canada.

What is the definition of sterility or the condition existing in the female rendering her "farrow"? Any condition producing the absence of generative function in male or female may be called sterility. This condition may be either temporary or permanent. The former may be alleviated by proper handling by the professional man (Veterinarian), and the latter may be removed early by a diagnosis being made by one able to do this work.

Some of the causes of sterility may be found in (a) infections of the uteri and other parts of the generative organs during parturition (calving), (b) attempts to remove a retained afterbirth, (c) tumors of the vagina, (d) cystic ovaries, (e) persistent Corpus Leutea, (f) cervicitis and any specific inflammation of a single part of the organs. Lack of proper development of the organs of the young animals must also be considered.

An animal may be temporary sterile when cysts develop on the ovaries. These cysts are small "pockets or balls" of fluid formed on or in the ovaries. Their presence may result in the failure of the animal to "settle". They are very persistent things to deal with and the animal may require several treatments before she finally conceives. Cysts may be diagnosed by manipulation of the ovary through the rectum.

Persistent corpus leutea prevent an animal from breeding, and usually when present the animal fails to show periods of "heat". This body is formed in the ovary after the animal conceives and usually atrophies and disappears at times of freshening. When the corpus leutea does not atrophy it is called

## Reproductive Diseases of Dairy Cattle

In this article on STERILITY OF DAIRY CATTLE Dr. Conklin has outlined the various causes that may contribute to failure of cows to conceive—a source of great annoyance and expense to dairy farmers everywhere—and has treated at some length one of the most common of these, Cervicitis. In subsequent articles Dr. Conklin proposes taking up the other common causes of sterility.

persistent and is a cause of many so-called "farrow" cows. Often one may find a dead, mummified fetus in a uterus where a disturbance in breeding history appears. Cows carrying a body of this description fail to show periods of "heat", yet have the history of having been served at a previous period. Diagnosis of this condition can be made through rectal palpation. These animals do not need to be destroyed for the expulsion of the "corpus leutea" usually brings about the evacuation of the fetal cadaver without serious consequences.

### CERVICITIS

One of the greatest causes of sterility in cattle is that produced by cervicitis. By cervicitis is meant an inflammation of the opening of the "womb". The causes of such a condition are many and should be made a careful investigation of the breeding history.

Cervicitis undoubtedly is the most costly of all breeding diseases. Any injury to this portion of the generative system acts as an agent for bacterial invaders. Once bacteria enter a wound of the cervix and produce an inflammatory condition of the part, conception is retarded, if not prevented for ever.

The writer has recently had the opportunity of seeing and examining two valuable animals in which cervicitis had been produced as the result of ignorance and mal-practice. In one case the cervix was said to have been "grown-up", so that the animal could not conceive. In the attempt to dilate the cervix a sharp wooden wedge was employed but as this instrument failed of its purpose a sharp pointed iron was used. There is no doubt as to whether or not an opening of the cervix was obtained by this method. The animal remains to exhibit the evidence in the form of an advanced cervicitis.

A second case in which an attempt had been made to dilate the cervix, resulted in adhesions of the vagina. This animal was a valuable purebred Holstein cow in a herd where abortions had occurred. The instrument employed in this case consisted of a portion of a fork handle with a sharp point. Needless to say the treatment resulted in rendering the animal useless as a breeding proposition.

Cases of inflammation of the cervix when taken early may respond to local treatment consisting of rest and douching. Rest is perhaps more essential in these cases than in many cases of lameness. Attempts at breeding the animal only aggravate the condition. It is found that the opening into the uterus is usually nearly occluded, if not entirely

so, by the extent of the swelling about the cervix. In addition to this enlargement of the part due to inflammation there is usually an exudation of a thick, stringy, viscid mucus within the canal which would prevent the entrance of the spermatozoa into the uteri. It will therefore be adding injury to an injury to allow a bull to serve a cow in this condition. No person would appreciate the irritation of an infected, tender, wounded area upon the surface of the body, so why not give the animal a little consideration relative to a more vital portion of her anatomy.

The douching of an injured cervix should be carried out only under direction of the attending Veterinarian. For this work either potassium permanganate or 2% Lugol's Solution of Iodine may be used. The equipment necessary is not expensive, since a clean funnel and a piece of soft rubber tubing will do very nicely. The layman should not attempt to insert his hand within the genital tract since he does not understand the anatomy and physiology of the parts well enough to avoid injury. For the douching of the cervix of the animal, after proper preparation, the tube may be inserted into the vagina for 6-8 inches. The solution used should be about blood heat and "clean". Douches may be given as frequently as thought necessary by the Veterinarian attending the case. In my personal experience douches are used as little as possible for the following reasons, (a) they produce undue straining, and (b) they are apt to carry in more infection than is washed out, (c) they dilate and weaken the surface of a tissue already stretched as a result of the inflammation.

Where it is at all possible in cases of cervicitis, (not of long duration) it is better that the organ should be painted with full strength Lugol's solution. These treatments should be followed up until the inflammation has subsided. Cases in which the disease has been of long duration and of indurative nature may be remedied by operative procedure.

On farms where one is troubled with animals not conceiving, though they be in "season" at regular intervals, one would be well advised to call in a Veterinarian to examine such cases. An early diagnosis, as to the breeding possibilities of an individual mean much to the dairy farmer. Cases which are incurably sterile may then be disposed of whilst others may be kept for treatment if their value as breeding individuals permits.

The first task and duty of the Veterinarian is to ascertain whether or not, in his opinion, an animal is "sterile". Secondly if the animal is "Sterile" he should inform the owner as to the probabilities of future service. After these points have been considered the value of the animal to the breed and to the owner must be considered, against the time, labor, and expense consumed by the attempts at restoration to service. It is my firm belief however that to the average farmer, the greatest benefit from such an examination, is to be obtained by the early removal of "boarders". This is especially true in these days when farmers can do little better than make ends meet (if they are fortunate).

# DEPARTMENTAL NEWS *and* NOTES

## New Edition of "Provincial Poultry Breeders' Directory". Have your Name Entered

IN 1917, the Department of Agriculture of the Province of Quebec issued for the first time a "Provincial Poultry Breeders' Directory". This bulletin, containing about twenty pages of Poultry and Rabbit breeders' addresses, has had such success that, to meet all demands, two other editions have had to be printed.

This "Poultry Breeders' Directory" has greatly assisted the trade and the exchange of Poultry stock and products within the Province. It has enabled the buyer to secure his stock from the nearest spot to him. This point is very important, especially when it comes to the shipping of hatching eggs, to which a long journey is prejudicial. It has also to be considered in the saving of transportation costs.

The last edition of the Directory was issued in 1919, and of course is now exhausted. For the benefit of the breeders in the selling of fowl and hatching eggs, as well as for the advantage of people who desire to buy these products, the Hon. Minister of Agriculture has asked the Poultry Branch of his Department to issue a new Directory for 1924.

This pamphlet will largely contribute to the development of Poultry in the Province, in facilitating the buying and selling of pure-bred fowl and hatching eggs. How many persons, each spring,

do not know where to secure hatching eggs or birds for breeding purposes. Many also, in the fall, are at a loss to find the Poultry they require.

This new edition of the Directory will be printed in both languages as usual, and distributed free of cost by mail. It will also contain a list of breeders of pure-bred Rabbits.

It is more than ever in the interest of the owners of flocks of pure-bred stock to enter their name in this Directory. Poultry raising having lately greatly developed in the Province, the demand for eggs and pure-bred Poultry, which is already very large, will keep on growing in future.

The Poultry Branch is taking all possible precautions to gather a list of competent breeders, capable of furnishing birds and eggs of good quality; however, owing to the difficulties in controlling this matter, said Branch leaves entire responsibility to each person supplying eggs and Poultry to its customers.

For the above reasons, and as a guarantee of good faith from the part of people registering in the Directory, the Poultry Branch requires the sum of 25 cts for each name of person and of one breed, plus 5 cts for each additional breed.

In order to avoid mistakes and make the work shorter, each entry must be made on a special form which will be sent free on request, applying to: "Poultry Breeders' Directory", Department of Agriculture, Quebec. A postal card sent to the above address will get you this form.

No entries will be received after February 11th, next.

his country the man who thinks and reasons,—the man she has need of to realize her destiny.

J. H. LAVOIE,

Head of the Service of Horticulture  
and Director of School Gardens.

## How to Collect Insects

Advice to Rural Teachers who wish to compete for prizes announced in our November number

What is an insect?

An animal having three pairs of legs and a body composed of three parts:

1. The head, with mouth, eyes and antennae (or feelers);
2. The thorax with the wings and legs;
3. The abdomen or posterior part.

Have insects always these characteristics?

Yes, in the adult state; but before becoming an adult, the insect generally passes through several stages. Take the butterfly for instance, it deposits an egg on the leaf of a cabbage; from this egg a little green caterpillar emerges, which several weeks later becomes a chrysalis, this means that it envelops itself in a membrane in which it remains immobile for about fifteen days; it then issues therefrom a full-fledged butterfly. These changes are called metamorphosis.

What insects should you collect?

In preference, destructive insects and adult forms, but this does not exclude other insects.

How to collect.

Seize the insects with forceps, or otherwise, and shut them up in a bottle containing either cyanide of potassium or wadding soaked in ether, in order to rapidly asphyxiate them. When neither of these are available, leave them to die of hunger.

Where and when should you collect?

Everywhere and at all hours of the day you may find insects searching for them. They are most abundant on fine sunny days or around lamps at night. They may be taken by surprise in gardens, along fences, in the woods, under the bark of trees, etc.

How should they be mounted?

By piercing them with an insect pin. The pin is placed through the right shoulder of beetles and through the middle of the thorax of all others, as shown by the accompanying illustrations.

When the insect is mounted, fix on the pin a little label on which is written the locality, the date of the capture and your name.

Then arrange the insects in cigar or other boxes having the bottom covered with cork or wavy cardboard.

Wings of butterflies should be spread out, as shown in the adjacent illustration, butterflies are taken in a net, of which a model is shown herewith.

Worms, caterpillars and larvae are kept in flasks containing alcohol at 60 per cent strength, or formaline at ten per cent.

Account will be taken of the state of the insects, of the manner in which they are mounted and arranged in the box, of the destructive species and of the presence of labels indicating date, locality of capture and other interesting facts.

GEORGES MAHEUX,

Provincial Entomologist.

## Agriculture in the School

### The Country Needs Men who Think

How to develop Observation, Initiative and Responsibility

THE country needs robust farmers who think and who reason.

To obtain these, we must apply ourselves to the harmonious development of the spirit of observation and of initiative and of the sense of responsibility in the children of the rural primary schools so as to thus accustom them to make reasonable use of all their faculties.

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The power of observation is developed by educating the senses of the child.

In fact, according to Degive, "Human intelligence receives its normal nourishment by the digestive and circulatory apparatus of the six sensorial organs". To teach the child to be observant, it will be necessary to teach him to distinguish his sensations in an exact and precise manner, that is to say, to teach him to see, to hear, to touch, to taste, to feel and to act. The more these senses, which may be highly perfected, are developed by appropriate exercise, the more apt the child will be to receive exact and precise impressions, and, consequently, the more he will be led to concentrate, to be observant, to make comparisons and to learn to reflect upon all he sees.

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The spirit of initiative is the result of the instinct which impels the normal child to give free course to the activities of his sensorial organs. In fact from early youth he tries to see everything, to hear everything, to do everything, to taste and to touch everything.

Initiative being innate in him, there is no necessity to arouse it, but rather to guide it, by directing its activity towards the pursuit of objects of works or of phenomena capable of interesting him and which will permit him to manifest his personality.

The power of initiative is often expressed in a child by an exuberance which leads him to disperse his activities over a number of different things at the same time.

Instead of stifling or restraining this magic virtue, which is capable of leading him to attain the highest summits of life, we should rather accustom him to adapt his efforts to the limit of his powers and thus to regulate his initiative.

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The sense of responsibility results from the refining of the conscience. In fact, a child must be fully conscious of the consequence of his actions, of their moral value and of his own free will, before he can be accountable for them and feel himself responsible for them.

Accustom the child to logic by making him calculate the extent or foresee the consequences of each of his acts; instill in him the idea of duty by making him understand why such an act is good, while another is bad; finally teach him to form his will by exhorting him to be good, after having convinced him that he is master of himself and that he has full liberty to choose between good and evil; these are the three indispensable elements to the development of the sense of responsibility.

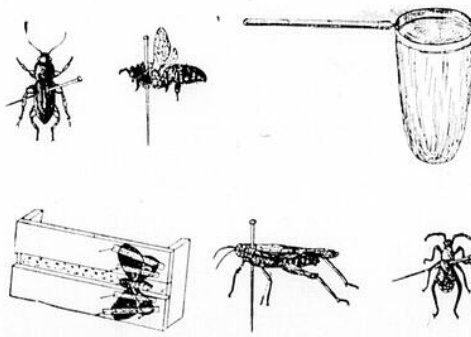
The earlier we teach them to the child, the earlier he will learn his responsibility, but always conditional upon proceeding with consistency and in a progressive manner from the objective to the subjective and from the concrete to the abstract. It is thus that the child will gradually account to himself for his individuality and for the many demands of the laws and conditions of his individual life, and, consequently, of his social life.

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What is better suited for developing the sense of observation in the child than the intuitive teaching of the natural sciences? Can anything more apt be found to arouse and captivate his attention and to absorb his activities than the thrilling interest which is to be found in the myriads of marvellous creatures which he is constantly trampling under foot?

The initiation into the secrets of natural phenomena constitutes one of the most precious elements of moralization, because it creates in the soul that rapture which begets high aspirations and inspires good and noble sentiments.

When the mind of the child shall have been so trained to logic and enthusiasm and his heart to generous acts, that he experiences great happiness at finding himself useful to his fellowmen and in feeling himself worthy of their confidence, then the teacher may rejoice, himself, that he has given to



HOW TO MOUNT INSECTS.



## How to Collect Plants

For Rural Teachers who wish to compete for prizes offered for Nature Study Collections

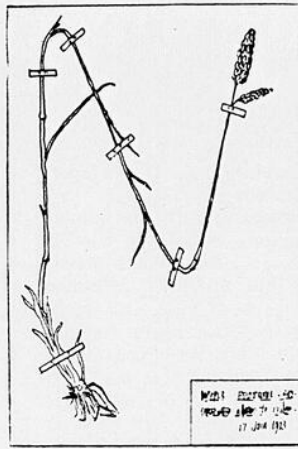
IN collecting plants for this purpose it is important that they should be gathered in dry weather, in order that they may keep well. Never gather them in the morning dew.

Nature study collections should always contain complete plants, that is to say with flowers and especially with roots.

It is important, after the plants have been gathered to take good care of them, at least until the house is reached. It is necessary to carry them in a container large enough to prevent them from being broken, as far as is possible. Proper collecting boxes are made of tin. The plants so collected must be protected against the rays of the sun, which would otherwise cause them to dry too quickly.

### HOW TO STRAIGHTEN THE PLANTS

Before proceeding to dry the plants, in the proper sense of the word, care must be taken to see that they are arranged in a good position. This is done by first spreading out the plants and extending the leaves in such a manner that the largest possible number of them may be seen. Several of them should be turned over to permit them to dry on the under



Method of handling plant that is too long to go onto sheet of mounting paper.

side. When the leaves do not readily lie flat, coins, such as cents, are laid on the most obstinate of them, in order that they may all be flattened out and made to remain in a horizontal position.

### HOW TO DRY THE PLANTS

The plants are placed to dry in the position that

they will be in when mounted, that is to say when fixed in a scrapbook or on card-board. The card used for the collections of the Horticultural Service are seventeen inches by eleven. When the plant is too large for the sheets of blotting paper or the cards on which it is placed, it is folded or doubled back once or twice, as shown in the accompanying illustration, which represents a stalk of Orchard-Grass. The plants are dried between sheets of blotting paper which are changed once or twice a day. The same sheets can be used several times when they have been dried. It is well to place several sheets of blotting paper between each plant in order to dry them more rapidly. When short of blotting paper, old newspapers can be used if necessary. The blotters containing the plants are placed one on the other in a pile and on the top of the pile a plank is placed, or better still, one of the gratings from the oven of the stove (to permit a better circulation of air and escape of the humidity). A weight of at least fifteen pounds must be placed on the top. The plants will dry more quickly in a draught. When they are sufficiently dried, which may be ascertained by placing them to the lips, they are kept between sheets of newspaper till they are mounted. A light weight is left on them.

OMER CARON,

Provincial Botanist.

# FOR CONTINUED PRODUCTION

## Some Constructive Methods in Soil Management

By Dr. A. McTaggart, Agronomy Dept., Macdonald College.

ORGANIC matter, or decayed vegetable and animal material, is of very great importance to the soil, for upon its contained humus depends, in large measure, what we term productivity—the capacity of soils to produce crops. This organic matter performs various functions, chief of which are—the improving materially of the physical condition of light and of stiff-working soils in particular; the holding and regulation of the supply of soil moisture and of available plant food; and the production from its contained humus, under favourable conditions, of nitrates, in which available or soluble form plants take up their nutrients from the soil.

Some soils—such as rich loams (usually alluvial soils) and drained swamp or muck soils—contain an abundance, and in some cases a superabundance, of organic matter. Others, representing the major area of our cultivated soils, are not naturally overly supplied with organic matter. When first farmed, many of them, they probably contained a sufficient supply of humus; but continuous cropping and inadequate provision for the upkeep of this original supply of humus have, in the intervening years, depleted below the bounds of adequacy this important requisite for the promotion of soil fertility hence crop productiveness. Consequently, if payable crops are to be continuously raised, from the bulk of these soils, organic matter has periodically to be incorporated, by means of farm manure, or, if this is not available in sufficient quantity, by green-manuring.

Farm manure, the most important by-product of the average farm in Eastern Canada, is for the very reason that it is so common a farm by-product, not sufficiently appreciated by the average farmer. Evidence of such lack of appreciation is on all sides to be seen when one notices in practically every district the manure thrown out indiscriminately from the barn exits and so allowed to be exposed to the full fertility-depleting agencies of rain showers, thawing action and atmosphere. Such undue exposure to wasting agencies results in considerable loss of fertilizing elements, principally nitrogen; and storage under cover together with exclusion of the air from the interior of the pile, by compaction and by keeping moist the surface thereof, tend to reduce this loss to a minimum. By such reduction valuable fertilizing materials are conserved, and, upon the manure being systematically placed upon the land and incorporated with the soil, the productiveness of that land is, to a large extent, if not entirely, maintained.

### The Handling of Light Soils

In certain districts of Quebec Province are to be found light soils, some of them approaching light sandy loams. What organic matter was in them when first they were formed has practically disappeared as the result of repeated cropping without adequate provision being made for the restoration of the depleted humus. On the farms possessing such light soils light crops were necessarily harvested, and as a result thereof farm manure in insufficient quantity was produced on these farms.

Consequently, there was little hope by use of ordinary farming methods of keeping up the diminishing supply of humus contained in those light soils. Indeed, soil depletion in certain instances resulted in the abandonment of areas of them as sources of livelihood for some settlers.

On such lands, or at least on those that have not been too depleted of organic matter, or that still possess farming prospects, there still remains a hope of improving their fertility, if not of converting them eventually into areas of fair productiveness. By the use of a judicious system of green-manuring such soils, it is claimed, can be materially improved. It has been shown that in ordinary seasons they can grow successfully at least such crops as rye, buckwheat and sweet clover. Consequently, such crops can be employed as the basal crops for restoration of organic matter. If such a light soil area were farmed by the adoption of a comparatively short rotation, in which a definite section was religiously given over each year to the growth and plowing-under of one of the above mentioned crops while another section was producing a crop of rye or oats, it would be only a matter of time when fair crops of cereals and shortly meadows and pastures of appropriate grasses and clovers could be produced on the whole area. In other words a system of farming embodying soil-building methods going hand-in-hand with moderate production is advocated.

If such an area were farmed in conjunction with a heavier and more productive area of land moreover, the process of soil-building would be materially speeded up, for then greater attention in the rotation adopted could be given to the production of suitable crops for the express purpose of green-manuring.

The growing of sweet clover—after attention has been given to inoculation of the soil, scarifying of the seed, and other essential steps—should afford substantial growth for materially enriching such soils in organic matter and nitrogen. Indeed, such a crop could be pastured judiciously and later employed for green-manuring purposes, for it has been shown that this crop is adapted to light soils, can be pastured by stock made accustomed to it, and contains a high percentage of nitrogen in its abundant foliage. Its culture, while not desirable on ordinary lands where red clover and alfalfa grow well, is particularly desirable, for both production and soil-building purposes, on the class of soils above referred to. It is, as is the growth and incorporation of other poor-land crops such as rye and buckwheat, indeed a forerunner to the successful culture of better crops such as oats, corn, and suitable hay and pasture crops. Included among the latter, for use in well chosen mixtures suitable for such partially-improved lightish soils, I would place such deep-rooted, hence dry-soil, species as tall oat grass, alfalfa, meadow fescue, and birdsfoot trefoil (*Lotus corniculatus*). For land that is intended to be left in pasture for a number of years, brome grass (*Bromus inermis*) could be included. The production of turf from the meadows and pastures on these areas and the periodic plowing-

up thereof, under the comparatively short rotation adopted, are beneficial in that the process augments the "building" of these soils.

The cultivation methods adopted in the handling of such light soils should give special attention to the free use of the packer or roller, for compaction, to increase their retentiveness for moisture and its availability to the young growing crop, is specially desired under the conditions prevailing.

The natural special mineral deficiency of these sandy loam soils is potash. Consequently, the use of some potassic fertilizer such as muriate of potash, together with some superphosphates, at the time of seeding the crop, is desirable. The use of such fertilizers would, however, be justifiable only after the soil has been "built" somewhat by the green-manuring process above referred to, and only then in moderate quantities mostly for cultivated crops such as corn, root crops, and potatoes, if included in the rotation adopted, and for crops such as alfalfa if the soil improvement permits of their culture.

Clovers, and legumes generally, should be grown wherever possible on land that is inclined to be deficient in organic matter, for by their growth—whether as sweet clover, as alfalfa, or as clovers, with or without other crops—they enrich the soil in nitrogen, and in organic matter particularly when they are deliberately plowed-under. Such use, wherever possible, of these nitrogen gathering crops contributes very materially to the up-building of soils that are naturally deficient in that most essential material of a productive soil, organic matter, with its contained humus and nitrogen.

Though this necessarily brief and restricted discussion is intended to help, if it can the farmer who finds himself on light or lightish land, yet it embodies principles that might be applied to most soils, and particularly to those whose virgin fertility has shown marked evidence of depletion and where the partial restoration, at least, of that fertility is essential to the continued production of payable crops.

After seventeen years of useful work as Chief of the Dairy Division in the Dairy and Cold Storage Branch, Ottawa, Mr. G. H. Barr has quit the service to engage in business in the city of Toronto. Mr. Barr is known from one end of Canada to the other by those engaged in the manufacture of butter and cheese, and it is safe to say that no man has been more popular among those with whom he was worked. He will be missed at the many gatherings of dairymen which it was a part of his duty to attend in the course of a year.

*Lecturer*—When a person is deaf his sight is more acute, for the law of compensation will work itself out.

*Student*—I've often noticed it myself that when a man has a short leg the other is somewhat longer!  
—London Answers.

# Planning to Plant the Home Landscape

An Informative Article on Home Beautification—and How it is Achieved

By M. H. Howitt, Macdonald College

**R**ATHER than wait for the spring rush, it is much better to plan now for improvements. Decide what you are going to do and send your order in early to the nursery firm.

On this point the readers of the Journal will no doubt be divided into two classes: those who have new places on which they wish to make a start, and those who wish to improve and supplement plantings which already exist.

To both classes of gardeners I would suggest the making of a comprehensive plan. Those having new places can then have a satisfactory guide to go by that will insure a unified whole at the finish, as all the work need not be carried out the first year. For those who wish to supplement only, the above applies also, as it is a form of stock taking and future guide as well. Plans should be made in ink on good paper and drawn to scale. The house should first be located within the proper outside dimensions of the area to be planned. Then the permanent planting (trees, shrubs and perennials) should be shown, together with the roads, walks, out-buildings, etc. Having put these items down the designer is then in a position to see just how the place looks and where the design can be improved. Possibly a tree or trees may have to be taken out, some shrubbery planted or a perennial border added along one of the boundaries of the lawn. It is a good time also to size up the general arrangement as set forth later in this article and to see that the out-buildings, roads and walks are in the most convenient places.

As far as possible, without exaggeration, the area should be laid out in units, and these more or less clearly defined. About the farm house this will not be quite so easy, as the buildings and layout are of a more rambling nature, but in the country town, it can quite easily be accomplished without giving any formal effect in the least.

*A lot in the country town.* The various units ordinarily required are the front lawn, side lawn (sometimes made with a formal garden) back lawn, service area (drying yard, garage, etc.) vegetable and small fruit garden, and very often a separate playing area for the children. On very large lots a tennis court may be included. These various areas may be of any size and shape to suit special conditions and may be juggled around to fit any given lot.

There are certain principles, however, which govern good relations and unity among them and they should be carefully considered. Usually the house should be placed to one side of the lot and preferably towards the north east. This will give a more open exposure on the sunny side of the house which is very desirable. Whenever possible also, the service drive and service area should be confined to the north and east leaving the southern exposures for garden development to be seen from the principal rooms. The garage will usually be placed well towards the back where it may at least be partially screened, and it combines very well with the poultry

run and vegetable garden at the very rear of the lot.

The development of the front lawn will largely depend on whether the house is close to the street or not and this will also influence the development at side and rear. When there is little room for development in front an extra effort should be made to increase the lawn area at the rear. Whether a formal garden or a flower garden of beds will be included, depends on how much time the owner has to devote to the upkeep of his grounds. Ordinarily a side lawn will be quite satisfactory though the formal garden will give added interest. These various units and their placing are shown diagrammatically in the accompanying illustration (No. 1).

*For the Farmstead.*—The same principles will apply as for roads on the village lot. Wherever possible bring them in on the north and east leaving the best exposure for the garden side. There will ordinarily be little side lawn but a fairly extensive area in front. This can be treated freely as there is no sense of confinement and boundary lines. Usually there will be a fairly large area at the back of the house and this can very well be developed as a vegetable and small fruit garden, and a part should be reserved for a drying yard and at least partially concealed. In this area can also be grown a screen of trees to hide the barns. The poultry and garage will usually be combined with the barn and out-buildings and do not come under our consideration at present. See illustration No. 2.

## IMPROVING THE OUT LOOK FROM THE FARM HOME

Generally speaking the surrounding country may be considered as coming under the planning scheme though the immediate surrounding will receive more attention. Slightly outlooks should be made available from certain parts of the house as the living room windows: unsightly objects may be hidden.

Prospects may be divided into three groups; a few spots of interest, a few of undesirable character, and the rest of intermediate landscape value. Good views should be framed and improved by planting; bad views should be hidden; and the intermediate views treated by special design in planting which will make them of interest though not so much so that they detract from the original good views. Too many views are undesirable as are too many points of interest. The views particularly should be cut down to two or three of the best.

My further remarks on planting will apply to both the farm home and the town lot, equally well.

*Nature of Plantings.*—It is not sufficient to decide that a place is to be planted. All plantings should have interest and should result in an improvement on the original surroundings. Trees should be considered first and placed to best advantage either about the house or on the boundaries of the lawn, to be supplemented by shrubs. On extensive lawns, where there is plenty of room for them, trees may very well form the bulk of the planting. The line of the border should be broken and somewhat loose at the edge, and outstanding groups and individual trees should be judiciously used along it so that the exact line of the border will be disguised in at least part of its extent.

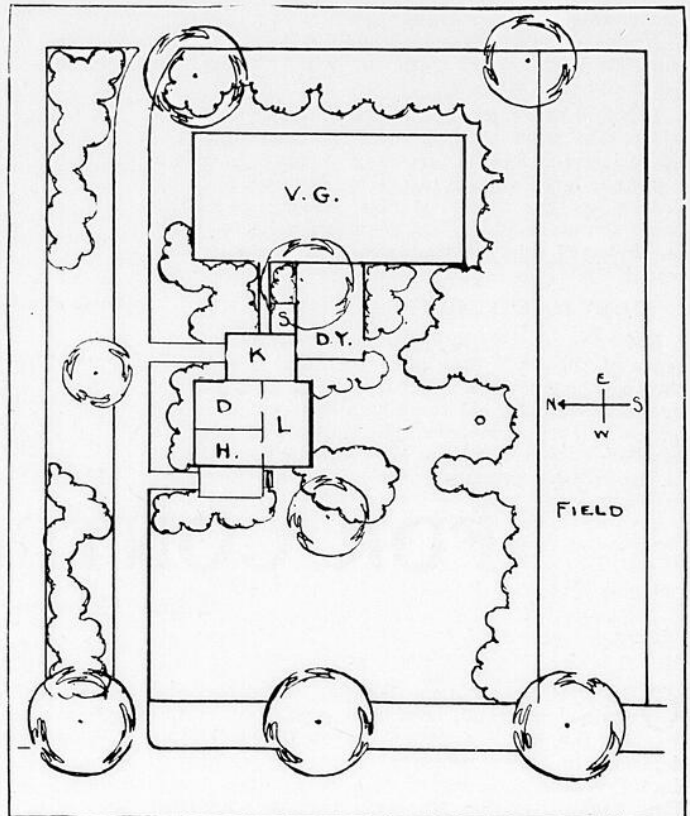


Fig. 2. Diagrammatic development of the area about the farm home. Note placing and screening of drying yard.

—Shrubs may be placed in the several recesses or bays, or they may be set on some of the points or promontories for varied effects. Especially in the vicinity of the house perennials and annuals may be introduced for color.

## DETAILS OF PLANTING

*Placing of trees.*—Trees should not be planted too close to the house and should be used sparingly on the small place. A tree to shade the service area (especially on the farm), two or three on the south and west sides for shade also, and one or two strategically placed to frame the dwelling will be sufficient. Where there is an extensive lawn, trees may be planted in groups on the boundaries leaving the lawn largely open. Occasionally however a small tree or two such as the birches may be planted on the lawn near the house as specimen trees.

*Use of Shrubbery.*—There are various places in which to use shrubbery, the two most important and most effective of which are the foundation and boundary plantings. The first consists of shrubs massed in groups about the building. The whole foundation need not be covered unless it is very ugly, and indeed a restrained use of the shrubs is usually more effective.

The taller shrubs should ordinarily be put at the corners to accent the planting, and also the planting should be widened at these points. Both the height and width should be varied in groups but care should be taken to avoid a needlessly serpentine edge on the lawn, or an up and down effect in height. Avoid blocking windows. The same remarks regarding height and width apply to the boundary plantings on the lawn, but here more latitude can be given and occasionally a large shrub may stand out prominently though not separated from the main mass. Specimen shrubs do not look well and should be sparingly used even on a large lawn.

*Use of Perennials.*—These look particularly well with a background of greenery and may very well be planted in front of the boundary shrubbery. A certain section however should be selected and a border made rather than introducing perennials throughout the shrubbery in a promiscuous manner, though a few may be so introduced with care. In past numbers of *The Journal* articles have appeared on the arrangement of borders.

*Annuals.*—May be introduced in natural clumps to supplement the perennials or in borders by themselves. Bedding-out annuals (so-called) as asters, cannas, geraniums, etc., are out of place on the farm or even the small town when placed in formal beds on the lawn. With much less expense and trouble a much more pleasing, effective and equally bright display may be had as mentioned above. If a

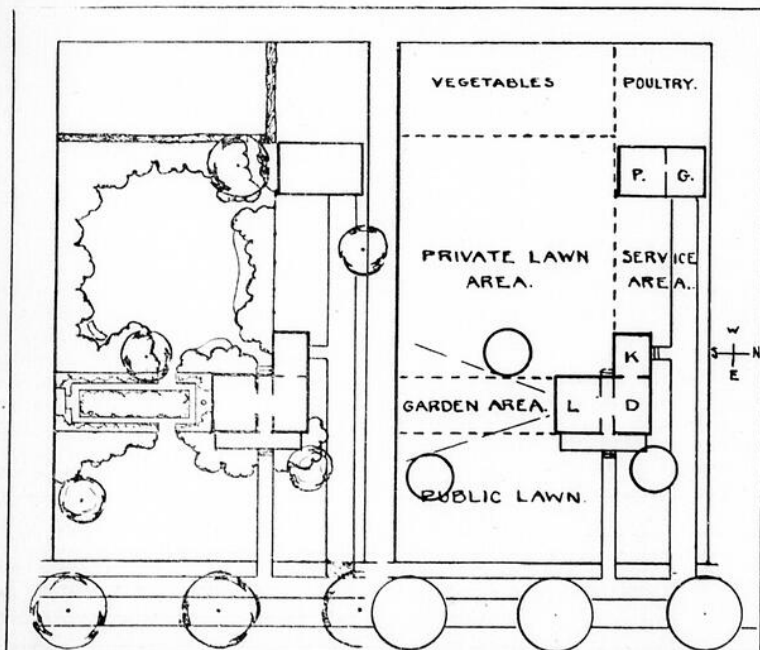


Fig. 1. Diagram showing house placed toward side of lot, in order to give greater expanse of ground on the living-room side. Shows also division in various units and development.

formal effect is desired at all with these flowers, they should be strictly confined to comparatively narrow beds about the house foundation or the formal garden.

**Selection of Trees and Shrubs.**—A great variety of material is not desirable especially on the small place. A larger use of fewer varieties is much better than a collection, even though they may all be excellent varieties. The value of the whole is more important than the value of any part, and simplicity should be the aim in all the designing and planting.

Variety of color in flower masses (trees, shrubs and parennials) should not be the only consideration, but the eye should be trained to see variety in natural forms and foliage masses. These more subtle differences are really far more satisfactory and should be given due thought in the design.

Of trees that branch low, suitable for lawn planting, there is a large assortment, the American beech and several varieties of the oaks, maples and lindens; the small leaf evergreens, as spruces, firs, hemlocks and some of the pines; and the many kinds of field thorns. In this regard also the native shrubs, such as dogwoods, can very well be used more than they are.

Due thought should also be given to winter effect. A few evergreens add warmth and color to the snow-covered landscape, and the bright coloring of many of our shrubs and trees (dogwoods and willows particularly) can be made an attractive feature.

This general article is the first of a series on the subject of Planning and Planting the Home Landscape. Next month a number of interesting details of planting that could not be embodied in such a general article will be taken up. March will be time for an article on actual planting operations, to be followed by articles of timely interest, well on into the summer.

A very good and inexpensive garden book that I would recommend to readers of *The Journal* is the "Garden Guide", edited by A. T. De LaMare of the firm by that name. It costs \$1.25 and is well worth the price.

The accompanying lists should prove useful. That of the trees is intended as a guide only in the choosing of trees to suit the scale of the place. The aim with the shrubs has been to compile a list of absolutely hardy shrubs particularly suited to rural conditions and is therefore intentionally not very long.

**A LIST OF PLANTING TREES**

Trees for the large lawn to be grouped, also for shade about the buildings: Sugar Maple, Silver Maple, Norway Maple (very formal), American Elm, Basswood, White Ash, White Oak, Red Oak, Pin Oak.

Trees for the small lawn, to be grouped, or as single specimens for effect rather than shade. May also be used to supplement list above on large lawns, especially near house and along walks or among shrubbery:—Catalpa, Kentucky Coffee Tree, Mountain Ash or Rowan Tree, Cut Leaved Weeping Birch, Paper Birch, Tulip Tree, Gingko, Carolina Poplar (for quick effect).

For winter effect the Pines, Spruces and Cedars.

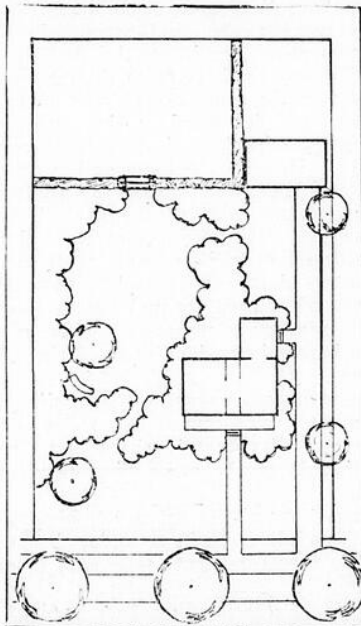


Fig. 3. Another, more naturalistic development of lot in fig. 1, eliminating the formal flower garden, enlarging the vegetable garden.

**A SELECT LIST OF SHRUBS SUITABLE FOR QUEBEC CONDITIONS**

All are suitable for massed planting and where they serve a special purpose it has been noted. Arranged according to height.

**LOW 2-4 ft.**

- Berberis thunbergii—Japanese Barberry: May-Flowers yellow. Many uses. Valuable for its neat compact form, good foliage, bright red berries and autumn foliage.
- Berberis mahonia Oregon Grape: May-Yellow foliage, glossy bright blue berries. Valuable for edge planting and refined effects.
- Hydrangea arborescens—Hills of snow: July whitish — masses of bloom when there is little else. Front of shrubbery borders in mass.
- Philadelphus Lemoinei—Lemoines Syringa: June—white. Specially suitable for foundation planting. Grows well in shade. Plant new French hybrids.
- Potentilla fruticosa—Shrubby cinquefoil: July—until frost—yellow— Will thrive in a variety of soils and situations. Suitable for naturalistic or wild plantings and on terraces.
- Rosa rugosa—Japanese Rose: June—white, pink and red single and double. Suitable for natural or wild planting.
- Symphoricarpos racemosus—Snowberry: July—Inconspicuous flowers. Valuable for waxy white berries.

**MEDIUM 6-8 ft.**

- Amelanchier canadensis—Juneberry: June—white—native shrub, subject to disfigurement of leaves by red spider in dry weather.
- Cornus stolonifera—Red Brier Dogwood: May — white. Excellent foliage, rapid grower. Valuable for natural planting and for its autumn color.
- Cornus alba—Native Dogwood: May — white bright blood red branches in winter.
- Elaeagnus longipes—Russian Olive: Inconspicuous flowers. Valuable for silvery foliage for contrast and olive like fruits.
- Philadelphus coronarius—Syringa or Mock Orange: May — white. Excellent foliage. Plant also new French hybrids, named varieties.
- Spiraea Van Houtteii—Van Houtte's spiraea: May—white.—Valuable all round shrub. Especially suitable for foundation planting.

**Crataegus—Hawthorns**

- Crataegus—Hawthorns: May—white—one of our best native shrubs. Valuable for branching effect and masses of bloom in spring. Should be preserved in grounds when found growing wild. Requires spraying under cultivation.
- Hydrangea paniculata—var grandiflora Common Hardy Hydrangea: August—white with pink tinge, increasing with age. Best in beds by themselves. Should be used sparingly in country and only in most formal positions.
- Lonicera tatarica—Tartarian Honeysuckle: May—June—Pink. Excellent filler shrub in mass planting.
- Rhamus cathartica—Common Buckthorn: Inconspicuous flowers — bright black berries. Valuable as large filler shrub. Harbors one stage of oat rust. Plant with care.
- Syringa vulgaris—Common Lilac: May—white mauves, purples and blues, single and double. Old time favourite suitable for almost any position. Plant only the new namer varieties.
- Viburnum lantana—Wayfaring Tree: May — white. Excellent foliage, hanging late in fall. Red and then black berries. One of our most satisfactory northern shrubs. Plant freely especially in large shrubberies.
- Caragana arborescens—Siberian Pea Tree: May—June. Yellow, profuse pea like blossoms. Erect branching, excellent foliage. Large filler shrub.

TALL 10-15 ft.

**Berry and Currant Boxes**

ON and after the first day of October, 1924, all berry or currant boxes manufactured in Canada shall have a capacity measurement of, and all boxes containing berries or currants packed in Canada for sale, shall contain when level full as nearly as practicable one or other of the following quantities:—

- (a) 67.2 cubic inches (approximately 1 quart)
- (b) 33.6 cubic inches (approximately 1 pint)

**Your Vegetable Garden**

**Why You Need a Garden**

The First Of A Series Of Articles On The Farm Vegetable Garden—Next Month, Planning The Garden

By W. J. Tawse

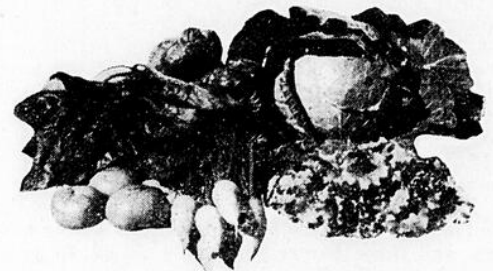
THE advantages of a home vegetable garden are briefly three in number: It offers an opportunity to have convenient to the kitchen an abundant supply of fresh crisp seasonable vegetables of the highest quality. The cost of the menu can be materially cheapened by the free use of plentiful supplies when in season. The recent new and wonderful advance in our knowledge of nutrition places vegetables on our food list as essential to our health and well bring. The following table will at a glance point out the dietetic value of many vegetables compared with other common foods.

**FOOD VALUE OF VEGETABLES AND SOME OTHER THINGS WE EAT.**

	Body Building Protein %	Sources of heat and energy Fat % Sugar and Starch %	Calories in 100 grams	Vitamines on a four point scale		
				A	B	C
<b>Health Foods.</b>						
Cabbage	2	6 32	xxx	xxx	xxxx	
Carrots	1	9 40	xxx	xxx	xx	
Celery	1	3 16	?	xxx	?	
Chard	2	2 20	xxx	xx	?	
Lettuce	1	3 16	xx	xx	xxxx	
Onions	1	10 44		xxx	xxx	
Parsnips	2	14 64				
Spinach	2	3 20	xxx	xxx	xxx	
Tomatoes	1	4 20	xx	xxx	xxxx	
<b>Body-Building Foods.</b>						
<b>From Vegetable Sources</b>						
Beans, dry	22	2 60	346	xxx	0	
Peas, fresh	7	17 96	x	xx	xxx	
Peanuts	26	38 24	540	x	xx	
<b>From Animal Sources.</b>						
Beef, Lean	20	13 200	0	0	0	
Bacon	10	65 625	0	0	0	
Fowl	20	16 224				
Fish	18	5 120	x	x	?	
Milk	3	4 5	68	xxx	xxx	xx
Butter	1	85 770	xxxx	0	0	
Cheese	29	36 440	xx	x	?	
Eggs, etc	7½	5½ 80	xxxx	xx	0	
<b>Energy Foods.</b>						
Potatoes	2	18 100	0	xxx	xx	
Sweet Potatoes	2	1 28	130	xxx	xx	
Wheat Flour	11	1 75	350	0	0	
Sugar	0	0 100	400	0	0	
Vegetable Oils	100	900	0	0	0	
Oatmeal	16	7 68	400	x	xxx	0

This table giving the approximate vitamine content of many of our common foods offers for the first time some very interesting information. Many thousands of sick and suffering people can be brought back to health by applying the new methods of dieting—"Nature's healing"—if only they will use those health protecting, vitamine rich vegetables such as cabbage, carrots, lettuce, spinach and tomatoes. A study of the table will clearly indicate the great richness of vegetables in these new found health protecting substances.

That vegetables are a supreme necessity in our modern diet if we wish to continue to enjoy the best of health is becoming recognized by everyone; but after all is not the true value of the home garden, whether in the town or country, determined by the yield and the satisfaction of having produced your own vegetables compared with what it costs in material and labour. Recent investigations prove that the vegetable garden, a space 80 x 135 ft., is one of the most profitable areas when properly cared for on any farm.



Common vegetables that are rich in the health protecting vitamines.

**The Home Vegetable Garden**

The material appearing in the adjoining article on vegetable gardening by W. J. Tawse, and in a number of other articles that we propose running during the spring months on the home garden, will shortly be issued in bulletin form by the Horticultural Department, Macdonald College. The name of the bulletin will be "The Home Vegetable Garden". It will take the place of a former bulletin published under the same name, but will be much fuller and better illustrated than was the old one.

# A Destructive Orchard Pest

## Round-headed Apple-tree Borer and Its Control.

An address given before the Quebec Pomological Society, by C. E. Petch, B. S. A., Dominion Entomological Laboratory, Hemmingford, Que.

I was requested to prepare a paper dealing with the most destructive insect pest of our orchards.

To decide this problem would be very difficult and it would probably depend upon the locality one happened to be in. However, the Round-headed Apple-tree borer was chosen because it has been brought forcibly to my attention this past summer due to a preliminary investigation following enquiries for its control and because it does much more damage than ordinarily thought.

**History**—It is a native of North America and has been known as an enemy of the apple tree for almost a century. The species was first described by Fabricius in 1787 and redescribed by Say in 1824. In 1825, it was reported to be attacking apple trees at Albany and Troy, N. Y. Since that time there have been numerous complaints of very serious damage over a wide area.

**Distribution**—According to Brooks, "Its known range may be bounded by a line extending from near the mouth of the St. Lawrence River westward through Quebec and Ontario to Minnesota, thence through Nebraska, Kansas, New Mexico, Texas, Louisiana, Mississippi, Alabama and Georgia to the Atlantic Coast". Sanderson says, "It is not commonly injurious in the Gulf States". This year it has been reported to me from Kingston and Simcoe in Ontario and Covey Hill, Hemmingford, Rougemont and Abbotsford in Quebec. Fortunately, it is local in its distribution and while one orchard may be badly injured by it others in the same district will suffer little or no damage.

**Economic Importance**—An idea of its economic importance may be obtained from the following quotations, "It ranks among the most destructive enemies to apple and quince culture throughout the northern and eastern portions of the United States and Canada". Slingerland & Crosby: "This is one of the apple insects that is usually underestimated in the amount of damage it does" Baldwin. "The most destructive borer of apple-trees in the eastern half of the country" Brooks.

**Injury**—In newly infested trees the injury is usually not detected until the second year. The presence of borers in an orchard is indicated by retarded growth and yellowing of the leaves of the infested trees. If the infested trees are examined near the base, discolored sunken cracked patches of bark indicating the burrows beneath will be found. These areas are sometimes attended by the exudation of sap from the wound. Reddish castings which are forced out through small holes near the base of the tree will be present, and there will often be small round holes about the size of a lead pencil in the trunk, from eight to ten inches above the ground, through which adults have already escaped. The exit holes of this beetle can be readily distinguished from the oval exit holes of the flat-headed apple tree borer.

The burrows, or tunnels begin in the bark and sap wood, but soon extend for several inches up and down in the solid wood often reaching the heart of small trees. The early burrows are usually fat and near the surface, and the borers stay in these for a year or more. Trees of all ages, from nursery stock to large orchard trees are attacked, but those from three to ten years suffer most. The borers work mostly in the base of the trunk, often below the surface of the ground and in the large roots, occasionally they infest the upper portions of the trunk, but rarely the larger limbs.

If the borers are abundant and neglected in young apple orchards, practically all the trees will be killed or injured beyond recovery before they are ten years old. One borer may kill a young apple tree, and three borers can easily do so. In young trees they will often almost sever them near the surface of the ground. In older trees the injury is not always fatal, but the growth of the tree and fruit is greatly checked.

**The Egg**—The unusually large, smooth shelled, pale rust-brown egg, measures an eighth of an inch in length by one-third as wide, and is much compressed. The egg has a flattened appearance due to the pressure of the bark surrounding it, and the shell is tough and plastic, allowing the egg to shape itself more or less to its location.

The female first makes a short curved incision about one-fifth inch in length in the bark, probably by means of her mandibles causing it to split slightly; then turning head upward, by means of her extensile ovipositor, she forces a side opening from the bottom of the incision and places an egg under the bark nearly a quarter of an inch

from the incision, accompanying the deposition by the extrusion of a gummy fluid which covers and secures it to its place, and usually fills the opening. In young trees the egg is usually thoroughly hidden, while in older trees it is so slightly embedded as to be easily seen. In young trees the eggs are placed between the bark and wood, but in old trees they may be placed between the layers of bark.

As a rule they are placed in the tree just above the ground, but if the female can find an opening between the tree and the soil large enough to enter, she may deposit eggs an inch or so below the surface of the ground; rarely are the eggs placed higher in the tree. Probably most of the eggs are laid in June or July in this Province but in other places oviposition continues to September, and it may do so here. Most writers say it requires fourteen to twenty-one days for the eggs to hatch, and Slingerland and Crosby state "From eggs laid June 15th, larvae hatched in about three weeks in New Hampshire."

**The Larva**—The larva, or borer, is a whitish, or yellowish, footless grub, with brown head, black jaws and broad thorax. It is much thicker than the flat-headed apple tree borer, and measures from three-quarters to a little over one inch in length when mature. The body tapers gradually from just behind the head to the posterior end and the segments are decidedly constricted, the general shape, therefore, is cylindrical.

On hatching, the young borers promptly attack the inner bark, where they continue to feed until late in the season in shallow flat burrows; where upon some of them, in thin barked trees, gnaw their way into the sap wood. They feed and grow rapidly during the first season, and where several are present in one tree they may girdle and kill it before winter. They avoid one another in the tree. The borers spend their first winter in the burrows near the ground and resume feeding early the following spring attacking now the solid wood almost exclusively, and in young trees penetrating to the heart. They make larger and deeper burrows, and they increase in size. When nearly mature they work out to the surface and then retreating about half an inch block the tunnel both before and behind them with sawdust preparatory to pupation.

**Pupa**—A small chamber an inch or more in length is left near the end of the tunnel where the grub hibernates practically secure from the entrance of enemies in either direction. The borer sheds its skin in this specially prepared chamber, and appears in the pupal stage a delicate yellowish-white object, somewhat resembling the adult insect. It has transverse rows of minute spines on the back. The pupa is nearly as long as the adult insect, which it resembles in a superficial manner, the head being bent down toward the breast, and the legs and long antennae folded upon the ventral

surface. The insect does not feed in this stage and is incapable of motion except that of wriggling about in the chamber. It occupies a vertical position in the tree with its head up. The pupa gradually grows darker in color and in about three weeks transforms to the beautiful beetle. Most writers give the duration of the pupal period as about three weeks, but Somers reduces it to two weeks in some cases, and Becker lengthens it to a month. Some writers state that the transformation takes place to apple blossom time.

**Adult**—The adult insect, or parent, of this borer, is a handsome beetle. The whole insect appendages included, is clothed in a velvety-like coating of fine smoothly laid hairs, giving it a very neat appearance. The long antennae, nearly as long as the body, and the legs are gray. The head and ventral portion of the body are a beautiful silvery-white, and from the white face of the beetle two broad white stripes extend horizontally backward over the head across the thorax and along each wing cover to the tip. The general color of the wing covers and dorsal portions of the thorax is light brown and the black eyes are very conspicuous on the white head." Slingerland and Crosby.

According to Brooks "The pupa attains the adult stage ten days or two weeks before it leaves the pupal chamber. When ready to issue it gnaws a circular hole through the bark and escapes".

It is probable that the beetles emerge in this Province from April to September, but the large majority of them appear during June and July. They spend the greater part of their lives resting in the trees among the foliage. They do considerable feeding on the twigs and on the stems and midribs of leaves and they are also fond of the moisture contained in castings thrown from the trees by the working borers. This suggests to me the possibility of a poison sawdust bait to kill the beetles. The average life of a beetle is forty to fifty days, although individuals occasionally live to seventy-five days of age. They range in size from  $\frac{5}{8}$ ths to  $\frac{7}{8}$ ths of an inch exclusive of the antennae.

The male is considerably shorter and more slender than the female.

Oviposition usually begins within a week or ten days after emergence and is spread over a period of about two months. The female makes short flights in search of trees in which to oviposit. Lochhead estimates the number of eggs laid per female as fifteen to thirty. The males in seeking their mates, make long and frequent flights, but the females fly only short distances, especially when suitable trees in which to deposit eggs are abundant, in which case they pass their lives within a few rods of their birth place. It requires about ten minutes to lay an egg and as many as five may be deposited without resting. The females then crawl back into the trees or move to neighboring trees.

### NATURAL ENEMIES

As it spends most of the three years of its life inside the tree this apple borer has few enemies. Most observers agree that woodpeckers destroy great numbers of the borers by drilling into the trees and removing them from their burrows.

Brooks says in some cases from 50 to 75% of the borers are destroyed in this way and Lochhead says, "woodpeckers destroy large numbers of the larvae". However, Slingerland & Crosby are not so enthusiastic about them for all they say is, "woodpeckers get some of the grubs". Personally there was very little evidence at hand this year to show woodpeckers to be of any great value. Most of the borers devoured are taken from the pupal chamber or while they are making the ascent of the trunk preparatory to pupation. This, of course is after the borers have done most of their injury to the trees.

A hymenopterous parasite, *Cenocoelius populator* may in a small way contribute to its control.

**Control**. Unfortunately there is no method of control that is at the same time easy, rapid and effective.

This insect spends its entire life history except a part of the adult stage in or under the bark of the tree and is therefore practically safe from modern chemicals.

**Worming**. From the literature read in preparation of this paper the most popular method of ridding the trees of borers is by worming or digging out. The necessary tools for this operation are a small chisel, a hammer, a sharp knife, and a piece

### Advice to Motorists

The following "ten commandments" to motorists, recently issued by the Montreal Police Department, might with benefit be read, marked and inwardly digested by every automobile driver:

- 1.—Drive on the right side of the road, it is just as good as the left.
- 2.—Slow down when approaching a crossroad; it is nearly as dangerous as a railroad crossing.
- 3.—Look out for children. You can never tell what they will do, and you are always in the wrong if you hit them.
- 4.—Try to help instead of hinder the traffic officer; he is there for your good, and he has a tough job.
- 5.—Be sure that your "dimers" really dim; it is no joke driving into a blinding glare—you probably know?
- 6.—Read and obey the warning signs, they're not put up as ornaments.
- 7.—If you feel you must speed, do it where it will not kill anybody but yourself.
- 8.—When making minor repairs, stop where your car may be seen from both directions; otherwise you may stop longer than you anticipate.
- 9.—Speeding around corners is a straight route to the hospital. Don't race past a stopped car. Some day the jury may call it manslaughter.
- 10.—Use discretion. The fact that you had the right of way will not bring anybody back to life—not even yourself.

of wire. The wire should have a sharp hook on the end as many borers can be taken with much less cutting of the tree. Unless this worming is done with considerable care, the trees are apt to be injured.

Worming should be done in this province in September or October, but not later and again in May for any beetles that have been overlooked or born from belated eggs. The borers should never be allowed to get a start in an orchard, because it will require a large amount of tedious work to get rid of them. However if it is done every fall the work will be considerably lessened. Most of the punctures of the young borers will be found within an inch of the surface of the ground. To get the old borers remove the soil from the base of the tree. Where the burrows open is likely to be indicated by tightly matted wads of woody castings. Follow up these courses by means of the tools mentioned above. When there are several borers in a tree they avoid one another and make their galleries narrower and longer to avoid contact. This habit increases the chance of them being overlooked.

#### PAINTS AND WASHES

Many investigators have reported success from the use of various paints and washes to protect the trees, so that the female cannot lay her eggs. On the other hand, the United States Bureau of Entomology reports no benefit from the use of fish-oil soaps and carbolic acid washes. Among the materials reported as giving success are the following:—

1. White lead and linseed oil, made a little thicker than ordinary paint.
2. Any non-injurious paint that will form a coat.
3. Commercial lime sulphur 1-8.
4. Whitewash, some add a little Portland cement to make it more adhesive.
5. Asphaltum paint is recommended. It is prepared by melting 5 lbs. hard asphaltum and adding ¼ lb. raw linseed oil. Allow it to cool and apply it while hot enough to spread.
6. Soft soap.
7. Whale oil soap.
8. Caustic potash fish-oil soap.
9. Alkaline wash prepared by reducing soft soap to the consistency of thick paint by the addition of caustic potash or washing soda solution.
10. Carbolic wash is made by adding 1 pint crude carbolic acid to 10 gallons of the above wash.

Any of these paints or washes should cover the trunks from 2 inches below the ground surface to one foot above it and must be renewed yearly.

For the killing of eggs, fish-oil soap and lime sulphur one to 8 have been recommended and as above are applied to the trunk. For killing borers in the tree kerosene applied pure to the bark at the places where castings show has been successful, according to some orchardists. However, others have found it of little value and in addition it may kill the bark at the point of application.

(Continued on page V)

## BETTER FORM NEEDED

By W. A. Maw, Poultry Dept., Macdonald College.

POULTRY keepers of Eastern Canada in general have always had an eager desire to keep their flocks up to standard requirements as much as possible. This fact has always been a credit to them as breeders, but since greater egg production has been the aim a great many breeders have failed to keep the fact of the importance of breed characteristics foremost in mind when making selections and matings for increased egg productions. Much controversy has been brought about on this subject, especially by fancier-breeders, because of the lack of quality in the so-called utility and bred-to-lay stock. Some utility breeders claim that it is impossible to develop a strain of high producing fowls that combine the standard qualities in type and colour with high production, while other fancier-breeders claim that it is feasible. Much time and effort has been put into the breeding work by our best poultry breeders, and still we find a great lack of the desired combination of qualities in our egg-laying contest and bred-to-lay flocks in general.

Canadian poultrymen in general, large and small breeders, as well as farm flock breeders, are at present in a position to take advantage of a great opportunity if they but act quickly and make the most of the situation. Firstly, with our uniformly organized system of egg laying contests throughout the Dominion all breeders have an opportunity to place their flocks in competition with others for premier places in egg production work which gives them free publicity as breeders. Such publicity means much to the Canadian breeders in general. Too few are taking advantage of this opportunity. Secondly, all contest females making a record of two hundred eggs or more are officially registered in the Canadian National Live Stock Records. And furthermore the pedigreed stock from these registered hens can also be registered. Here lies the greatest opportunity afforded any poultrymen today. Canada stands alone as being the first country to recognize the registration of egg producing value in poultry. A great opportunity for building up a national trade in registered bred-to-lay poultry is at hand. Thirdly, with a system of Record of Performance with poultry being carried on by the Poultry Division of the Federal Live Stock Branch, any breeders in the Dominion, providing a flock of twenty-five females are available for trapnest work, can have their flocks officially inspected throughout the year. All females making a yearly product on of one hundred and fifty eggs or better can be officially certified by the Dominion Live Stock Branch. Furthermore, cockerels that are known sons of any officially certified R. O. P. hens or registered contest hens, that come up to the required standard as regards breed characteristics, can be officially banded as birds fit for sale as certified breeders. And lastly, classes for R. O. P. and contest hens with records of two hundred eggs or better have been started in our larger poultry exhibitions. These classes are judged according to the American Standard of Protection.

What will be the result of all these developments on the present run of bred-to-lay poultry that lacks breed type and characteristics? The answer is that "better form is needed". Some breeders have been steadily working towards this end since they found that straight selection along egg lines had led them to lowered breeds standards. Others may want to change their plans and make haste to get in line with the more far sighted breeders who foresaw their difficulties and future possibilities, as well. What might happen if they attempt to introduce breed type and colour into their bred-to-lay strains too suddenly? The answer to this might be, that they may, through the careless introduction of exhibition blood ruin their bred-to-lay qualities. Those breeders who breed colour and type in their flocks must do very careful thinking before introducing any new stock, in order to preserve their already good laying qualities. If male stock is to be used to introduce the new blood the greatest of care should be exercised in making the selection. Select the breeder of the stock as carefully as the stock itself. If no breeders are known offhand consult someone who is an authority and should

know breeders and their stock in a general way. Here lies the importance of the new registration and R.O.P. work. Those in charge of this work are in direct and constant touch with the better breeders and their stock. When the official registration and banding of the progeny of this certified stock is available, then the poultry keeper in the outlying district can buy stock with more satisfaction, knowing that the stock will have been officially examined before being officially banded.

Female stock may also be used to introduce new blood and quality into a strain. This can be done with less cost perhaps, than is the case with males, and perhaps with less fear of a great loss in quality if the combination of blood did not prove worthy of introduction. Of course it would mean at least a year longer in time to get the real start in the general flock breeding as one would have to wait until the following year to use sons of these introduced females to mate on more of the flock females.

At the present time we are entering a period of great development in poultry breeding work. Large sums of money are being paid for poultry breeding stock. Most of these high prices are being paid for bred-to-lay stock. This is the underlying reason for the present developing organization among Canadian poultrymen to get themselves into a position of offer to the general public, at home, as well as abroad highly bred production poultry of standard quality that can be backed up with official registration and certification.

Already we have in British Columbia, Alberta, Ontario and New Brunswick, associations which are made up of breeders that have either registered or R. O. P. stock, or both classes of stock to offer. These organizations hope to be in a position to collectively supply large numbers of such classes of breeding stock to the poultry buying public.

We, the poultry breeders in Canada are fortunate in that our poultry population is still small. We still have a great opportunity to quickly raise the general standard of our whole poultry population. The number of poultry breeders is also small when compared with that of the United States. Then again the fact that we, with our standard classification of egg grades standing out as an example to all the world in egg marketing, can command more attention quickly from the outside public to our high standard poultry breeding stock.

Egg-laying contest records in Canada compare favourably with any made in the United States, showing that Canada has a climate suitable to heavy production and at the same time, a climate suitable to the growing of vigorous stock. If we but lay our plans of selection and breeding with good sound judgment in what is the desired breed type and quality to combine with high egg production and produce strong, vigorous stock of that quality, we will have no trouble in selling the stock and at the same time build up a reputation for Canadian poultry breeding stock worthy of the title "Canadian".

## OUR YOUNG FOLKS

### My Favorite Winter Sport

Prize-Winning Essays in Our Monthly Contest  
(First Prize)

MY favourite winter sport is coasting or as we more often say sliding.

I have a sled all my own, and each of my brothers have one also and we have high times and great excitement on our hill every evening, and Saturday afternoons.

There is a race to the top of the hill a leap onto our sleds and away we go straight and true as an arrow, until the bottom of the hill is reached. Oh! its great and every boy will tell you so.

I love sliding very much because it is great fun and also very healthy, our cheeks be like roses when we enter the house out of breath and puffing from our great play.

There is one hill which we love more than others and which we hail with great joy at the very first fall of the spotless snow.

Sliding is great fun when there is a large crowd and lots of toboggans and sleds, as we often upset and several toboggans dash upon us and soon we are all piled in a bunch and when we rise we be like snowmen all white with snow.

As for me I do not think there is any winter sport like sliding, other boys may have skating or other games but coasting is my favorite.

JOSEPH DONLAN,

P. O. Box 5,  
Chapeau, Que.

(Second Prize)

When the snow has fallen for the first time, how happy we all feel, for we begin at once to get ready for our favourite winter sports, and of all mine is coasting. It is such fun to slide down a steep hill and race across a pond or field when the wind has blown most of the snow away, so that the sled will not be stopped just as it is gathering speed.

When a number of girls and boys get together on a moonlight night with their sleds and toboggans. What could be more fun?

Some sleds will go faster and farther than others too.

Some sleds will hold eight or nine girls or boys and when one of these plunges into a snow-drift every one goes rolling, and tumbling in the snow, but in a moment they are on their feet again and there is a lot of shaking of clothes, picking up caps and mitts and the laughter of this merry crowd rings far and wide across the pearly snow and echoes back to us again.

Towards the end of the winter the snow will harden to form a crust which will bear up a heavy weight quite easily and then a sled will go over the crust quite easily and will not sink in.

And what a speed we can travel at! I know very well that our bravest chauffeurs and aviators would cry at us to go at a slower pace. But our machines are not so up to date and our brakes do not always obey us.

I think every Canadian boy and girl should indulge to some extent in sports. Not only because

### Essay-Writing Competitions For Our Young Folks.

New Competition Each Month — Money Prizes Offered — Outline of Rules.

1. Each month a subject will be announced upon which rural pupils of fifteen years and under will be invited to write essays or composition. These should be mailed to THE EDITOR, THE JOURNAL OF AGRICULTURE, MASDONALD COLLEGE, QUEBEC, before the fifteenth of the month for examination and judging.

2. Five prizes will be awarded each month: \$3.00, \$2.50, \$2.00, \$1.50 and \$1. The prize winning essays will then be published on our Young Folks Page.

3. Essays should be accompanied by a letter from parent or guardian certifying as to child's age, and stating that the matter and work of composition embodied in the essay is work of child only. (Note: name and address of parent is always necessary for postal directions in case of prize winners.)

4. That our young folks may learn thrift, it is suggested that the money won in these competitions be used by them for starting bank accounts.

Subjects for next two months.

Essays to be mailed before March 15th.

"My favorite book—and why I like it."

Essays to be mailed before March 15th.

"The subject I like best at school."

they are fun and we have jolly good times but because it seems to me that in all seasons, even the one that Jack Frost bites our toes in, in winter, that we should have healthy Sport and all winter sports are healthful.

God has given us means of healthy exercises that we may grow strong and rosy-checked.

ARMON McBURNEY,

(Age 12 years).

(Third Prize)

It is hard to say what sport I like the very best. I like winter, and all its sports. I shall say I like sliding down hill best. I have a long toboggan shoot my brother built me this winter, and going down that is the greatest of fun. We go so fast we can't see nothing, and hardly touch the track at all after starting, and at the bottom we have a few places dug out to give us some good hard bumps. We loose off our toques, and caps, and the soft snow flies all in our faces, sometimes the toboggan shoots out from under us and we all go rolling over each other on down the shoot. Jack Frost sometimes nips our ears and noses, and finger and toes, and we have to keep jumping around to keep warm, but we do not want to give up and go in. Each slide we think we must have just one more. And so the fun goes on—My school chums have all been here to slide on our toboggan shoot, during our vacation. But we are planning on a real sliding party when the moonlight nights come again. We have a brook at the foot of the shoot where my brothers and some of the big boys skate. But I would rather slide on my toboggan.

LYNFORD SNODGRASS,

Foster, Que.

(Age 9 years).

(Fourth Prize)

I think of all winter sports that I like best of all, "Tobogganing". There are a number of hills around my home, but sometimes I have to go a mile away to find a good hill.

The reason that I like this sport best, is because it is a clean and healthy sport. I have a pair of moccasins and good heavy clothing, so as to keep me warm, for there is no comfort in playing when one is cold.

There are a number of my school-mates that I ask to go with me tobogganing for "the more the merrier". Sometimes there are so many that they all cannot ride at one time, so I see that they all have a ride and take it in turns. It is a great sport for the, "appetite" for believe me that after I have been out sliding for two or three hours I am ready for a good, square meal.

Is there anything more beautiful than to stand on the hill-tops and look down and see the valleys covered with snow, and the mountains so blue and grand.

Then all aboard girls, and off we go hair and scarfs flying all laughing with faces like roses, we seemingly, cut the air, then all in a second the thrill that comes with a spill, six girls deep, Oh, the

laughter, all take it in good part, for that is almost the best part of it, we all get right side up again, then, on, and, off, we go. I would not live in California and miss my slides for the world. I love it all, the snow, the ice and the wind biting our cheeks and making us hustle along, but I would like the thrill and fun that a real Toboggan Slide would give, and I mean some day to have a real Toboggan Slide 'up', and 'down' and 'over'.

I am a farmer's daughter and go to school every day, I am in sixth grade, I love my school and intend to go to College.

ARLEEN, P. PATCH,

Brome, Que.

(Age 12 years).

(Fifth Prize)

Although there are many other sports which I enjoy very much, I think that "snowshoeing" is the most enjoyable, because it is not only for fun that we go but we also learn lessons.

We learn to recognize the different trees in the woods, and the call of the birds, while if we were sliding we would have to be in some place where the snow is not too deep, and if we were skating we would have to be in one particular place all the time, but if you are out snowshoeing you can travel all over creation.

It is lots of fun for a party of girls to have a snowshoe club, and every so often, say every Saturday evening go for a snowshoe tramp. Supposing you would like to go over to your friends for the evening and the snow was piled up in the roads, strap on you snowshoes and tramp over. It's lots more fun than going in a sleigh and just as healthful.

One Saturday my girl friend and I went for a snowshoe tramp through the woods, the fir trees were laden with snow and underneath the trees in the snow we could see the tracks of the partridges where they had been with their little snowshoes. We got little pieces of wood off all the different kind of trees for specimens, we also got some spruce gum, we tramped all through the woods. In some places the fir trees were so close together and were so laden with snow that we could hardly get through. We saw rabbits and weasel tracks in the snow and once a rabbit ran across in front of us, we saw the white snow-birds and gave them some crumbs which we brought for them, when we went home we tramped our initials in the snow with our snowshoes, when we got home we had rosy cheeks and we were not all snow as we would have been if we had been out sliding, and we did not have any bumps as we might have got skating, we were just as good as new, of course we said we would go next Saturday for what better sport was there than snowshoeing.

Then in the spring every night as soon as school was out and every Saturday we would strap on our snowshoes and go to the sugar place to look in the buckets for a drink of sap and to whistle up the chickadee, and hear:—

"A tiny voice near by,  
Gay and polite, a cheerful cry,  
As if to say "Good-day, good sir",  
Fine afternoon old passenger,  
Happy to meet you in these places,  
Where Winter brings few faces."

The chickadee's cheerfulness is just as catching as measles and so we usually catch some of it.

Then we go to the camps and watch the men strap on their snowshoes to go and gather sap as the snow is two deep for the horses, then we watch them go from tree to tree gathering the sap in large pails hung on a "neck-yoke" which goes around their neck. At this same time those who are sliding are on the same hill they were two months ago and those who are skating are at the same rink they have been at all winter. They think it is fun (well it is some) but not near so much fun as snowshoeing. If I ever belong to a sports club it will be a snowshoes club.

FLORENCE B. BISHOP,

Bishop's Crossing, R. R. 1. Que.

(Age 12 years).

#### NOTES ON THE CONTEST

INTEREST in these contests grows apace. Where we had a dozen compositions for our first contest, twenty-five for the second, and forty for the third, this month's contest brought in seventy-two essays. Indeed, so strenuous has the work of judging become that we have handed it over to Mr. J. Egbert McQuat (whom many of our Young Folks will remember in connection with school fair work), who is a bear for work. This

month Mr. McQuat did the judging—by next month he will be thoroughly broken in, and will relieve us of the task of writing these notes on the contest as well.

The judge's general criticism is that in too many of the compositions sent not enough attention is given to punctuation, neatness is frequently forgotten, and in some brevity has been attained without wit. Specifically, the compositions heading the list of prize winners are noticeable for the enthusiasm of their writers. And this same enthusiasm will carry our Young Folks far in the direction of their goal if they apply it in their work when they grow up as they now do in their play.

We had so many good essays this time that we couldn't give prizes to all. We therefore picked out three of the very good ones and had them set up in type for publication under the title of Honorable Mention. These were: an essay on *skating*, by Grace Lumsden, Huntingdon; one on *sliding*, by Geraldine Forgrave; and a very cute little one on *making snow men*, by Rena Matthew, of Sawyerville, (age 7). Unfortunately we had not space for these, so we could not print them after all—but we enjoyed them. We also have read with a great deal of interest many of the other compositions, which, from the standpoint of sports, were divided as follows:

*Those who prefer skiing*—Therow Bennett, Bishop's Crossing; Evelyn Taylor, Ayers Cliff; Muriel Parkhill, Boynton; Raymond Sargent, Stanstead; Hugh L. McClary, East Hatley; Helen Thomson, Thurso; Edna Martin, Sawyerville; Marjorie Merrill, Sawyerville; Reta B. Martin, Sawyerville; and Enna Willett, New Richmond Station.

*Those who prefer skating*.—Gerald H. French, Eaton; Harry Bacon, Hector Benoit, Clayton Lowry, Darel Cummings, South Durham; Clarice St. Dizier, Massawippi; Maynard Sargent, Stanstead; George Johnson, Ayers Cliff; Kenneth Vancour, Ayers Cliff; Muriel Elam, Massawippi; Naomi Livvy, Stanstead; Jessie Holmes, Howick; Patience Strong, West Brome; Alex Gilbert, Sawyerville; Hazen A. Lowery, Sawyerville; Loyola Horan, Quinville; and Geraldine Laduke, Massawippi.

*Those who prefer sliding and tobogganing*.—Grenda G. Needham, South Bolton; Lillian E. Barr, Franklin Centre; Miriam Laflamme, Perce; Leila Ladd, Bondville; Gordon Harrison, Boynton; Marguerite Waddell, Hemmingford; Kenneth Hodge, Easton Corner; Almeda Fitzgerald, Shigawake East; Lennox Gavon, Chapeau; Edith Crooks, Grenville; Percy Smith, Ayers Cliff; Violet Miller, Sunny Bank; Ethel F. Barr, Franklin Centre; Elma Bustard, Hemmingford; Edna Merrill, Sawyerville; Lillian Gilbert, Sawyerville; Ileana Lowry, Sawyerville; Doris Lowery, Sawyerville; Ormond Lowery, Sawyerville; Annie Merrill, Sawyerville; Elsie Rowe, Franklin Centre; Isabel Beach, Cowansville; Hannah Horan, Quinville; Eunice Paige, Lennoxville; Gordon Laroche, Sawyerville; Burton Millar, South Durham; Verda Waldron, Sawyerville; Rose Stender, Ladysmith; Margaret Higginson, Stanstead; and Leola Miller, Sunny Bank.

*Miscellaneous*.—Cecil Cotman, Demers Centre, likes snowshoeing; George Hiskey, Mount Knsilla, snaring; Pearl Hearn, Cookshire, snow-balling; Rachel Woodburn, hiking; and Allan Fisher, Barrington, prefers playing with her big doll and sleigh.

### Canadian Poems of Sport

Selected By Penelope Young

To encourage the reading of Canadian poetry by Our Young Folks, Penelope Young has made the following selections of poems on sport, and has sent it in to us with the suggestion that it be published on this page, for the guidance of those in search of such poetry.

Birch and Paddle — Charles G. D. Roberts  
Said Me Canoe — Isabella Valancy Crawford  
Canoe Song — Isabella Valancy Crawford  
The Rapid — Charles Sangster  
Snowshoeing Song — Arthur Weir  
Skating — John Lowry Stuart  
The Song My Paddle Sings — E. Pauline Johnson  
In The Shadows — E. Pauline Johnson  
Canoe Song at Twilight — Laura E. McCully  
Canadian Sleigh Song — James Lewis Milligan  
Song of The Snowshoe Tramp — Wilson Macdonald  
The Song of the Skate — Wilson Macdonald  
The Skater — Charles G. D. Roberts  
On The Creek — Charles G. D. Roberts

# Woman's World

## Woman as a Consumer

By Jeanette Babb School of Household Science, Macdonald College.

NEVER was there a time in the world's history when it was so necessary that women should look to their laurels as good consumers or buyers. They are tempted on every side by the clever advertisement and by the variety as well as the attractiveness of the many articles displayed for sale, to buy things they think they want but really do not need.

They must learn to distinguish then between their *wants* and their *needs*.

They must also train themselves to recognize *quality* in all they buy.

They must know prices in comparison with quality and with values.

They must study how to apportion their income to meet the different needs of the members of their families in order to be able to minister effectively to their households thereby creating an atmosphere of well regulated and harmonious homes.

In our grandmother's and great grandmother's time women did not require special training to become good consumers as they were both producers and consumers. They made their own candles; raised their own sheep, spun and carded the wool, as well as weaving it into cloth; their garments both under and outer were made up in their homes. The pork, beef, mutton and lamb were raised, killed and prepared for human consumption. They made their own bread and butter. They grew, canned or preserved, or dried their own fruits and vegetables. They knew they were fit for the family's use because they saw how and where and under what conditions these were produced.

Owing to the introduction of machinery this has been all changed. The boys and the girls have left home to go into industry and so the great industries have grown and developed into that huge and complicated structure known as modern industrial life with its many social and economic problems. Due also to lack of help in the home the different processes of manufacturing were gradually taken out of the home until to-day woman is no longer a producer as she once was but largely a consumer.

The grave economic conditions existing in Canada to-day can be partially re-adjusted at least by the women of our land. Let us be more businesslike in our methods and not leave all this to the men. They will be glad to let us share the responsibility providing we show ourselves fit. Possibly we do not realize that women buy at least 75% of the commodities produced in the industrial world. Some writers put it as high as 90%. Then let us see to it that we do our part in wise spending of our incomes. In spite of the fact that we are largely consumers and not producers we can greatly aid production by a wise choice which creates a better demand thereby leading to a better production as well as aiding in a better consumption. We are creatures of habit and our earliest habits formed are due to imitation and most certainly it is displayed in the purchasing of commodities.

You say, where are we to get this training? In books which have been written by those who are capable of giving us the best of advice on these matters. In magazine articles so many of which are well written up to-day. Also the housewives by concentrated efforts in checking up records of purchases made and familiarizing themselves with the quality of the different commodities at every opportunity. The heads of departments as well as competent clerks in all our large stores are willing to co-operate with us in this matter if we but ask their advice. They enjoy serving the type of woman who knows what she wants and who is trying to learn how to buy.

The following are a few suggestions to aid us in making better purchases.

Choose your market carefully as to its sanitary condition, the honesty of the dealer in giving you accurate weight and measure.

Plan your meals for a week ahead if possible, making a list of supplies needed. Then consult your pantry list for staples and order at least a week's supply.

Buy such articles as sugar, tea, coffee etc., in large quantities. Such articles as

cornmeal and cream of wheat are better bought in small quantities as they do not keep well. This applies to perishable foods also. Go to the market and choose the latter for two or three days ahead if necessary. In going to the market you may sometimes change your plans if the available supplies make it desirable or necessary.

Watch the market prices in the daily papers and by visiting the different sources of supplies keep in touch with the season's prices and qualities. In other words learn to know the difference between real and apparent costs.

Plan what you will buy and when.

Know exact quantities — in buying groceries so many ounces or pounds never twenty-five or ten cents worth. In dry goods a few inches over is frequently of no use. In the case of cottons for undergarments certain widths cut to better advantage. See if you can save by buying in quantities.

Ask the price before giving your order.

One must know the nutritive value of foods. If the price is high, try to discover cheaper substitutes. Study your actual needs.

Check the dealer's weight by watching the scales — see that they are placed at zero — do not pay for the weight of the wrapping paper — have the trimming sent home from the butcher's with your roast and use them. Re-weigh and measure at home if you prefer to.

Know adulterants found in products and malpractice among dealers.

Know your needs. Do not buy anything because it is cheap. Bargain sales are tempting but not conducive to good buying. If things are reduced know the reason why. Bargain sales should only be purchased by those who are capable of judging quality in comparison with price.

Know how to identify manufactured products, their trade marks, labels, etc. Experiment with different products and when you get a good brand note it and stick to it.

(This article will be continued next month)



Husband—I forgot my umbrella this morning, dear.  
Wife (sarcastically)—However did you come to remember you had forgotten it?  
Husband—Well, I shouldn't have missed it, dear, only I raised my hand to shut it when the rain ceased.—"Passing Show".

## Food For The Sick

THE careful preparation of food is now recognized to be of vital importance to an invalid, and a valuable assistance, in many cases, to the physician, in hastening the recovery of a patient.

Few families are fortunate enough to escape illness entirely, and "happy the home" where mother can cook for the sick with the same degree of intelligence and skill as for the well. Correct feeding is an important factor in maintaining health and a most important factor in restoring health.

The diet for the sick should be simple—only a few kinds of food at a time and those plainly but very carefully cooked and seasoned.

A fluid diet which is prescribed in cases of severe illness includes: broths and clear soups of various kinds; beef juice and beef tea; cereal gruels; milk; raw eggs in combination with water, milk, fruit juices, cocoa or other fluid; and cream soups. A fluid diet should be given in small amounts and at frequent intervals.

A soft or semi-solid diet includes "soft cooked" eggs, toast, custards, junkets, blanc mange, gelatin jellies, sherbets and similar dishes.

A light or convalescent diet includes really all foods that may be prepared in a simple and easily digested form.

All meals should be served with strict regularity; a half hour of waiting may destroy all desire for food.

The appetite should be tempted by the appearance of the tray,—attractive dishes neatly arranged, no food slopped over, hot dishes hot and cold dishes cold when they reach the patient, a pleasant surprise in the shape of a pretty garnish, a flower or a new dish.

Always remember that the best means of stimulating the appetite is to have good food, well cooked, and attractively served.

The following recipes may prove helpful when cooking for the sick—

### Egg Lemonade

1 egg  
1 tablespoon sugar  
2 tablespoons lemon juice  
½ cup cold water

Beat egg slightly; add sugar, lemon juice and water. Beat well, strain, chill and serve.

### Egg Nog

1 egg  
2/3 cup milk  
1 tablespoon sugar  
Few grains salt  
nutmeg

Beat slightly, add sugar, salt and nutmeg; mix thoroughly, add milk and strain.

### Oatmeal Gruel

½ cup coarse oatmeal  
3 cups boiling water  
½ teaspoon salt  
Milk

Add salt and oatmeal to boiling water, boil 5 minutes over fire; cook 2 hours in double boiler. Force through a strainer, dilute by adding gradually hot milk or cream.

### Egg in Nest

Break egg and separate yolk from white. Beat white until stiff, adding a few grains of salt. Pile on a piece of toast, (dip toast first in boiling salted water), make depression in center and drop in yolk. Bake in a moderate oven until delicately browned.

### Snow Pudding

1 teaspoon granulated gelatin  
1 tablespoon cold water  
½ cup boiling water  
¼ cup sugar  
1½ teaspoon lemon juice  
White 1 egg

Make a syrup by boiling water and sugar five minutes. Soften gelatin in cold water, dissolve in hot syrup, add lemon juice, strain and set aside in a cool place; stir occasionally. When partially set, beat until foamy, then add egg whites beaten stiff and beat until mixture begins to stiffen. Pile lightly in a glass serving dish or pour into moistened mould. Serve with custard sauce.

### Custard Sauce

2/3 cup milk  
Yolk 1 egg  
1/8 cup sugar  
Salt  
¼ teaspoon vanilla

Beat egg slightly, add sugar and salt, mix and add milk slowly. Cook in double boiler, stirring constantly until it thickens; cool and flavor.

### Milk Sherbet

2 cups milk  
4 tablespoon lemon juice  
¾ cup sugar

Mix sugar and juice, add milk gradually. (The mixture may have a curdled appearance, but will be smooth when frozen). Freeze and serve.

# Culture by Conversation

By a member of the Radford Junior Institute

**R**EADING is a rich source of knowledge; observation is still better; but conversation is the best of all.

Confucius said that a single talk across the table with a wise man, was better than ten years study of books.

It must be acknowledged that our first duty is to speak; that is the chief business in this world, and talk which is the harmonious speech of two or more, is by far the most accessible of pleasures. It costs nothing; it is all profit; it completes our education; it founds and fosters our friendships, and it is by talk alone that we learn about our period and ourselves. By talk we learn more of the living thoughts and movements of the day, more important and mind quickening truths than in any other way.

Culture by means of conversation is more desirable to those younger and more progressive men and women, who are striving for culture while earning a living, and who desire to make, in the exercise of their calling or professions the most of all the means at their command for wider knowledge, more numerous ideas and greater efficiency in the exercise of their power.

The study of those subjects usually taught in our schools is, of course, cultivating and beneficial, but the study of books for a specific purpose never yet formed the mind of anyone. Books are dead things compared with the living speech of men and women. The mind and heart are nearly always shaped by intimate and familiar conversation which springs spontaneously and naturally among friends and acquaintances, operates unconsciously in forming the character, and in shaping one's aims and ambitions. This is the highest kind of education. It goes deeper, makes a more permanent impression, develops the mind more surely than books ever do.

Some periods in the world's history have been more intellectual than others. These periods are those in which conversation was more highly prized and cultivated. The age of Queen Elizabeth, that of Queen Anne and that of Louis XIV are distinguished as ages of conversation and, consequently, of high culture and great literary activity. The age of Queen Elizabeth is the first perhaps in which people met expressly for conversation, and is generally spoken of as "The Age of Conversation". It was in this age that Shakespeare and Ben Jonson had their famous "wit combats". It has been said that when these men departed they left an air behind them which alone was able to make the next two companies right witty. Conversation is indeed the greatest of all sources of inspiration, and thousands of people, owe all their success in life to their power of grasping new ideas, new suggestions thrown out in conversation. The greatest teachers of modern times were those who knew the value of conversation as an educational factor, who by familiar talks with their teachers and scholars, impressed new and vital truths on their minds, and inspired them to high thinking and noble living. It was they who introduced those new ideas and better methods in the art of teaching which have since been called the "new education".

Perhaps the best possible definition of true conversation is "The transmission of life from the living, through the living to the living".

The tendency of tutors is to teach too much from books and too little by word of mouth, hence the tendency is to overwork children, which accounts for the great proportion of weak minded adults.

It must be borne in mind that culture and conversation are two distinct things, and that one does not necessarily include the other. A man or woman may be a profound scholar with very little culture, or highly cultured with very little scholarship. A person of culture must be a person of the world, accustomed to mingle in good society and be familiar with good literature. A profound scholar may be a person apart from the world, a close student, a recluse, unaccustomed to society, not caring for it. Such a person with profound knowledge, may be awkward and uncouth in manner, shy and oppressed in the presence of strangers, and unable to express himself or herself with any degree of force or fluency in conversation. The person of culture is at home in any society, and is nearly always successful. High culture and profound scholarship, are indeed sometimes combined in the same person, and where this is found perfection is nearly attained.

In the best circles of Europe, conversation is cultivated and practised, not only as a means of recreation, but of education, as an accomplishment more necessary than book-learning—in fact, as the means of perfection in culture. It is regarded as one of the chief things in the formation of character

in the making of a lady or gentleman, and as the crowning achievement in social intercourse.

Perhaps we to-day are too intent on work, or rapidity and despatch in business, on post-haste in all our affairs, so impressed with the idea that "time is money" that we can hardly afford to spend any of it in more conversation.

The advantages to be gained by conversation are many. What we learn is more than we ourselves are aware of. To illustrate this let a reporter come and have a talk with you, and let him print it, and you will be astonished at the quantity of pointed matter it makes. One can tell more in five minutes than one can write in an hour, and one can often in a ten minute talk with a friend, get the substance of a ten column article in the newspaper. Some people have a way of putting things that gives you a whole history in a few minutes. Clover people are the best encyclopaedias. By drawing people out in conversation you can get more fresh thoughts than if you read forty columns a day. A wise questioning is the half of knowledge and you do not get tired of conversing as you do of reading. People generally talk of what is uppermost in their minds. They are eager to tell you of some experience they have had, or some book or story they have read. As to the influence of conversation, what one says be it true or false has often more influence upon the lives and especially upon the destiny of those to whom one speaks, than what one does. What is told us especially in youth, sticks; it is impressed on the mind in so many ways,

departures, if she does not try to keep step with him. And what could be more profitable than interesting and instructive conversation in the home, not only for the adults, but for the children.

In Women's Clubs, and especially in Women's organizations in the country, the method which has proved most successful is for each member to take a subject, and after studying it thoroughly from all viewpoints, to prepare a paper. The paper is read to the members, and the subject is then debated. In this way each member takes part in the resulting conversation, and each is therefore familiar with the others' ideas. An exchange of opinions follows, and at the conclusion of the discussion, all have taken part, and one member is as well informed as the other. In presenting ideas and opinions at such a discussion each member should endeavour to be as grammatical as possible. The conversation on a particular subject should not, however, take place only at the club meetings. It should be initiated afterwards at home, as by this means the benefits to be derived; the culture sought after, can be introduced to those at home, by familiarly conversing with those at home about the various views and opinions expressed at the club.

After all, the first place for conversing is in the home. The most familiar conversation takes place there, and for this reason, and the fact that we are more at our ease there than anywhere else we are apt to be careless in our speech. The obvious thing, therefore, is to first govern ourselves in this respect at home. It is said that women generally divide themselves into three classes, the first and lowest class talk about other women, the second class about things, and the third and highest class about ideas. Whether this is fact or fiction it can safely be said that the best way to start seeking culture by conversation is to familiarly and grammatically discuss ideas at home.

## Investigational Cookery

School of Household Science, Macdonald College.

### Experiments With Tea.

Experiments were carried out with tea to determine the best method of preparing it; color and flavor were the determining factors.

The proportions used throughout the experiment were 1 teaspoon of tea to 1 cup of water; in all cases the teapots were heated before making the tea.

The following methods were used:

Method I. The tea was put in a tea ball, the ball placed in boiling water and allowed to stand, (not boil), for three minutes. The ball was then taken from the pot.

Method II. The tea was put in a strainer, strainer placed over tea pot, boiling water poured over it and allowed to stand, (not boil), for three minutes. The strainer was then removed.

Method III. The tea was put in tea pot, boiling water added and allowed to stand three minutes. The tea was then strained into another pot.

Results — The tea made by pouring the boiling water directly on the tea (method III), gave the best results as to flavor and color.

voice, tone, look, action, all speak together. While what is read to us enters the mind only through the eye or the ear, and leaves but a comparatively faint impression. The language of conversation being simpler and more natural than that of composition is more easily comprehended and carries the thought more readily into the mind. This is why a spoken speech is a hundred times more effective than one that is read.

There is scarcely any sphere in life in which conversational power may not become of incalculable value. It is, in fact, the means by which the lawyer, the physician, the clergyman and the politician gains the confidence of his fellow men and attains the ends he aims at. The man of more learning is of small account compared to the man who talks well. Like every other art, however, the art of conversation must be founded on knowledge and good sense. To this end it is necessary to converse familiarly with experienced and cultivated people. The daily increasing club-life that is going on among us is proof that conversing is the most cultivating and refreshing of all social and intellectual recreations. At these clubs we can discuss live questions with living people, and thus refresh our souls more completely than we can in any other way.

Women especially realize the benefits of these organizations for intellectual improvement. They see that they are going to "get left" if they do not keep up with the men in this respect. For how can the wife, confined to her narrow home duties, and seldom seeing anyone but her children and servants, expect to continue to be an attractive companion to her husband, who is every day conversing with people full of new ideas, new projects, and new

## Report of Quebec Women's Institutes

### ARGENTEUIL COUNTY

THREE of the five Women's Institutes in Argenteuil County—*Argenteuil, Jerusalem-Bethany* and *Lakefield* have sent in live reports. Each of these has sent donations of money and clothing to the Children's Memorial Hospital, Montreal. *Argenteuil* also donated money to the Grace Dart Home. Three new members were enrolled. *Lakefield* provided clothing for a poor boy in the community. *Hillhead* and *Upper Lachute* have held meetings, but have failed to report.

### BONAVENTURE COUNTY

No reports have arrived from Bonaventure.

### BROME COUNTY

*Foster* and *South Bolton* have had demonstrations on the use of the phonograph in the school, and *Foster* is placing phonographs in two of the local schools, as well as adding books to their libraries. Christmas parcels were sent to the sick and shut-ins, and plans are being made for a community evening. *South Bolton* has added a large folding table to their club room equipment. A social evening was held, and plans made for a Christmas tree for the children, and for sending comforts to the sick. *McNeil's Crossing* is planning to meet every two weeks for the purpose of working for a sale in the spring.

### CHATEAUGUAY COUNTY

*Howick* is one branch that never fails to send a full report of the meetings. Papers were read on "The Art of Housekeeping", "Christmas Customs in Other Lands" and "Your Brother's Keeper". The latter subject proved of especial interest being discussed from the standpoint of communicable diseases among school children, and methods of suppressing them.

The visit of "Jack Miner" to Montreal was of interest as this institute has placed Bird Books in the Schools as a means of inducing the children to study the birds of Canada. The new branch in this county has chosen as its name "Aubrey-Riverfield". It has enrolled four new members. A very interesting talk was given by Miss Morris on a visit to Jack Miner's bird sanctuary. Suggestions for inexpensive and useful Christmas gifts was another subject discussed.

### COMPTON COUNTY

Five out of the eight branches in Compton County have reported. Interest in *Brookbury* Institute centres largely around the community hall which

is proving a great benefit to the district. The Tuxis boys have been granted the use of this hall for basket ball during the winter. Letters of enquiry are being received from other places as to the methods of procedure to raise money for the building of such a hall. We would suggest as a starting point,—organize a Women's Institute.

At *Sawyerville* "Household Hints" was the subject of discussion. One new member was enrolled. A card party and dance is being planned as a means of replenishing the treasury. *Cookshire* reports a most interesting and instructive lecture on "Chemicals from Wood". *Bury* is arranging to hold a sale and bazaar. *East Clifton* held a social and debate with good financial returns. This Institute has brought games for use in the schools. Flowers have been sent to members and others who are ill.

#### DRUMMOND COUNTY

No report from *Union Gore*—we are glad to welcome this new Institute to our number. This branch is sewing and knitting for a bazaar to be held later and is serving hot cocoa to the school children. A paper was read at the meeting on "The Christmas Spirit and Christmas Giving."

#### HUNTINGDON COUNTY

*Dundee* is preparing to hold a bazaar. In connection with this event there will be a cooking contest in bread, buns, cakes pies and cookies for which prizes will be given. "The Story of the Union Jack" was the subject of a paper and discussion.

#### MEGANTIC COUNTY

Again we notice that only four of the five branches in this county have reported. May we hear from *Kinnear's Mills* next month? "How to take Care of the Hands" and "Better Health" were titles of readings given at *Crawfordville*. *Inverness* packed a box of supplies which they sent to the Girls' Industrial School at *Sweetsburg*. A paper on Child Welfare was read. *Leeds Village* is planning to hold a card party December 28th. *Lemesurier* had a demonstration on knitting sweaters. Platform curtains have been provided for the community Hall. A Christmas Tree is being arranged for. A paper on "Legislation" was read.

#### MISSISQUOI COUNTY

*Noyan*, after routine business spent the afternoon in preparation for a Christmas Tree. *Dunham* had two helpful papers on the seasonable topics—"Inexpensive Christmas Gifts" and "Our Year's Work and Thought for the Closing Year". *Cowanville* had a shower of miscellaneous articles for the Girls' Industrial School, *Sweetsburg*. A paper was read on "Noted Women of Canada", and an interesting discussion followed. We hope to hear from *Stanbridge East* next month.

#### OTTAWA COUNTY

Two out of five branches have reported. *West Templeton*—"Quebec's Legends and Resources" was the topic of ten minute talks by the members. A sewing bee was held to make clothes for a needy family. This branch is promoting the building of a skating rink, and public meetings are being held to arrange for same. A Christmas treat was given the school children. An evening is being set apart for community singing practice.

*Wakefield* held a successful box party which netted \$69.60. Arrangements have been completed to furnish hot cocoa to the school children. One new member joined. Suggestions for increasing interest in Institute work were made and discussed, and no doubt will bear fruit in the future.

#### RICHMOND COUNTY

Two new branches have been organized in this county, and they are the only ones to report this month. *Melbourne Ridge* starts with fifteen members. Their first work is to establish a library. We are sure to hear from them in the future. *Dennison's Mills*—Miss Poole of *Macdonald College* was present at the organization of this institute, and spoke on W. I. History and organization of work. Twelve members joined and are enthusiastic in the work "For Home and Country."

#### SHEFFORD COUNTY

*Shefford Mountain* enrolled one new member. The theme of their monthly meeting was "Christmas Decorations."

#### SHERBROOKE COUNTY

Routine business, reports of committees and exchange of Christmas greetings, followed by a social hour over the teacups filled a pleasant afternoon at the meeting of the *Orford Branch*.

*Montreal Road* sent a letter of sympathy and good wishes to a member whose family is shut in by sickness, and dispensed other Christmas cheer.

*Belvidere* is much interested in public health topics, especially the prevention of tuberculosis. A talk was given on this subject followed by a dis-

ussion. *Lennoxville*—the following Christmas remembrances, were dispensed: \$10.00 to the Sacred Heart Hospital. *Sherbrooke*, \$10.00 to the I. O. D. E. Tubercular Sanitarium, *Sherbrooke*, and a box of Girls' Books donated by the members, packed and sent to the Girls' Industrial School at *Sweetsburg*. This box contained over 80 volumes. Soap wrappers are being brought in by the members and forwarded to the Travellers Aid, *Montreal*. The monthly programme consisted of a review of "How the Watson Family Spent Christmas", by *Nellie McCung* which provoked considerable amusement. This branch took part in the ceremony of unveiling the Soldiers' Memorial Monument and placed a wreath on it.

#### STANSTEAD COUNTY

*Beebe Juniors*—the only girls' institute in *Stansstead County* is beginning work with 21 members. A paper was read at the December meeting entitled "Making Christmas Last a Year." Plans were made for the sending of Christmas cheer to lonely and needy homes. *Hatley, North Hatley* and *Tomifobia* sent generous Christmas boxes to the Girls' Industrial School at *Sweetsburg*. *North Hatley* provided Christmas baskets for needy families and voted \$25.00 to the school board to assist in carrying out medical inspection of the children. *Hatley* is arranging to have public lectures on topics of general interest during the winter months. One new member was enrolled. *Tomifobia* assisted with a community Christmas Tree. *Way's Mills* is planning to hold a

### When Green Leaves Come Again.

O where do fairies hide their heads  
When snow lies on the hills,  
When frost has spoiled their mossy beds,  
And crystallized their rills?  
And draughts of dew they cannot sip  
In circles o'er the plain,  
And draughts of dew they cannot sip  
Till green leaves come again.

Perhaps in small blue diving-bells  
They plunge beneath the waves,  
Inhabiting the wreathed shells  
That lie in coral caves.  
Perhaps in red Vesuvius  
Carousal they maintain;  
And cheer their little spirits thus  
Till green leaves come again.

Or maybe in soft garments rolled  
In hollow trees they lie,  
And sing when nestled from the cold  
To while the season by.  
There while they sleep in pleasant trance,  
'Neath mossy counterpane  
In dreams they weave some fairy dance,  
Till green leaves come again.

When they return there will be mirth  
And music in the air,  
And fairy rings upon the earth,  
And mischief everywhere.  
The maids, to keep themselves aloof,  
Will bar the doors in vain;  
No key hole will be fairy-proof  
When green leaves come again.

T. H. BAGLY.

bean dinner and community dance. Comfort bags and flowers were sent to the sick at Christmas.

A unique method of presenting Christmas gifts for the Children's Memorial Hospital, *Montreal*, was adopted by *Beebe* institute when each member answered the roll call by placing her contribution on the Christmas Tree, the donations being forwarded to the hospital later. This branch held a community Christmas Tree, and is providing a fine skating rink for the school children. Three new members joined.

#### RICHMOND COUNTY

*Dennison's Mills* a new branch, enrolled one new member. A successful joint meeting of the Women's Institute and Farmers' Club was held and plans made for future work.

MRS. W. S. ARMITAGE,

Convenor, Publicity Committee,  
Quebec Women's Institutes.

### Women's Institutes Notes

MISS ROACH and Miss Poole spent a busy month judging at the following:—The *Sherbrooke* Exhibition, the *Stansstead, Brome* and *Richmond County Fairs*, the *Ayer's Cliff, Howick, Richmond, Bishop's Crossing, Bury, Scotstown, Calumet, Foster South Bolton, Brome, St. Anicet, Huntingdon, Havelock* and *Arundel School Fairs*. Very interesting and successful competitions in

judging cake and bread were conducted for the girls at the School Fairs.

A three days Convention for *Bonaventure County* was held in *New Carlisle*; this was reported in a previous number of the Journal.

Girls' Clubs or Junior Institutes have been organized at *Hopetown, Shigawake* and *Sutton*; and *Women's Institutes* at *Aubrey* and *Riverfield, Gore's Dennison's Mills* and *Melbourne Ridge, Huntingdon, Hemmingford* and *Franklin Centre*.

Very successful "One Day" short courses were held at the following branches, *Lakefield, Argenteuil, Upper Lachute, Jerusalem* and *Bethany, Hillhead* and *Shefford Mountain*.

The twelve *Women's Institutes* in *Pontiac County* were visited by *Miss Roach* and talks given on "Institute Technique", "Finishing of Walls and Woods" and "Table Setting".

Demonstrations on "Desserts" were given at *Shigawake* and *Hopetown* and on "School Fair Work" at *Arundel* and *Havelock*.

*Miss Roach* was present at the opening of a Community Hall which has been bought and furnished by the *Dundee Women's Institute*, and while there judged a competition in Foods held in connection with a bazaar.

#### Quebec Women's Institutes' First Life Member

Tuesday, November 13th, 1923, will be a day long remembered by the *Women's Institutes* in *Pontiac County*,—on this date *Miss Abbie Pritchard*, a member of the *Wyman Institute*, was presented with a Life Membership in the *Quebec Women's Institutes* by the County.

*Miss Pritchard* has always been interested in women's work, and since the organization of an institute in *Wyman* eleven years ago, has been a most active worker. She has been the one and only Secretary-Treasurer in the County Organization, and the Secretary in the Provincial Organization since its birth. From the very beginning of Institute work in *Quebec*, *Miss Pritchard* has done much to advance its cause, and has always been ready and most willing to take a full share in all its activities,—in the Branch, County, Provincial and National Organizations. It is, therefore, most fitting that one so worthy should be our first life member in the *Quebec Women's Institutes*.

### The Advantages of Beekeeping

BEES can be kept in town or country, by young or old, rich or poor. For one entering the business on a large scale with more than one apiary, the country, of course, is necessary where larger sources of nectar are available. A few colonies can, however, be kept on a small town lot or even on the roof of a house for the bees will fly to a distance of two or three miles for nectar. Bees can be kept in situations which are useless for any other enterprise.

There is scarcely a spot in *Canada* where a few colonies of bees cannot be kept profitably. An abundance of nectar secreting flowers with a high average of favorable weather for the secretion and gathering of nectar makes *Canada* an excellent country for beekeeping.

Almost anyone can keep bees, and without investing in land or expensive equipment a man or woman who has the aptitude can learn to produce an article of food that is unsurpassed for quality and which will keep in good marketable condition even from year to year. It is difficult to state the amount of honey that will be obtained from an apiary, as this will vary in different locations and seasons. Most localities, however, will be covered if it is put at from 50 to 150 pounds per colony in an average season. With proper management one or two colonies will yield enough honey for the average family.

Beekeeping affords a pleasant outdoor occupation during the best season of the year. As a hobby for office men it provides a profitable and interesting recreation. For teachers and students it offers an occupation for the summer vacation, which is educational and remunerative. Many students have paid their way through college by keeping bees during the summer. Many are finding it a profitable auxiliary to other lines of work. As an exclusive business, many find it well worth while.

Beekeeping not only gives one a crop of honey and a little wax, but fruit and seed growers are also benefited by having bees in the vicinity of their orchards and fields. Larger crops of fruit and seed are obtained by cross pollination of the blossoms, and honey bees are important agents in this work.

C. B. GOODERHAM,

Dominion Apiarist.

**Feeding of Lambs**

**S**HEEP, more than any other class of farm animals, are benefited by frequent changes of pasture. When kept on one pasture continuously they graze certain portions very closely; but the parts grazed showed have a chance to recover. The same amount of pasture will give much better results when divided into two or more fields, and grazed alternately.

Quick, uninterrupted growth from birth to marketing is absolutely necessary for well finished profitable lambs. Breeding stock, whether ewes or ram lambs, should be kept growing. While the pastures are good and the ewes are milking well the lambs may thrive without any other food, although larger gains are possible when grain is fed. Grain never gives such returns as when fed to young growing animals. In the latter part of July, however, the pastures lose their early palatability and the ewes begin to dry up. Unless there is abundant range at this time there is danger of the lambs being under-nourished. Green feed in the form of pasture or as a soiling crop, and grain will give good returns if fed at this time. Owing to labour cost, pasturing is the only practical way to feed clover aftermath. Oats and peas, or rape, make excellent summer pasture. While rape is good feed, sheep should not be closely confined on rape alone but should have the run of a grass pasture. An ideal arrangement is to have the rape field adjacent to some pasture, and arrange the gate so that the lambs can go from the rape to the pasture at will. If grain is fed before the lambs are weaned it should be fed in a lamb creep. This creep should be constructed so that the lambs can enter, but the mothers are prevented owing to the limited size of the opening. Grain fed to the lambs will give better results than if fed to the entire flock.

March and April lambs should be weaned and put on fresh nutritive pasture early in August. When the lambs are weaned early and put on clean ground it lessens the danger of their becoming infested with internal parasites. At this time the ram lambs should be separated from the ewe lambs and weathers. All uncastrated male lambs of intended for breeding purposes should be disposed of at once. After August, bucks develop on odour and strong taste. This spoils the appetite for lambs, and decreases consumption. As a result the market becomes glutted and prices fall. This can be avoided by castrating all market ram lambs in the spring or by selling the bucks early in the summer. The ram lambs intended for breeding purposes should be put on a fresh separate pasture, either clover aftermath, oats and peas, or rape, and given one-half pound of grain per day. The ewe lambs and weathers may be given the same treatment.

At the Fredericton Station it has been found practical to wean lambs as early as July 15, by putting the lambs on rape with access to pasture. On July 15, 1922, a mixed lot of Shropshire and Cheviot lambs were weaned and put on rape. These lambs made average daily gains of .407 pounds for the next thirty days as compared with average daily gains of .240 pounds made by a lot of lambs of similar character which were left at pasture with their dams. The lambs on pasture with dams were weaned on August 14, and given the same treatment as the lambs weaned on July 15. In a thirty-one day period beginning August 14 the early weaned ewe lambs and weathers gained an average of .373 pounds per day as compared with average daily gains of .241 pounds made by the lambs

weaned on August 14. In all cases the early weaned lambs made the most satisfactory gains. Owing to the longer rest the dams of the early weaned lambs were in better shape for the fall breeding season.

JOHN MacKENZIE,  
Asst. Supt.,  
Experimental Station,  
Fredericton, N. B.

**Aluminium Honeycombs**

**T**HE Bee Division of the Experimental Farm at Ottawa made tests in 1920 and 1921 of the use of aluminium combs. These combs resemble a natural comb in form. They are given a coating of wax by dipping before being placed in the hive. From the experience of the two seasons, these combs have not proved satisfactory. During the trial with one colony in 1920, the bees worked on only three of the combs during the season. In the fall, the colony was so reduced as to make it necessary to




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It is remarkable how many cases have been reported similar to this one. Many women are poorly at such times and get into a weakened, run-down condition, when it is essential to the mother, as well as the child, that her strength be kept up.

Lydia E. Pinkham's Vegetable Compound is an excellent tonic for the mother at this time. It is prepared from medicinal roots and herbs, and does not contain any harmful drugs. It may be taken in safety by the nursing mother.

unite it with another colony for wintering. In 1921, at the commencement of the clover flow, another colony was placed in a hive with aluminium combs in the brood chamber, and although the honey flow was very heavy, the bees practically refused to accept the metal comb, even though the hive contained the three combs that had

been worked on the previous year. In the fall, only four of the combs had been used, so the bees were shaken on to wax combs which were immediately accepted, and the colony built up rapidly. A further trial with these combs was made last year with practically the same results.



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**A Destructive Orchard Pest**

Gas tar, axle grease, and paints containing considerable quantities of benzine or turpentine should not be used on apple trees with safety.

**WRAPPERS**

Wrappers of various kinds may be used to serve the same purpose as the washes. Among the many materials recommended are the following:—

1. Heavy wrapping paper.
2. Wood veneer.
3. Newspaper, several thicknesses.
4. Building paper.
5. Cloth.
6. Cotton batting.
7. Moss.
8. Tarred paper, but this is often

injurious to the bark.

9. Galvanized screen cloth 14 meshes to the inch and 18 inches wide. This is the one I prefer as it is cheap when the time factor is considered and more effective than any of the above mentioned materials. In borer infested regions put these protectors on when planting but in older trees remove the borers and then apply them. A cotton batting collar should be placed between the screen and the tree at the top. An added advantage is its use against injurious mice, rabbits, and other rodents. However, according to *Somes* they "afford a splendid hiding place for woolly aphids".

Any of these protectors should be tied at the top and mounded up around

the bottom. With the exception of the screen protectors they should be put on in May and removed in September.

*Carbon Bisulphide* may be used with considerable success against the borers. The safest and surest method is to tap the channel by means of a small hole and inject a few drops with a medicine dropper. After injecting this liquid close the holes with grafting wax or moist earth to keep the fumes in. From tests made this year our results were not entirely satisfactory as several of the borers ate holes through the wax and threw out castings.

**OTHER REMEDIES**

*Mounding.* This is probably the most available preventive measure for trees

in the nursery. This is also used on older trees to force the female to lay her eggs higher up the trunk where the borers may be more easily reached in worming.

*Host plants.* Since the presence of host plants, either natural or cultivated in close proximity to the orchard offer a constant menace they should be removed to not less than 300 feet from the orchard or carefully examined and the borers destroyed.

*Clean Culture.* They appear to favour neglected orchards. Therefore, remove water shoots, weeds and long grass from around the trees.

*Spraying.* The regular apple sprayings, such as recommended should kill the beetles which feed on the foliage and bark.

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"The tube of Rat-Nip I bought from you did the work for the rats about the place at that time, killing about 40 in all", writes C. A. Cox, Franklinville, N. C.

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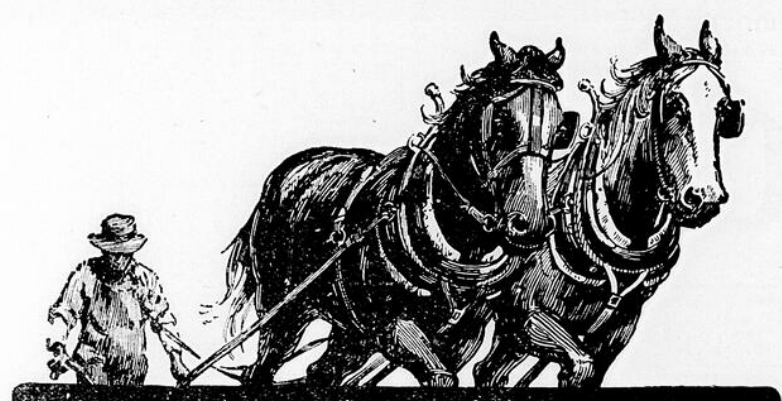
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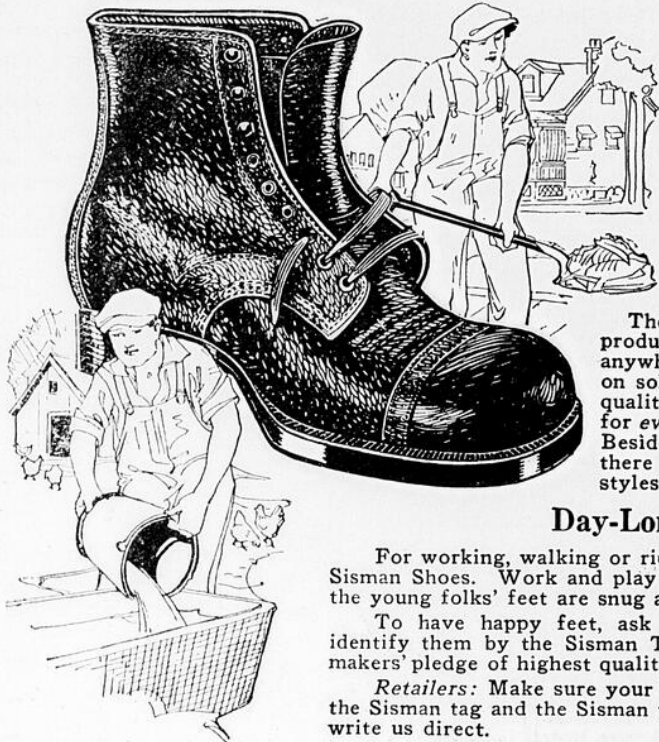
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# SISMAN SHOES

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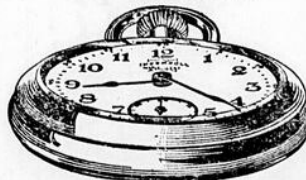


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