

# *The* JOURNAL of AGRICULTURE AND HORTICULTURE

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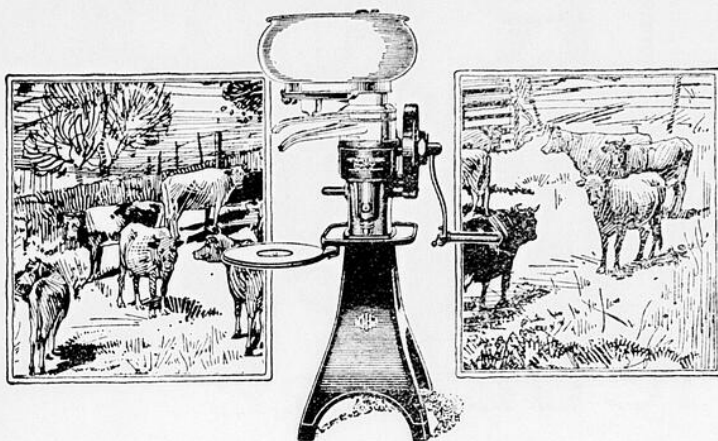


NEAR ST. GENEVIEVE

*(Photo by Gladwish & Mitchell)*

PUBLISHED BY THE DEPARTMENT OF AGRICULTURE OF  
THE PROVINCE OF QUEBEC.





**McCORMICK-DEERING**  
[Primrose]  
**Ball-Bearing Cream Separator!**

**T**HIS is the machine that set the pace in modernizing the cream separator. From farm to farm went the good word about the new efficiency that eased the daily work and added to the daily cream saving. The demand for the *ball-bearing* machine—McCORMICK-DEERING—grew by leaps and bounds. Thousands upon thousands invested in the simpler, easier-turning, cleaner-skimming separator. Today these thousands are better friends than ever of the durable ball-bearing machine.

The best test of success and popu-

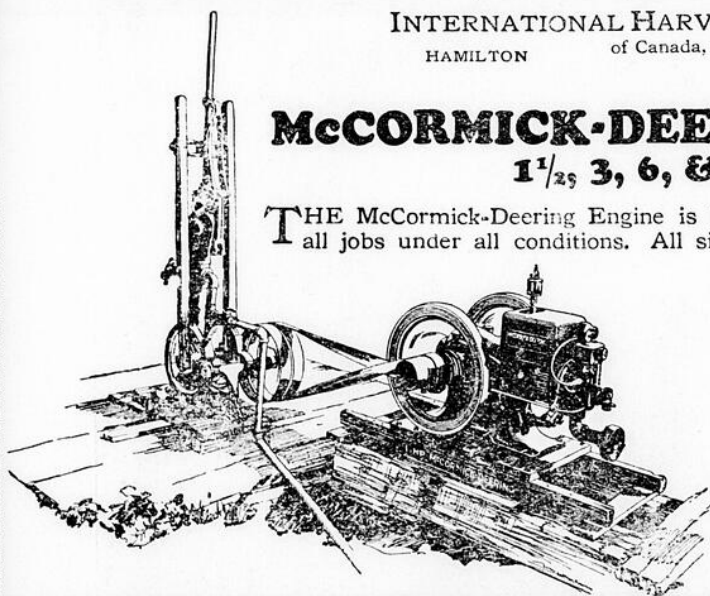
larity is the testimony of owners. When you buy a cream separator, ask the men and women who use McCormick-Deering day in and day out. Satisfy yourself about every point—*cream saving, cleaning, turning, sanitation, lubrication, simplicity, durability and service.* Go by what they say about the ball-bearing machine.

Made by the Harvester Company. Sold everywhere by the McCormick-Deering agents. You will profit by investing in the McCormick-Deering Separator.

INTERNATIONAL HARVESTER COMPANY  
HAMILTON of Canada, Ltd. CANADA

**McCORMICK-DEERING ENGINES**  
**1 1/2, 3, 6, & 10 h. p.**

**T**HE McCormick-Deering Engine is built for successful operation on all jobs under all conditions. All sizes have removable cylinder, replaceable main bearings, enclosed crankcase, high-tension magneto, throttle governor, and simple, efficient fuel-mixer. There is ample provision for cooling. Working parts are protected from dust and sand. All worn parts can be replaced at moderate cost. Altogether, the McCormick-Deering is the ideal engine for the man who wants dependable, efficient, long-lived power.



Step on the gas and away goes your car — instantly, smoothly! Avoid carbon deposits and knocks with



# White Rose Gasoline

**COSTS LESS PER MILE**

Instant pick-up. Drives your engine to the maximum of its capacity. Double distilled, free from dope of any sort and always uniform in quality. Notice the difference in your repair bills after using \*White Rose Gasoline for a year.

\*Products of  
CANADIAN OIL COMPANIES, LIMITED

## RAMSAY'S PAINTS and VARNISHES



FOR SALE BY  
ALL DEALERS

### How She Got Rid of Rheumatism

Knowing from terrible experience the suffering caused by rheumatism, Mrs. J. E. Hurst, who lives at 204 Davis Avenue, E-291 Bloomington, Ill., is so thankful at having healed herself that out of pure gratitude she is anxious to tell all other sufferers just how to get rid of their torture by a simple way at home.

Mrs. Hurst has nothing to sell. Merely cut out this notice, mail it to her with your own name and address, and she will gladly send you this valuable information entirely free. Write her at once before you forget.





Since time immemorial, the farmer has been noted for his constant effort to raise the quality of his products, striving for better bred stock, more fertile soil, greater purity of dairy products. From this honest effort of toil we have fashioned our policy of giving the farmer a fencing bearing all the qualities "good" fencing should have.

We are in a position to assure quality as we control every detail in the manufacture from "ore to finished article" and thus INVINCIBLE FENCE embodies all the qualities necessary to long life.

The steel is made by the Open Hearth process, producing a quality conceded to be the best for the manufacture of fence.

The wire is heavily galvanized with a coating of the best zinc available and will last indefinitely. Galvanizing is the most important factor in the life of fence as upon it solely rests the protection of the metal.

In the weaving, allowance is made for expansion or contraction, by coiling the lateral wires, which allows the fence to "give", yet holding it taut at all times.

The close formation of the lock enables a solid grip of the wires, yet allows such flexibility as necessary.

**INVINCIBLE FENCE IS A QUALITY PRODUCT AT A SAVING TOO IN PRICE**

All Invincible Farm Gates are Hot Galvanized

**THE STEEL COMPANY OF CANADA LIMITED**

HAMILTON

MONTREAL

**Invincible FENCING**

Carried in Stock by dealers in nearly every city, town and village in Canada.  
If you cannot locate a convenient dealer write to us.



The Steel Company of Canada, Limited  
Dept. K Montreal

Please send copy of Invincible Farm Fence Catalogue illustrating all Styles.

Name .....

Town .....

County .....

Province .....

### FOR SALE—Farm in the Laurentians

"HILLCREST" farm comprising about 80 acres close to ST. AGATHE Village and opposite to Lac Des Sables to which there is a permanent 12 foot right-of-way. There is a combined stable, barn and dwelling and 2 workmen's cottages on the farm, besides implement shed, small brooder house, piggery and hay barn. The farm cottage adjoining the barn is of substantial character having about 10 rooms, 3 bathrooms, hardwood floors, etc., and each of the other cottages has 5 rooms. The barn building is on solid stone foundation, brick superstructure with steel beams, terra cotta ceilings and cement floors and the cow barn is finished in white glazed tile brick, equipped with all up-to-date implements. This farm has been used for a Dairy Farm but could be profitably split up for subdivision purposes or used as a Club for summer and winter sports or as a country Estate. Price very reasonable.

**THE ROYAL TRUST COMPANY**

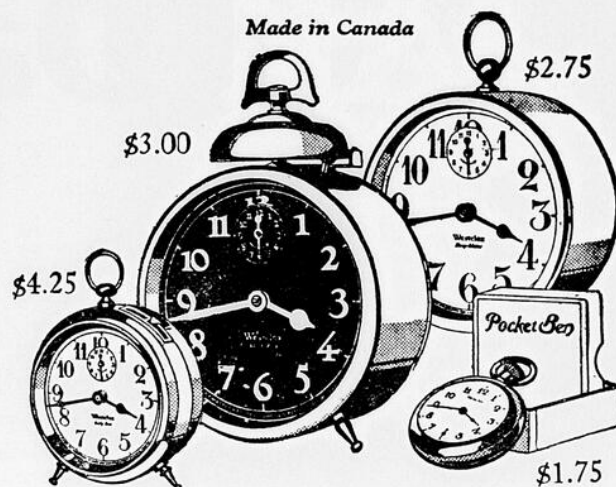
Real Estate Sales Dept.

105 ST. JAMES ST.,

HARBOUR 4221

## Westclox

Made in Canada



### Reliable time for farmers

**L**ONG before sun-up, these Spring days, Westclox cheery voices are often heard helping men get away to a good start, so chores and breakfast will be over promptly.

Helping women-folk, too, in the farm house. Keeping the daily schedule of tasks

from lagging.

Westclox are thoroughly dependable. Sturdily made here in Canada to keep accurate time. Priced from \$1.75 to \$5.50.

Black Bird, \$3.00, has a convenient night dial. Pocket Ben's good watch company, out-doors or in, \$1.75.

WESTERN CLOCK CO., Limited, PETERBOROUGH, ONT.

|         |          |         |             |                |            |         |
|---------|----------|---------|-------------|----------------|------------|---------|
| Big Ben | Baby Ben | America | Sleep-Meter | Jack o'Lantern | Pocket Ben | Glo-Ben |
| \$4.25  | \$4.25   | \$1.75  | \$2.75      | \$3.75         | \$1.75     | \$2.50  |



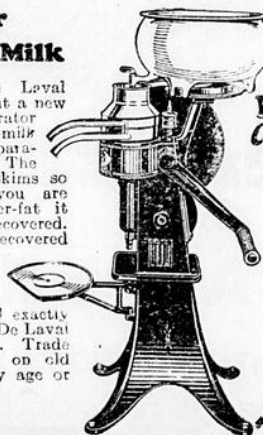
### The butter-fat you leave in the skim-milk won't buy the baby any shoes

The loss of only 25 cents' worth of butter-fat a day costs you \$91.25 a year—enough to keep the whole family well shod, and then some. Thousands of farmers have stopped the waste of much more butter-fat than that by replacing their cream-wasting separators with new, clean-skimming De Laval's.

Never in the history of centrifugal cream separators has there been a machine to equal the new De Laval—for clean skimming, easy turning or durability. It has the wonderful new "floating" bowl which runs smoother and easier, and eliminates vibration. It will give you more and a richer cream than you have ever gotten before.

### Skim Your Skim-Milk

Ask your De Laval Agent to bring out a new De Laval Separator and run the skim-milk from your old separator through it. The new De Laval skims so clean that if you are losing any butter-fat it will surely be recovered. Have any cream recovered in this manner weighed and tested at your creamery, and then you can tell exactly how much a new De Laval will save for you. Trade allowances made on old separators of any age or make.



Sold on easy terms or installments. See your De Laval Agent or write us direct.

FREE Catalogs



THE DE LAVAL COMPANY, LTD.  
Montreal Peterborough Winnipeg Vancouver  
Send catalog checked—Separator ☐ Milk ☐  
Name \_\_\_\_\_ Town \_\_\_\_\_ Prov. \_\_\_\_\_ No. Cows \_\_\_\_\_ R.D. \_\_\_\_\_

**See and Try an Improved DeLaval**

# 50 Miles an Hour All Day Long ~

*With Ease to Car and Comfort  
to Passengers*

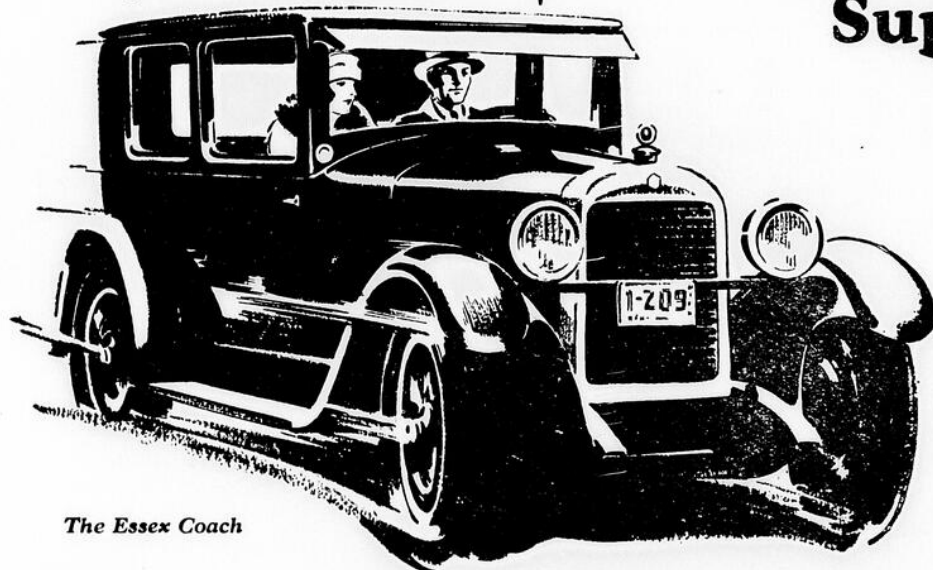
This is far below the maximum speed of the Essex Super-Six. Yet it illustrates another brilliant side of Essex performance — the ability to cover long distance so smoothly and easily that neither car nor passengers are conscious of the effort.

A level, road-skimming riding ease, and smooth, silky power give a riding sensation that is like flying.

Flashing pick-up, positive brake control and easy steering give nimble, fast and safe going in traffic.

The new Essex Super-Six is a triumph of engineering—for long wear, accessibility and lowest operation and maintenance cost.

Five beautiful new bodies meet every requirement of utility, convenience and fine appearance.



*The Essex Coach*

## ESSEX Super-Six

COACH \$885  
COUPE 885  
SEDAN 960

*All prices f. o. b. Windsor, taxes extra*

The reception of the new Essex Super-Six has been instantaneous, overwhelming all past Essex triumphs in interest, enthusiasm and sales. And retail orders continue to exceed the largest output in Essex history.

## The Super-Six Principle Amazingly Revealed

### Legare Automobile and Supply Co., Limited

**Executive offices : 385 Ontario St., East, Montreal.**

OTTAWA, QUEBEC, VALLEY JUNCTION, CHICOUTIMI, COWANSVILLE, ST. EVARISTE STATION, JOLIETTE, MONTMAGNY,  
MONT JOLI, SHERBROOKE, SOREL, ST. HYACINTHE, ST. JEROME, RIVIERE DU LOUP, THETFORD MINES,  
THREE RIVERS, VICTORIAVILLE.

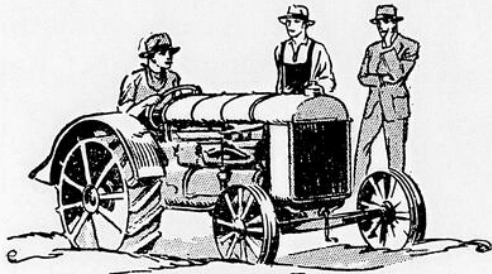


## Why their alfalfa was killed last winter



Last year about 100 farmers of a certain county, set out to determine what killed their alfalfa during the winter. The conditions found on one farm are typical. This farm has two fields of alfalfa, side by side, which were sown with two different kinds of seed. One field showed a perfect stand while the other was badly thinned out. The cause of the winter killing was directly traced to poor seed.

## Poor seed is like poor lubricating oil



Neither cheap seed nor low-priced lubricating oil is a profitable investment. Farmers who turn to Gargoyle Mobiloil are often astonished by the many ways in which Mobiloil returns its small extra price. Less time out for repairs. Fewer stops with a tractor because of overheating or thinned-out oil. Less carbon. Better compression and valve action. And Mobiloil frequently cuts oil consumption from 10% to 50%—saving more than its few cents extra cost per gallon right there.

## Some important facts about Mobiloil



**THE** correct grades of Gargoyle Mobiloil for engine lubrication of prominent passenger cars are specified below. The grades of Gargoyle Mobiloil indicated below are Mobiloil "E," Mobiloil Arctic ("Arc."), Mobiloil "A," Mobiloil "BB," and Mobiloil "B."

Follow winter recommendations when temperatures from 32 degrees F. (freezing) to 0 degrees F. (zero) prevail. Below zero use Gargoyle Mobiloil Arctic (except Ford cars, use Gargoyle Mobiloil "E"). If your car is not listed here, see the complete Mobiloil chart at your dealer's.

| NAMES OF PASSENGER CARS | 1927   |        | 1926   |        | 1925   |        | 1924   |        |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                         | Summer | Winter | Summer | Winter | Summer | Winter | Summer | Winter |
| Cadillac                | BB     | Arc.   | BB     | Arc.   | A      | Arc.   | A      | Arc.   |
| Chandler Sp. 6          | A      | A      | A      | A      | A      | A      | A      | A      |
| Chandler Over Mod.      | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Chevrolet               | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   | Arc.   |
| Chrysler 4              | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Chrysler Over Mod.      | A      | A      | A      | A      | A      | A      | A      | A      |
| Dodge Brothers          | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Ford                    | E      | E      | E      | E      | E      | E      | E      | E      |
| Franklin                | BB     | BB     | BB     | BB     | BB     | BB     | BB     | BB     |
| Hupmobile               | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Jewett                  | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Jordan 6                | —      | —      | —      | —      | —      | —      | —      | —      |
| Jordan 8                | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Lincoln                 | A      | A      | A      | A      | A      | A      | A      | A      |
| McLaughlin-Buick        | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Moon                    | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Nash                    | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Oakland                 | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Oldsmobile              | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Overland                | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Packard 6               | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Packard 8               | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Paige                   | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Pierce-Arrow            | A      | A      | A      | A      | A      | A      | A      | A      |
| Star                    | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |
| Willys-Knight 4         | —      | —      | —      | —      | —      | —      | —      | —      |
| Willys-Knight 6         | A      | Arc.   | A      | Arc.   | A      | Arc.   | A      | Arc.   |



If you want your car to run smoothly and powerfully, using less gas and oil, if you want fewer repairs and greater satisfaction—you will find real help and guidance in our book, "Correct Lubrication". Write Imperial Oil Limited, 56 Church St., Toronto, for a free copy of this useful book.

### IMPERIAL OIL LIMITED

Marketers of  
GARGOYLE MOBILLOIL  
in Canada

Manufactured by  
VACUUM OIL COMPANY

## "Let the Sparks Fly!"

### YOUR BARN ROOF WILL BE SAFE WITH "GEORGE" SHINGLES

You never know when sparks from chimney, threshing-engine or bush fire will light on your roof and threaten your barn, stock and crops with destruction. "George" shingles besides being fireproof are wind, rain and storm proof. When grounded in accordance with Fire Marshal's Regulations they are lightning proof. Locked along all four edges, made from "Queen's Head" copper bearing sheets, extra heavily galvanized—last a lifetime.



Let us tell you how little it would cost to put "George" "Two-by-Two" on your roof.

### PEDLAR'S PERFECT PRODUCTS

We also manufacture "Council Standard" Corrugated Iron and Corro-Crimp Roofing.

### THE PEDLAR PEOPLE LIMITED

Head Office - Oshawa

Branches: Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, London, Winnipeg, Vancouver.

6

## ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

Reduces Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from Bruises or Strains; stops Spavin Lameness, allays pain. Does not blister, remove the hair or lay up the horse. \$2.50 a bottle at druggists or delivered. Book 1 R free.

ABSORBINE, JR., for mankind—an antiseptic liniment for bruises, cuts, wounds, strains, painful, swollen veins or glands. It heals and soothes. \$1.25 a bottle at druggists or postpaid. Will tell you more if you write.

W. F. YOUNG, Inc., 134 Lyman Bldg., Montreal, Can. Absorbine and Absorbine, Jr., are made in Canada.



### REMARKABLE ADAPTABILITY

An all brass Spramotor fitted to a fifty gallon cask. Suitable for all kinds of row crops, orchards, vineyards, which serves for all classes of spraying as efficiently as this moderate priced rig. The horse cart Spramotor has won unprecedented endorsement from growers of varied crops. There is no hand power spraying outfit offered to-day which serves for all classes of spraying as efficiently as this moderate priced rig. Made by the only Canadian firm manufacturing spraying machines exclusively.

Write for catalogue C

THE SPRAMOTOR COMPANY  
21 KING ST., LONDON, ONTARIO

**Spramotor**  
It isn't a SPRAMOTOR unless we made it

## Don't Suffer With Rupture

New Discovery Will Heal It  
You Can Try It Free



Despite sudden strains and unexpected exertions, rupture can be retained safely and surely—and at the same time it can be healed, by a new scientific discovery.

This new invention is light, safe and sanitary—so small that it will

not hamper body movement. It heals as it retains. The old-style truss or appliance prevents healing—because it separates the edges of the rupture opening.

We will let you try it free. Write today for free trial offer, sent in plain, sealed envelope. Brooks Appliance Co., 207A State Street, Marshall, Mich.



## Deafness

Perfect hearing is now being restored in all cases of deafness caused by Catarrhal troubles, Relaxed or Sunken Drums, Thickened Drums, Roaring or Hissing Sounds, Perforated Wholly or Partially Destroyed Drums, Discharge from Ears.

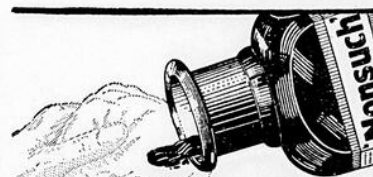
### Wilson Common-Sense Ear Drums

require no medicine but effectively replace what is lacking or defective in the natural ear drums. Simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable.

### Free Book on Deafness

Write today for 168 page book on deafness giving full particulars and many testimonials. The hearing of thousands of grateful users has been restored by these "little wireless phones for the ears."

WILSON EAR DRUM CO., Incorporated  
553 Todd Bldg. LOUISVILLE, KY.



## Nonsuch Stove Polish

Liquid and Paste Gives a Quick Shine that Lasts a Long Time  
Made in Canada  
Nonsuch Limited - Toronto



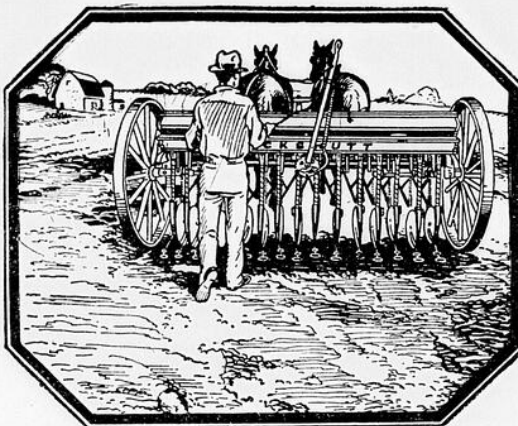
# COCKSHUTT

## Seed Drill

### BIGGER YIELDS ASSURED!

Bigger yields—every farmer wants them! Then start right. Start with good seed and a Cockshutt Grain Drill and you'll get maximum returns from your land. Choose a Cockshutt Drill because it has proven itself thoroughly reliable and efficient and a great crop getter.

Securely rivetted frames of strong carbon steel; multiple-disc gears that automatically sow the desired amount of seed without waste or loss; efficient shoes that plant and cover the seed thoroughly; perfect lubrication and easy operation are features that will commend themselves to you.



("BETTER SEEDING—BIGGER YIELDS" is our pamphlet on Drills that will fully explain them to you. Ask our local agent for a copy or write our nearest office today.)

**THE FROST & WOOD CO., LIMITED**

Smiths Falls, Ont.

Montreal, P. Q.

Truro, N. S.

"Cockshutt Implements Make Farming Pay Better"

72

### THIS SPRING

Buy Registered Seed  
And So Be Sure You Are Getting

Seed of a variety that has been thoroughly tested and found to be good:

Seed that is true to variety name;  
Seed that is free from other kinds;  
Seed that is free from weeds;  
Seed of strong germination.

Registered Seed originates from crops that have been registered by

**THE CANADIAN SEED GROWERS' ASSOCIATION,**

OTTAWA, CANADA

### How's Your Stomach?

Mine's fine, thank you. It wasn't always so. You can easily get rid of your Dyspepsia, Indigestion, Catarrh of Stomach, Belching, Heart Fluttering, Sour Stomach, Nervousness, Constipation, Headache, etc., same as I did, and in the same way. Don't send one cent, for I am so sure this treatment will produce like results for you that I will send it, all charges prepaid, by mail.

After it has proven itself the means of getting rid of your stomach troubles you may send me one dollar. How is that for confidence and fairness? Write now. Address, Theodore H. Jackson, 287C Stratford Bldg., Syracuse, N. Y.

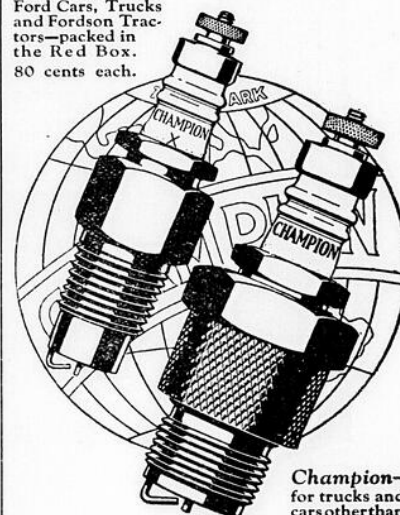
**\$ \$ \$ \$ \$ \$**  
**\$ EVERYWHERE \$**  
farmers, dairymen and others are making extra money by shipping us all kinds of empty Bags. You can do the same. We pay the freight and also highest prices. Write us and we will send you full particulars and shipping tags. No quantity too large or too small.  
**WRITE NOW TO:**  
**SENDEL & GORDON**  
21 Duke St., Montreal, Que.  
**\$ \$ \$ \$ \$ \$**

## Guaranteed

Your dealer will tell you that the Champion guarantee is the strongest behind any article of automotive equipment. It is your complete assurance that Champion must be the better spark plug. That is why Champion outsells throughout the world two to one. And it is why Champions enjoy an equal preference on the farm for stationary engine, tractor and truck use.

Car manufacturers recommend, and hundreds of thousands of motorists are changing spark plugs every 10,000 miles to insure better and more economical car operation. This is true, even of Champions, in spite of their world-wide reputation for remarkable long life.

Champion X—  
exclusively for  
Ford Cars, Trucks  
and Fordson Trac-  
tors—packed in  
the Red Box.  
80 cents each.



Champion—  
for trucks and  
cars other than  
Fords—packed  
in the Blue Box  
90 cents each.

**CHAMPION SPARK PLUG CO.**  
OF CANADA, LIMITED  
WINDSOR, ONTARIO

**CHAMPION**  
Spark Plugs

A Canadian-Made Product

# MASSEY-HARRIS

**DISC HARROWS** WORK UP A FINE SEED BED QUICKLY

Massey-Harris No. 8 & 9  
Out-Throw Disc Harrows

For 1927 Are Equipped With

**ALEMITE**  
**HIGH-PRESSURE LUBRICATION**

Oiling is done quickly and easily by the Alemite Compressor Gun which forces oil to the Bearings under high pressure. Old oil and dirt is replaced by a supply of clean fresh oil.

Strong Frames  
High Quality Discs  
Spring Controlled Scrapers  
Convenient Levers

ARE OTHER FEATURES OF

**MASSEY-HARRIS**  
No. 8 & 9 Disc Harrows

Ask Your Massey-Harris Agent  
for Full Particulars



**MASSEY-HARRIS COMPANY, LIMITED**

ESTABLISHED 1847—80 YEARS AGO

Toronto, Montreal, Moncton, Brandon, Regina, Saskatoon,  
Swift Current, Yorkton, Calgary, Edmonton, Winnipeg.

Agencies Everywhere



## Children Thrive On It

Doctors recommend it because of its high percentage of **DEXTROSE**—the energy producing element in food!



It is delicious in flavor and is so easily digested.

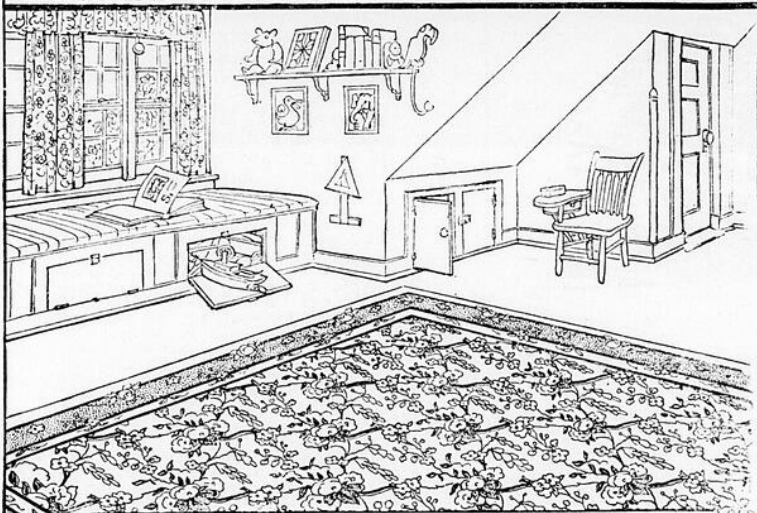
Give the children as much as they want.

CB12

# EDWARDSBURG CROWN BRAND CORN SYRUP

The CANADA STARCH CO. LIMITED—MONTREAL

BRIGHTEN YOUR HOME — AT LITTLE EXPENSE



## An attractive room in the attic

at surprisingly low cost—

A cheerfully patterned, genuine Congoleum Gold Seal Art-Rug—at the reduced prices, can be bought for as low as \$5.50\* for a 9 x 4½ foot rug.

Easy-to-clean Congoleum Gold Seal Art-Rug patterns are unsurpassed anywhere for sheer beauty.

Send the coupon for a free copy of a booklet showing the complete assortment in full colors.

\* Slightly higher in Winnipeg and points west.

# CONGOLEUM

GOLD SEAL  
ART-RUGS



You will know genuine Congoleum with the longer-wearing surface, when you see this Gold Seal — Avoid disappointing imitations.

Congoleum Canada Limited, 1270 St. Patrick Street, Montreal, J.A.

Send me, without cost or obligation, a copy of your latest pattern booklet entitled "Brighten Your Home with Congoleum Gold Seal Art-Rugs."

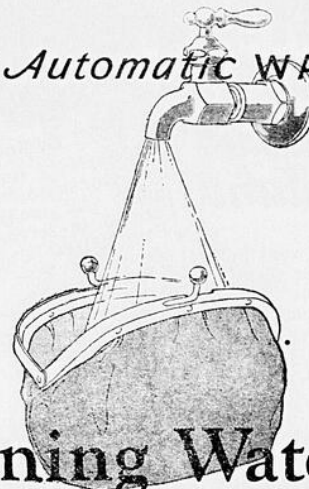
Name.....

Address.....

City.....

Prov.....

## CRANE Automatic WATER SYSTEMS



## Running Water that fits your pocketbook

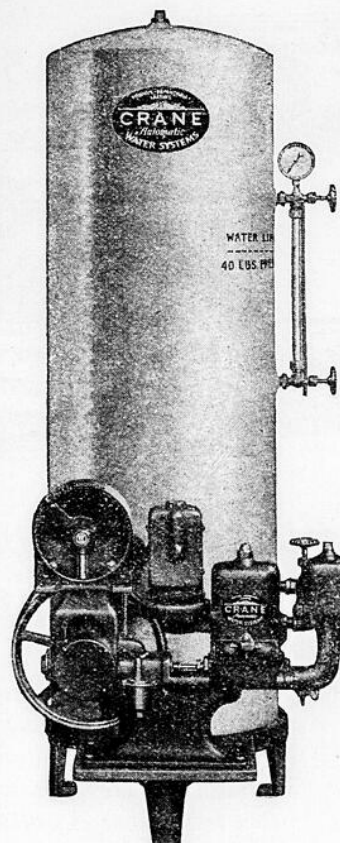
If you have listened to friends and neighbors discussing the merits of a Crane Automatic Water System, telling each other how wonderfully well it works, it is likely that you have guessed the price to be quite a bit above what it actually is.

Isn't it a cheerful surprise, then, to learn that there is a complete Crane shallow-well outfit of 200-gallons-an-hour capacity, with a big storage tank and one-sixth horsepower motor, that sells for only \$144! And that other Crane systems, for 200 up to 6000 gallons of water an hour, from deep or shallow well, with gasoline engine or electric motor, are sold at the lowest prices for which a dependable, high-quality system can be supplied.

Designed to pump water at the least cost per thousand gallons, to be free from trouble, to last many years, and to save you money, each system is a marvel of quality and simplicity.

Bronze parts are drop-forged, not cast. The oil gauge always works and never dirties. Flood lubrication saves wear. Over-size units eliminate strains. Bearings are machined to .0005 (half of a thousandth) of an inch. One handy wrench is the whole tool kit for all the parts, and they are the last word in accessibility.

That's why a Crane water system is a fine investment, adding permanent value to your property. For a few cents a day, it provides healthier, happier, more hygienic living for you and your family. It banishes much drudgery and discomfort, makes possible all modern sanitation conveniences. Always, it is your private "waterworks," supplying constant running water that exactly fits your pocketbook.



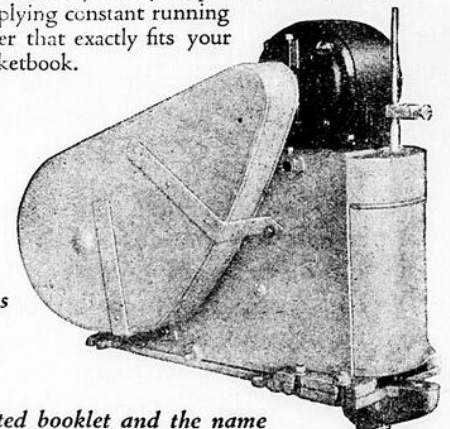
Crane Shallow  
Well System

200 gallons an hour capacity. Big storage tank. 1/6 h.p. motor. Complete, \$144 f. o. b. factory . .

### Crane Deep Well Systems

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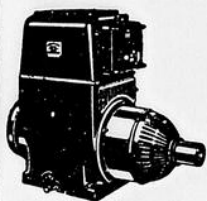
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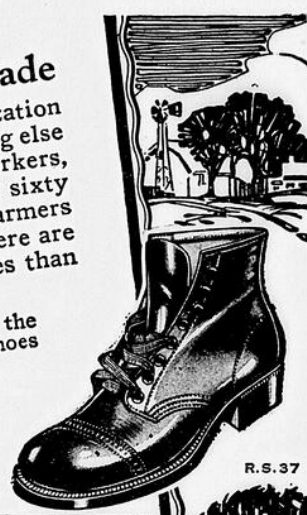


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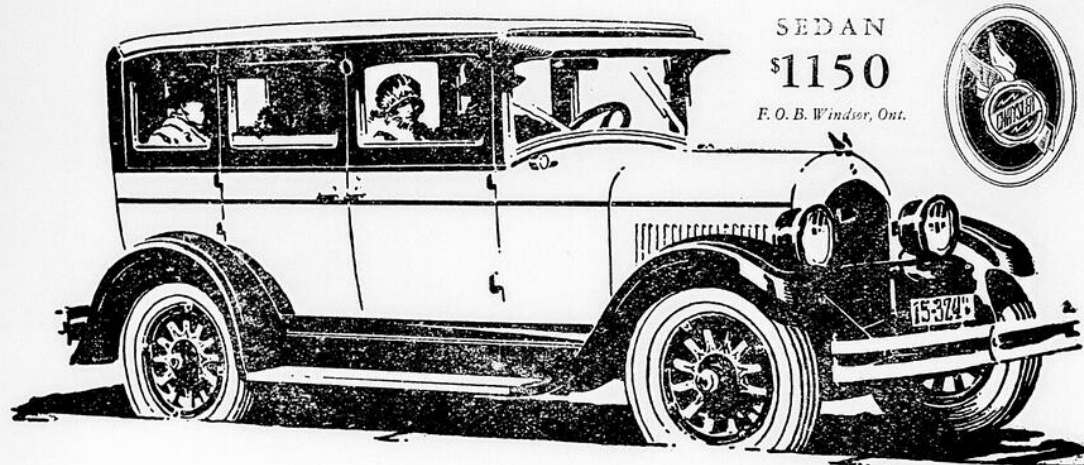
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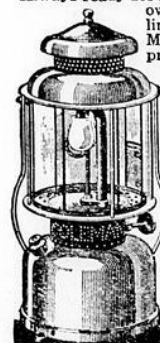
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## EDITORIAL COMMENT

### THE EUROPEAN CORN BORER

"It is now apparent to anyone familiar with the situation that the European corn borer constitutes the greatest potential menace that faces American agriculture—perhaps that has ever faced it." This startling statement introduces a full review of the corn borer situation both in Canada and the United States by Harry R. O'Brien in the February issue of *The Country Gentleman*. It is based on first-hand information. The writer had been over most of the areas already infested—at first singly as a newspaper man, later with a group of scientists, state officials, manufacturers, financiers.

It's spread from the New England States westward to Pennsylvania, Ohio, Michigan, and Indiana — and its discovery last fall in Illinois, particularly—these things have aroused American farmers as they have not been aroused for many years. The Corn Belt is threatened. The hog industry of this continent is threatened. Dairy farming, in so far as it is dependent upon corn silage, is threatened. Manufacturers of agricultural machinery and railroads whose main profits depend upon the transportation of America's corn crop are working hand in hand with the agricultural scientists of the Federal and state departments. An emergency grant of \$10,000,000 has been made from Federal funds to help clean up the infested districts, and thus curb as far as possible further spread of the pest.

That is how the situation is viewed across the border. In Ontario the ravages of the borer have already been severely felt. In the counties of Essex and Kent, counties formerly given over mainly to the growing of corn for seed, the type of agriculture has had to be entirely changed—and at great loss to the farmers of those counties.

This pest has now been found in Quebec.

It is true that corn growing is not of the same importance in this province as it is in the "corn belts" of Western Ontario and of the Central States. Here corn is only one of a large number of important crops found on the average farm. Yet as our fifth most important crop, a crop running to an average of over \$8,000,000 a year in value, it is well worth making a real effort for.

In this issue of *The Journal* we reproduce certain portions of Quebec Bulletin No. 92 — prepared recently by Dominion and Provincial agencies with a special view to coping with the Quebec infestation. The recommendations made for control in that bulletin will be found in this issue. In our situation it should be easy to keep the pest in check, especially in view of its discovery before it has become established in the province. But it is not a matter for individual effort alone—all must work together for its eradication. There will be no choice in the matter in the programme that is being inaugurated in the United States—all farmers are asked to co-operate; those who follow instructions laid down will be rewarded by the government; those who fail to clean up their fields will have the work done for them and charged against them to be collected like taxes.

The need for co-operative effort is set forth in the aforementioned bulletin in the following words: "The ability of the moths to fly long distances and their tendency to spread suggests that this insect cannot be held in check by a few corn growers attempting to deal with the problem as individuals. Protection of the

crop from this insect requires that the control practices be applied by the community as a whole. Every farmer in the infested localities growing garden or field corn will have to incorporate clean corn culture in his farm practice if this crop is to continue to provide a profitable source of forage and grain for the agricultural industry of Quebec."

### A COUPLE OF SEASONABLE REMINDERS

Every year at about this time we become fired with a desire to give advice. Why this should be we do not know. The generosity of Nature at this season may be the stimulant—or perhaps it is because all other farm papers that we read are filled with wisdom in the springtime, and that this urge is contagious like measles.

There are so many bits of advice that are timely at the beginning of the farmer's busy season. The cautionary word concerning the machinery to be used in the spring rush, for example. How necessary it is that it be looked over, put in working shape, supplied with any needed repairs before the day it is required. And the matter of the cleaning and treating for smut of the grain that is to be used for seed.

Those who know us personally, and are acquainted with our penchant for leaving off work till the last minute, will perhaps be amused at the readiness with which such advice drips from our pen. But we submit that it is the man who sometimes gets behind who really knows how necessary it is to make a conscious effort to be up with one's work.

The real reason for advising that every possible thing be done beforehand to speed up the springtime work on the farm is not that it is uncomfortable to be behind, or that it results in spoiled tempers and profane language—although these things are themselves bad enough. It is essentially a financial consideration that urges us to advise forehandedness. In other words, years of experiment in the fields here at Macdonald College have shown that there is a distinct reduction in the yields secured from grain crops that are not sown on time. Barley, for instance, shows a falling off of about five bushels for each week's delay in seeding after the first seeding, the average date of which at Macdonald is April 26. Medium ripening oats show even greater reductions in yield through delays in seeding—a six year average showing a yield of 73 bus. for a first seeding (about April 25), 64 bus. from a second seeding a week later, dropping to 42 bus. from the sixth seeding (the weight per bushel dropped as well). Red Fife wheat, over six years, showed constant and fairly regular decreases in yields from sowings made later than the first (April 25). Where the first averaged 35 bus. to the acre, the second gave 29, and the sixth 13. And the effect on grass seedings is even more marked.

Of course the possibilities in this advice giving business are very great. One might go on and on. But space limits, fortunately.

There is one other thought, however, that we should like to throw out at this time. This concerns itself with our maple groves. It was our privilege one day last summer to walk through a very fine maple grove in the hilly country of the Eastern Townships, so famous for its maples. And there, in that grove, was a most instructive lesson for anyone who wished to read it. It was a lesson



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in conservation, in the conservation of the source of supply of one of our unique products. In short, it was a lesson in the treatment of this important part of the farm enterprise.

For the grove had been divided in two by a fence, and one side was pastured while the other side was not. The fence had been placed there only two years ago, and at the request of the Superintendent of the Quebec Demonstration Farms (for this was one of the farms that have been taken under the control of this service). Previous to that time the whole grove was run over by the cattle. But the two years had shown just what the difference might be. The side pastured was devoid of young trees; the side that had been protected for the past two years was thick with sturdy young maples coming along to take the place of those now yielding sap when the latter shall have lived their life.

Surely if the maple industry is worth engaging in it is worth conserving. Every year sees the area more circumscribed from which the world's supply of maple products must come. And we cannot think of any other use to which the more rocky portions of these Eastern Township farms might be put that would be more profitable than that of furnishing the raw materials for these products. Yet thousands of acres of fine maple woods are pastured year after year, to the blotting out of any young growth. True, the yielding trees are not trodden down by the cattle,—but we must look to the future. We must plan for the trees to be tapped by our sons.

And the amount of food gleaned by the cows in pasturing these woods is but a bagatelle. It is not worthy to be compared to the value of the young growth of trees that would result from a few years' rest for the grove.

## Development of Economic Life

Dr H. D. Brunt

WHAT were the advantages of the Industrial Revolution? What gains in economic life are to be attributed to this great change?

1. It caused the building up of great cities. In our next article, the disadvantages and defects of large cities will be discussed. But the development of art, education, scientific research, mechanical invention, hygienic conditions of life are to be attributed, in part, to this concentration of wealth and population in restricted areas. In so far as these amenities of life affect rural and small town life, they come from large centres of wealth and population. Let me anticipate one objection—the city slum. There are two answers:

- a. The objector's experience is limited if he knows nothing of rural and small town slums.
- b. The hygienic and housing conditions of mediaeval and even 18th century cities were appalling. In some respects they were each one great slum. The concentration of population accentuated those conditions for a time. But it was in the city that new developments in proper housing, food and hygienic conditions took place. The slum is a survival of the past rather than a creation of the new industrial conditions.

2. It has provided the necessities and luxuries in greater abundance for ever-widening circles of people. The luxury of today becomes the necessity of to-morrow. Poverty is relative—the standard of living of a skilled mechanic of today is at least equal, in some respects superior, to that of the nobility of the 17th century. Lucullus, the great Roman epicure, had brought to him, at enormous expense, fruits and meats that a middle class family eat from a can with greater certainty of purity and safety.

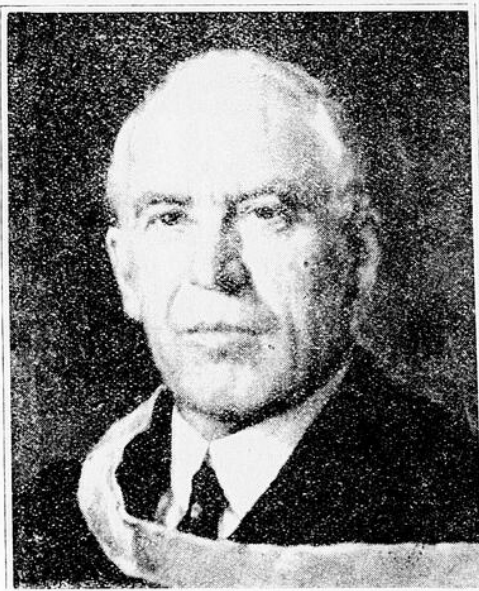
3. In its telephone, phonograph, cinema, radio, picture-reproduction processes, it has made possible the knowledge and enjoyment of masterpieces of all forms of art for the most humble.

4. It has annihilated distance. As I watched the marvel of Lake Louise, a woman remarked to me, "these dreadful tourists, they spoil everything". Part of the charm for her lay in exclusiveness, like the possession of rare jewels. I rejoice in opportunities for tourists—the blasé Londoner who has never visited the Tower or Westminster Abbey, falls below the level of the most strident and nasal American tourist who has crossed the seas to visit what history has consecrated for him.

5. It has removed pain and prolonged life, by labor-saving devices, safety guards; lessened hours of labor; and by hygienic, surgical and medical discoveries has made life richer, safer and more adequate.

## The Late Prof. Wm. Lochhead

Former Editor of The Journal of Agriculture dies at Macdonald College, in his 63rd year.



THE LATE PROFESSOR WILLIAM LOCHHEAD

WILLIAM LOCHHEAD, emeritus professor of entomology and zoology in Macdonald College, died at his home in Ste. Anne de Bellevue on Saturday afternoon. Prof. Lochhead, who was one of the senior members of the original staff of the college and of the Faculty of Agriculture of McGill University, had retired from active work in September, 1925, on account of heart trouble, which was the cause of his death. He had a wide circle of friends, not only in the provinces of Quebec and Ontario, which were the scenes of his lifework, but also in scientific, agricultural and educational circles elsewhere.

Prof. Lochhead was in his sixty-third year, having been born in the County of Perth, Ontario, April 3, 1864. He was educated in the Listowel High School and graduated B.A. in McGill University in 1885, and M.Sc. in Cornell University (Ithaca, N.Y.) in 1895. He taught as science master in several Ontario collegiate institutes: Perth, 1886-8; Galt, 1889-94; Napanee, 1895-6; London, 1896-8, before joining the staff of the Ontario Agricultural College as professor of biology, which position he held from 1898 to 1905. He was then appointed professor of biology in Macdonald College and acted as one of Dr. J. W. Robertson's chief advisers in the organization of the institution, in whose service the remainder of his life was spent. When the department of biology was divided in 1920, Prof. Lochhead's title was altered to Professor of Entomology and Zoology.

As entomologist, Prof. Lochhead's most important contributions to knowledge were studies of the Hessian fly, the San Jose and related scale insects and the pea-weevil. He was the author of a textbook of economic entomology and of an introduction to heredity and genetics. Other publications of his related to weeds and fungous diseases of plants. He was a prominent member of the Ontario Entomological Society, serving as president in 1902-4; of the American Society of Economic Entomology; of the American Nature Study Society, of which he was vice-president in 1910; and of the Ottawa Field Naturalists' Club; and a Fellow of the American Association for the Advancement of Science and of the Canadian Society of Technical Agriculturists. He organized the Quebec Society for the Protection of Plants in 1908, and served as its president up to the time of his retirement from college work.

### EDITORIAL WORK

In addition to his investigational and educational work, Prof. Lochhead's services to agriculture included twelve years' editorship of the monthly Journal of Agriculture and Horticulture, of the Quebec Department of Agriculture (1908-20). One of his last services to Macdonald College was a mission to the public schools of the United Kingdom to present to the boys the opportunities open to them in agriculture in Canada. This was in the winter of 1923-24.

Mrs. Lochhead, who survives her husband, was Miss Lilius Grant, of Windsor, Ont. Their only child, Dr. A. Grant Lochhead, is Dominion Agricultural Bacteriologist, head of one of the divisions of the Dominion experimental farms system and resides in Ottawa. John Lochhead, of London, Ont., George Lochhead, of Atwood, Ont., and Alexander Lochhead, of Ontario, Ore., are surviving brothers, and Mrs. James Lineham, of Vancouver, Oregon, a sister.

Prof. Lochhead was a member of the University Club of Montreal, a member of the Gamma Alpha and Sigma Xi fraternities, an elder of the United Church of Canada and a Liberal in politics. Upon his retirement, an oil portrait was presented to Macdonald College by his friends and associates and a tribute paid by one of them on that occasion well summed up the estimate of his friends: "A profound scholar in both literature and science, a superior teacher, a successful and original investigator, a wise administrator, an example of high integrity and nobility of purpose, and above all, a prince of good companions, his memory will always be cherished by those who have known him."

J. F. S.



# THE ECONOMICS OF AGRICULTURE

## Some of the Problems to be Studied in the Field of Farming

By Dr. J. E. Lattimer, Dept. of Farm Economics, Macdonald College.

IT is a great privilege to have the opportunity of discussing the subject of farm economics, as the need for increased attention to the economic problems of agriculture is everywhere being realized and commanding everywhere increased attention.

The word economics is of Greek derivation, being a combination of two Greek terms signifying house management. When every free man had four or five slaves at his command, it was natural that economic problems should be somewhat confined to house or home management. At a later period when principalities were being combined into nations at the close of the middle ages, considerable confidence developed in the theory that nations could make themselves rich by statute. During that period economics came to be known as political economy. Inventions of the latter part of the 18th century, which started what is known as the industrial revolution, made possible a great division of labor. The division of labor now prevailing is responsible for the increased interest in the subject by each individual family, and now economics is a more common term than political economy.

The economic problems of the farm during this development have not received a great deal of attention. When farms were largely self-sufficing this was to be expected, and the omission not keenly felt. Today with agriculture commercialized and farms producing for market rather than for home consumption the economic problems of the industry demand greater attention. Hence we note a comparatively new subject developing, namely, the economics of agriculture. In the United States this development has been recently rapid, in Germany significant, and last year a chair was endowed at the University of Oxford for the study of this subject.

The necessity for such a development need not be elaborated on. The need for the study is apparent. Commercialized agriculture demands it. But just what do we mean by the economics of agriculture? And what does it include? A brief examination of these questions is the subject of this discussion.

The economics of agriculture is briefly the application of the principles of economics to farm problems. For too long this aspect of the industry has been neglected. We have advanced farther in the technique of farming than we have in the equally important matter of farm organization and business management. The discoveries and application of science have done much in enabling two blades to grow where one grew before. This has been a great work, and much remains to be done along this line. The pressing need of the immediate present, however, appears to be to insure if possible that the growing of the two blades shall afford some profit after they are grown.

Just what does this subject include? One of the first problems to be stressed is—

### 1. Farm organization and management.

This large subject may be treated from the angle of the individual farm and also that of society in general. The management of the individual farm includes the type of farming to be followed, the selection of farm enterprises, the size of the farm, the farm layout and the combination of the different factors of production which will make the whole enterprise profitable. This includes the necessity for and advantages of farm bookkeeping and cost accounting. We hear quite frequently about the cost of production of a bushel of wheat, a pound of butter, a gallon of milk and so on. What do we know about our cost of production? The Department of Agriculture in this province on its demonstration farms found that in 1925 one farmer produced hogs for less than 4 cents per pound, and sold them for around 15 cents, thereby showing a profit of about

11 cents per pound. Another farmer receiving the same price during the same season reports a loss of a few cents on the hog raising enterprise. With discrepancies such as this prevailing, it is plain that we have not in this matter of cost of production yet exhausted the subject. The farm layout and the size of the unit in area are more or less the result in a young country of the original settlement. This brings us to another closely related subject, namely—

### 2. Land Settlement.

It is usually the case that we do a certain thing and afterwards study how it should be done. Sir John Seeley in "The Expansion of England" remarks that we seem to have conquered and peopled half the world in a fit of absence of mind. Under such conditions it is not surprising if some errors were made. The system of farm organization now prevalent in Canada evolved largely from the experimental or trial and error method. We have settled farmers on land clearly intended for forests and are now returning this land to what it was intended for not without some expense to the public. We have allowed farmers to locate on land more suitable at this stage of our development to ranching and later moved them at no small amount of trouble and expense. Many of our earlier errors have been corrected, however. The system at present prevailing is no mean system, judged by its results. Yet more care should be taken in our colonization. In a country where over half of the land suitable for agriculture is yet to settle, this matter cannot be too carefully studied. A consideration of this subject brings us to another closely connected one, which is—

### 3. Land policy.

The question is, should farming as an industry be expanded? If so, just how and where? These are questions which farmers are beginning to take a keener interest in, and this is to be expected as they are coming to realize that the profits in the business depend primarily upon the question of the competition which they have to meet. Just a year ago the Master of the Grange in the United States in a carefully prepared address commented on the lack of a land policy in that country. He remarked that there was a time when a land policy did exist in that country. It was embodied in a song, which ran something like this "Uncle Sam is rich enough to give every man a farm". Now the farmers of that country are wondering how they are going to get rid of their troublesome surplus of farm products. Does it require very profound thinking to connect these two things as cause and effect? Could we expect to settle a continent containing some of the richest soil in the world as rapidly as this continent has been settled without some temporary surplus in some lines of farm products?

In the United States they have recently evolved

a new definition of a farm which they describe as a neglected plot of land entirely surrounded by prosperity. This probably accounts for the frantic efforts to get off the world market by means of the McNary-Haugen Bill which has been vetoed and the Lenroot-Taber Bill which has been passed.

In this country, however, we are not afraid of a surplus of farm products. The greater the surplus the better, as we are used to competing in a world market. The question of expansion of farming and the competition to be expected immediately raises another important problem, namely—

### 4. Marketing.

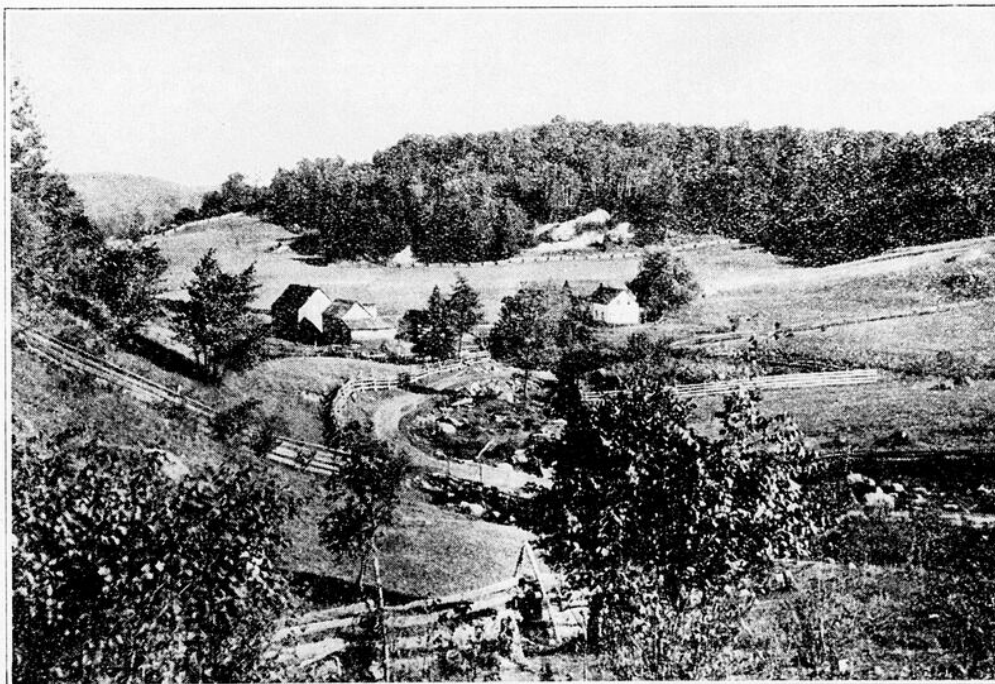
It is impossible to consider production apart from marketing. It is just as impossible to separate these questions as it is to try to divorce the two factors demand and supply. And much of our confusion arises from trying to do just this. Sir George Paisch said recently at Montreal, that if Europe had sufficient purchasing power they would pay \$2.00 per bushel for Canadian wheat. He was revealing to us only the demand side. Of course they would, if they had enough money, pay \$2.00 per bushel for wheat, but only on one condition, and that is, provided they could not get it from Canada or any other country for less than \$2.00 per bushel. That was the part omitted in that address. A commodity is produced when it is in the form required at the place required at the time required. Therefore we see that the production of wheat includes the growing, transporting and selling of it.

There is a somewhat common belief that the grower has not been recently getting as well rewarded for his effort in his part of the work as those who furnish the marketing service. The grower has not been securing an even break. He has not had a fifty-fifty division, at least it is rather an unusual fifty-fifty division. During the war, when food was more scarce than it now is, the manager of a delicatessen store in London, England, was brought before the court and charged with using horse meat in his rabbit pies. He told the court that he used horse and rabbit meat in his pies on a fifty-fifty basis. Fifty-fifty, one horse to one rabbit. Farmers have recently suspected that this is about the style of the fifty-fifty division which they have been getting. This has led to a greater interest in marketing, and the question of whether they can do their own marketing more economically or not brings us to the question of—

### 5. Co-operation.

Co-operative enterprise is an advantage and almost a necessity for farmers, as it increases their bargaining power. It is about the only way in which their bargaining power may be increased, as the farming industry is of necessity carried on by a large number of small units. The possible benefits through co-operation are many, depending on the variety of the product handled, the loyalty of the members and the efficiency of the management secured. Co-operation has, however, its limitations. Some so-called co-operatives have unsuccessfully attempted to fix prices arbitrarily. This has been futile because of outside competition and the antagonism of the consumer. The restriction of production has been sometimes advocated. This has been hard to bring about because of the large number of producers, their independence and the fact that co-operation is not by any means dictation.

What is needed is not so much restricted production or controlled production, but planned production, which is quite a different thing. Co-operation by bringing the grower in closer touch with market demands may greatly assist planned production. It is hard to maintain balanced production in farming just the same as in any



A picturesque farm in the Laurentian Country near Lakeview, Quebec.

(Continued on page 154)



# SPRING REMINDERS FOR THE HOG MAN

By E. W. Crampton, Animal Husbandry Dept., Macdonald College.

WITH the passing of March, the bulk of the spring pigs have arrived. Not all of the details of their early management are completed, however, with the passing of the farrowing date. In fact it is not until the pigs have been weaned and have been "on their own" for a month or so that we can safely feel that the close attention period is over.

During this period there are two operations which should be done promptly after farrowing, though if neglected at that time are still better done late than not at all. The first is the removal of the eight sharp "black teeth" with which the pig is born. These teeth are of no use to the pig, and are very frequently a source of considerable trouble to the hog man. One of the troubles chargeable to these teeth is the reluctance shown by some sows to allow their pigs to nurse. Their teats get sore from contact with these needle-like teeth, and the sow will not submit to the subsequent discomfort of nursing long enough to properly feed her family. This may be noticed in the sow suddenly jumping up soon after she has started to nurse, or perhaps in her disowning her litter entirely after two, three or four weeks.

A second difficulty often encountered where these teeth are not removed is that of infected sores around the heads, ears, or mouths of the pigs. In their play and fights the skin on these parts is broken by the teeth and sores develop which may become quite serious.

The removal of these teeth is quite a simple matter and a job which anyone can do. It is merely necessary to get hold of them with a pair of pincers and with a quick twist, break them off at the gums. This can very nicely be done as soon as the pigs are born. At that time it does not disturb the sow, whereas later on the little fellows will squeal when they are handled and may excite the mother to the point that she will, in her efforts to get at the operator, trample the pigs when they are returned to her.

## EAR MARKING

Another practice not always followed by breeders, but which is advisable, especially where more than one litter is farrowed, is that of marking the pigs, either individually or by litters. The reason for it may be illustrated by an incident which occurred last season.

The writer was looking for a young boar pig and visited one farm where there were four litters of pigs all of about the same age. They had been weaned about a month. Among them were four boars. Of these four, one was selected tentatively, and then we asked to see its sire and dam. We were taken out into an adjoining orchard where the four sows and the herd boar were being kept. As a matter of general interest all of the sows were inspected and then the owner was asked which sow was the mother of the pig selected. "Well", he said, "I'm not just sure. It's either this one here or the one away over beyond. I'm sure it's one of those two because they have the long snouts like the pig, and I rather think it's this sow here."

The point is, "thinking" is not good enough. How can a man register his pigs correctly if he himself isn't sure which sows are the dams of which litters? And if pigs are not accurately registered, how is the pure-bred breeder to carry on? Would you buy a pig as a prospective sire in a pure-bred herd if you were not sure he was the product of the mating indicated in his pedigree?

The problem of marking pigs sufficiently to identify them as the product of a given sow is so easily met that there is little excuse for its omission. Everything considered, notching the ears of the pigs is probably the most satisfactory scheme. Tattooing cannot be read without catching the pig, and metal tags put into the ears, in addition to being illegible at a distance, will not stay in the ears very long, especially when the pigs are put out of doors.

For most purposes it is quite satisfactory to mark all pigs of the same litter alike. An ear punch such as is used to put tags into the ears is as good as any to make the notches. Don't make the notches too large or they will disfigure the ear later on. On the other hand, if made too shallow they will "grow out". A notch  $\frac{1}{8}$ " deep is about right if done before the pig is a week old.

This operation can also be done at birth. Then there is no chance of a mistake in litters. Further-

more, done at that time there is no bleeding of the ear and no trouble in handling the pig. If it is not done then, it must be done before weaning time if it is to serve its purpose. Many pure-bred breeders look with suspicion on a registered pig that has no marks by which to identify him with his pedigree.

## CASTRATING THE BOARS

At or before weaning, all male pigs not intended for breeding should be castrated. As to just when this operation is best done there is a good deal of difference of opinion. Until recently, however, no data were available bearing on this question. Realizing that the common practice of castrating and weaning pigs at the same time usually results in a check in their growth, an experiment was organized at the University of Wisconsin to determine if possible just what effects castration itself had on the growth of young pigs.

The results of this trial are summarized as follows:

- (1) Castration of pigs at birth may slightly increase the mortality.
- (2) Castration at birth or at four to five weeks of age does not cause a noticeable check in the growth of the pig.
- (3) There is no significant difference in the rate of growth up to weaning time of male pigs castrated at birth and male pigs castrated at four to five weeks of age.

To castrate a small pig is a very simple matter. The greatest trouble usually lies in the holding of the pig. The handiest scheme the writer has ever tried makes use of an old V-shaped feed trough. The "holder" straddles the trough with his knees on the floor. The pig is laid in the V on its back, headed the opposite way from the holder. To hold him securely it is but necessary for the holder to sit down on the pig. Much or little pressure, according to amount necessary to hold the pig securely, can be had by shifting the weight from the knees to the pig. The sides of the trough prevent the pig from turning and also take some of the weight of the man. Using this method of holding, the hind legs may be held loosely in whatever position will best facilitate the operation. Pigs weighing up to 80 or 90 pounds may be quite easily held in this manner and the operation performed with ease and dispatch.

## WEANING

Weaning is perhaps the most serious experience the small pig must go through, at least in so far as his uninterrupted growth is concerned. The change from his mother's milk to a man-made ration is

usually a big step and one that nature makes no provision for. Where pigs are weaned by the sow, the change comes much more gradually, and at a later date in the pig's life than is the case in most practice today. This means that particular care must be given the feeding of the youngsters at this period if no check in growth is to be encountered.

It is not the purpose of this article to go into a full discussion of this subject, but rather to offer a few suggestions which may be pertinent and possibly of use to some.

- (1) Be particularly careful that newly weaned pigs are not overfed. Much of their clamor at the trough is due to their missing their mother. For a week after weaning it is far better to err on the side of underfeeding than to overfeed.
- (2) Feed at least three times a day. Allow at each feed what the pigs will clean up in 10 minutes. At the end of that time empty the trough if there is feed left. Do not allow feed to stand in front of them from one feed to the next.
- (3) If skim milk or buttermilk is available, use about 4 lbs. of meal to a gallon of milk for newly weaned pigs. If this is too thick, add water. This relates only to the proportions of milk and meal for the most economical use of the feeds—not in any way to the amounts to be fed per day.
- (4) If no milk is available, include 5 lbs. of 60% Digester Tankage and 5 lbs. of Linseed Oilmeal in each 100 lbs. of meal.
- (5) Be sure that the meal intended for weanling pigs does not contain large amounts of fibre. It will pay to sift the hulls out of ground oats or mixed feed. Middlings, corn, hominy and sifted oats are all low in fibre, while unsifted oats, barley, bran and shorts are considerably higher in this ingredient. The dairy by-products, of course, contain no fibre.

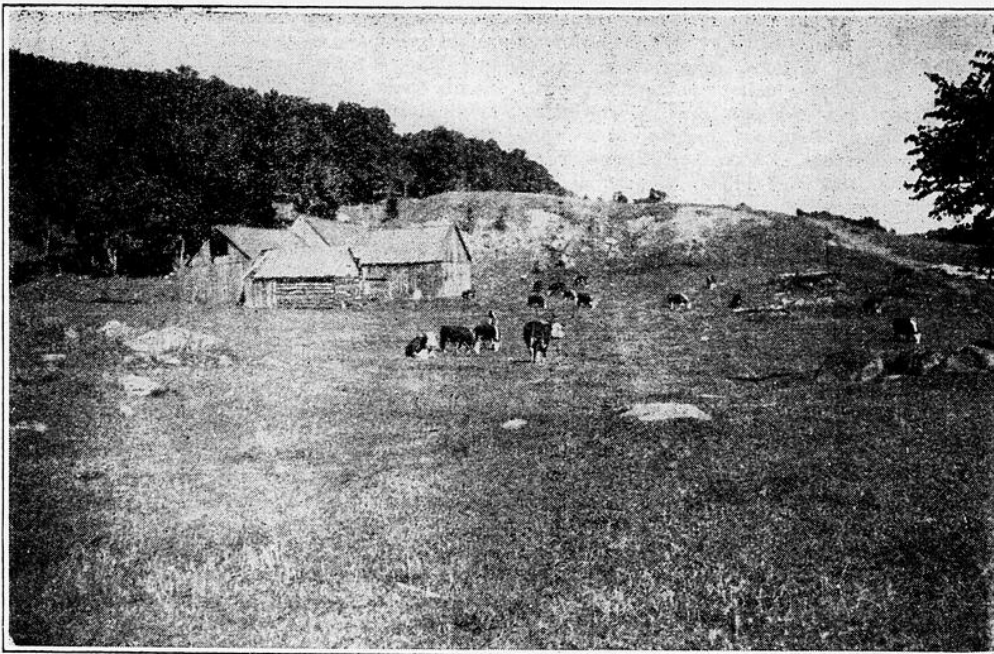
## RUNTS

In spite of the best of care there is likely to be the odd runt develop among the litters. What cause may be responsible in any given case is often never known. But the treatment is known—cull all such individuals as soon as they can be spotted. Feeding runty pigs is simply investing the profits from a bunch of good-doers in a losing proposition. It is cheaper by far in the end to bury them as soon as they appear. Profits are increased as surely by cutting off the losers as by adding winners.



The above beautiful pasture scene, taken on Grayburn Farms, the property of F. G. Gale, Waterville, shows a number of the interesting Jerseys in the Grayburn herd. Among them are Sophie's Delphine, Medal of Merit record of 886 lbs. fat and another record of 910 lbs. fat which makes her the fourth highest producing Jersey in Canada; her daughter Plain Mary's Delphine, 485 lbs. of fat as a yearling. Helen Merriek, 704 lbs. of fat, this being the highest of three good records. Torono Raleigh Lois, a Silver Medal two-year-old record of 569 lbs. of fat, etc., etc. The Grayburn Farms Herd now numbers 250 head of fully accredited, pure bred Jerseys", writes Mr. Gale. "Never has there been a re-actor on the farms, 34 bulls were sold in 1926 in 6 Canadian Provinces and 4 States of the United States. The Highest Producing Jersey Herd in the British Empire".





The "white faces" which have made for themselves such a secure place on the Western prairies seem quite at home on this Laurentian farm.

## Essentials in Forage Crop Culture

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

**I**N the culture of forage crops of various kinds, which play so important a part in the agricultural economy of so great a livestock country as Canada, there are certain essential factors attention to which (as far as possible) spells success, and, on the contrary, neglect of which often means failure. What are these essentials, consideration of and attention to which in normal years ensure adequate provision of good-quality feed for the needs of the livestock kept? There are at least seven of them, which will be discussed in turn in their natural order.

### SUITABLE SOIL

Forage crops vary in accordance with their adaptation to soil types. In general, the deeper-rooted crops—such as alfalfa, red clover, and sweet clover—require well-drained soils to allow for adequate expansion of their naturally extensive root systems. They require, also, soils with more or less open subsoils to permit of root penetration. Soils in a good or fair state of fertility and possessed of an adequate supply of lime favour their best growth, though it is admitted that sweet clover will grow in poorer soils and soils supplied with less lime than those required for the successful culture of the other two crops mentioned. Sandy soils and muck soils are unsuitable for the growth of red clover and alfalfa, while alsike clover will grow in both, and sweet clover will grow in the first-named soil type. Timothy does best in a clay loam soil; tall oat grass in a free open soil such as sandy loam or gravelly loam; bent grasses (chief representative Red Top) in naturally moist soils such as clays, clay loams, and even low-lying soils that are more or less inadequately drained. Meadow fescue, and to some extent meadow fescue, also prefer moist soils. In general, the shallow-rooted grasses, such as the bents and Canada bluegrass, prefer moist soils, and will do better than most grasses on poorish acid soils. Kentucky bluegrass prefers a richer, better drained soil type, and does best in a soil well supplied with lime. The deeper-rooting grasses (tall oat grass, western rye grass, brome grass, the wheat grasses of the West, and the fine fescues) are best adapted to the better drained more open soils, represented best by the sandy loams. And so one might go on to indicate other adaptations between forage plant species and soil type; but sufficient have been mentioned to indicate how desirable it is to grow crops that are more or less naturally adapted to definite soil types and conditions.

### PROPERLY-PREPARED SOIL

Though forage plants vary with respect to the soil type in which they do best, yet there are very few of them that will not respond to an increase in fertility brought about in that soil type—by the addition of organic matter or fertilizers or both and by proper cultivation of the soil. A soil naturally low in organic matter can be greatly improved for the successful growth of forage crops by a goodly application of well-rotted farm manure, usually

applied to the previous crop in the rotation, namely, corn or roots. The legumes (alfalfa, red clover, etc.) will at least grow with a greater measure of success if lime in adequate quantity (depending upon the soil's lime requirement) is applied to the land, provided of course the soil calls for lime. For legumes and the finer grasses the use of some suitable phosphate, such as superphosphate or basic slag, in addition to both farm manure and lime where these are needed, will contribute somewhat to the increasing of both yield and quality in these forage crops.

The preparation of the soil by cultivation is also highly important. The land having been well ploughed, to a depth which the surface soil will permit, it should be brought into a fine mellow condition by thorough disking and harrowing. Prior to seeding, the use of the roller or packer will compact the surface soil and so promote a fine yet firm seedbed, which is important for the reception and ready germination of the small seeds which characterize the majority of forage crops. In general, the principle of "the finer the seed the finer the seedbed" should be adopted; and with fineness should go compaction or firmness, particularly for the very fine seeds such as the clovers, alfalfa and grasses. Compaction promotes capillarity or upward (in general) flow of available soil water to the sprouting seed and young plantlets, thereby assisting the crop to more readily become established. In the case of alfalfa, particularly, it is very important that the seedbed be entirely free from weeds, for this crop is specially sensitive to competition with weeds during the period of its establishment—the first year, the most critical year in the life of the crop. To ensure the land being as free as possible from weeds before seeding alfalfa, it is good practice to precede it with at least one crop of potatoes, corn or roots, which crop should be thoroughly intercultivated, mainly to destroy as many weeds as possible. Should this not suffice to get rid of all weeds, the land may be thoroughly worked with cultivator and harrows at intervals of a week or ten days the following spring. This system kills the weeds as the weed seeds germinate. When it is pretty certain that the land has thereby been well cleaned, seeding can be undertaken. This usually will be about the first week in July. If the season is too dry at this time for alfalfa seeding, it had better be delayed until the following spring, the land meantime being occupied by some late-seeded crop, preferably one that can be intercultivated. Seeding alfalfa in land whose weeds have not been thoroughly eradicated is waste of money and time. Much of the failure with this crop has been in large measure due to neglect of this self-same factor. The provision of a clean seedbed for the reception of forage crop seeds of all kinds is desirable, to eliminate the competition with weeds menace, but this provision is particularly important for the successful establishment of the alfalfa crop.

Inoculation of the soil for the growth of alfalfa or sweet clover particularly is also important in

the event of either of these crops not having been grown before on the area chosen. The same organism is associated with the roots of both crops.

### SUITABLE VARIETY OR VARIETAL STRAIN

The growth of a variety or varietal strain suited to the climate of the region is also highly important. This is best illustrated by reference to the alfalfa variety Grimm—a variety that was evolved, mainly by unconscious natural selection, to withstand severe winters. Its hardiness is such that it is grown extensively all through the northern United States and across Canada. Indeed, it has been grown successfully by the Canadian Department of Agriculture as far north as Ft. Vermilion, 350 miles north of Edmonton, Alberta. Strains of this and of other hardy alfalfa are being selected and tested at various Canadian Agricultural colleges and stations, including Macdonald College. These strains have been selected and are being tested for hardiness principally, but other desirable qualities such as yield, quality and resistance to disease have been constantly considered during the processes of selection and testing.

Red Clover, which is not consistently winter hardy in Quebec Province, is also being subjected to selective improvement, particularly from the standpoint of hardiness. In due course hardy strains will be available for testing out elsewhere in the Province and, it is hoped, for use generally by Quebec farmers. Meantime, the commendable system of using ordinary Quebec-grown seed of regional varieties or Northern seed (seed grown principally in the northern districts of Ontario) is highly to be desired. Canadian-grown seed is assuredly superior to any seed, however well it looks, from outside sources, for our seed is the product of plants that have survived at least one Canadian winter, and in many instances is the result of natural selection through repeated seeding and repeated survival of northern winters. Where such seed of hardy regional varieties is not obtainable in quantity on account of poor weather conditions in North America for red clover seed production, as occurred in the season of 1926, temporary use of seed from Northern European countries (particularly those with hard winters) seems to be this country's only alternative until such time as abundant hardy red clover seed is again produced in Canada. It should, however, be stated here that alsike and alfalfa seed which are more abundant, may be used as a partial substitute.

Certain grasses, such as timothy, which are being improved for hardiness, yield, quality, length of growing season, and resistance to disease, in like manner are preferable to their unimproved varieties. In due course strains of such grasses will also be available for test and general culture out in the Province. Meantime, the use of seed of the ordinary regional varieties grown in Quebec, as in the case of red clover, is preferable to that of seed from non-Canadian sources, for the reasons indicated above. Home-grown seed or Northern seed (all Canadian) represents the product of duly acclimated and winter-tried forage crop regional varieties. Suitable variety, or improved varietal strain (if available), is thus an important factor in the culture of forage crops—so important, indeed, in certain crops such as alfalfa and red clover, that its neglect often means failure with that crop.

### GOOD SEED

**N**OT only should seed from hardy and otherwise suitable varieties or varietal strains be used, but that seed should be as free as possible from weed seeds and other impurities and should possess good germination. The highest grade of seed is "Registered", which should be grown extensively, where available, for it represents improvement with respect to the more important forage crop characters including hardiness, a high degree of plant uniformity and of seed purity and cleanliness, and high germinating power. Such desirable qualities embodied in forage crop seeds are bound to exert their powerful influence upon the yield and quality of the crops harvested and stored for winter keep of livestock. Failing the securing of Registered seed, the farmer should obtain and seed the next best, namely, No. 1 commercial seed of forage crops grown, if possible, for seed under Canadian climatic conditions, or, better still, under Quebec climatic conditions. The purchase of at least No. 1 seed will be deemed "good business" particularly when it is realized that even such seed may contain, according to law, as many as 100 weed seeds of all kinds per ounce, while Nos. 2 and 3 grades may contain as many as 250 and 500, respectively, weed seeds (noxious or otherwise)



per ounce. This means that with a seeding of mixed grasses and clovers, seeded at say 15 lbs. per acre, it is possible within the law to purchase therein and seed the following numbers of weed seeds by use of the three grades of seed mentioned:

| Mixture Grade No. | Total weed seeds seeded per acre. | Total weed seeds seeded per Sq. yard |
|-------------------|-----------------------------------|--------------------------------------|
| No. 1             | 24,000                            | 5.0                                  |
| No. 2             | 60,000                            | 12.4                                 |
| No. 3             | 120,000                           | 24.8                                 |

These figures are also applicable to each of the more common grass and clover seeds and alfalfa on the basis of 15 lbs. per acre seeding rate.

#### PROPER SEEDING

Adequate seed per acre is important, for in general it influences the thickness and weed-content of the stand ultimately obtained. Liberal seeding promotes thorough covering of the land surface by young forage plants and obliterates vacant spaces in which weeds readily grow from seeds already in the soil. Consequently, a better quality hay or pasture results from a satisfactory seeding rate. The seeding should be ample enough to cover the ground with superior vegetation, but should not be excessive thereby promoting waste of seed. Of course, if the seed is of poor or doubtful germination, extra liberal seeding may be practised. Should the soil be on the poor side, also, a little extra seed may be seeded; while on rich soils the minimum rates prescribed for seeding the various forage crops hold. The following table shows the various rates of seeding usually employed in growing various forage crops:

| VARIETY             | RATES OF SEEDING — lbs. per acre. |                             |                                |
|---------------------|-----------------------------------|-----------------------------|--------------------------------|
|                     | Sown alone                        | With Cereal Nurse Crop      | In mixture with grasses, etc.  |
| Timothy             |                                   | 8-10 lbs. with Red Clover   |                                |
| Kentucky Blue-grass |                                   | 2-10 with timothy           |                                |
| Meadow fescue       |                                   | 8-10 with Red clover        |                                |
| Red Top             |                                   | 2-4 with timothy and alsike |                                |
| Alfalfa             | 12-20                             | 12-15                       | 0.5 — 5.0                      |
| Red Clover          |                                   |                             | 6-8 with timothy               |
| Alsike              |                                   |                             | 4-8 with timothy               |
| White Clover        |                                   |                             | 2-4 with other pasture plants. |
| Sweet Clover        | 12-24                             | 12-20                       |                                |

Depth of seeding is also an important factor. In general, the principle of shallow seeding for small seeds and deeper seeding for the larger forage crop seeds holds good. The type of soil of course exerts an influence. Consequently, with the above-mentioned principle there is combined the following: in heavy soil avoid deep seeding while in light porous soil deeper seeding is permissible.

In the seeding of alfalfa and in the seeding down of grass and clover mixtures for hay or pasture, or both, nurse crops are used — preferably barley (1 bus.) for the former and oats (2 bus.) for the latter. They serve to check weed growth, to shelter the young forage crop plants, to shade the ground surface, thereby preventing it from drying out, and to enable a crop (cereal) to be harvested the year of establishment of the forage crop.

#### PROPER CARE

Forage crops when once seeded require some care to ensure their future usefulness. Annual crops seeded in drills require periodic intercultural to check weeds, to conserve moisture and to stimulate growth. Perennial forage crops should be cut regularly at the right stage, ordinarily about full bloom. Alfalfa should be mowed when the young shoots on the crowns of the plants are abundant throughout the stand yet are not long, ordinarily not more than ½ inch. In normal years this corresponds to the stage when the alfalfa is 1/10 to ¼ in bloom. A stubble of adequate length should be left so as to avoid mowing these young shoots, from whence the succeeding growth is derived. Should grass and weeds develop in the stand these should be eliminated by use of cultivator and harrows immediately after removal of the hay crop. Disking may be resorted to where the alfalfa is well established, and particularly where the soil is of a more or less loose nature. Adequate growth, for winter protection, should be permitted to develop after removal of the last cutting—ordinarily not later than the 11th of September. In cutting biennial sweet clover for the first time during its second year a goodly stubble (about 8 inches) should be left by the raised mower knife. Otherwise a second crop cannot be looked for, owing to the cutting

away of the shoots in the axils of lowest branches, which shoots promote new growth. Pasturing late in the fall any meadow or pasture crop is deemed unwise, for by so doing inadequate growth exposes the crowns of the plants to winter injury from which in many instances they do not recover. Thus good management of fields, of forage crops, particularly the perennial kinds, is just as important for continued success therewith as good establishment conditions.

#### PROPER CURING AND STORAGE

Where forage crops are used for hay, as they frequently are, it is also important to see to it that the hay is well cured before drawing into the barn mow. If proper curing takes place in the field—where possible, by use of cocks, in which "sweating" takes place—and if every reasonable precaution is taken to ensure the drawing in of hay adequately dried, there is little danger of fire from spontaneous combustion. Clovers and alfalfa, or mixtures containing these call for special care in this respect, owing to the greater difficulty in drying out sufficiently these crops. Moreover, making hay from these crops by use of cocks, labour permitting, preserves the leaf, in which portion of the crop exists 80% of the protein. Having gone to the expense and trouble he has in the raising of forage crops, it behoves the farmer to not jeopardize his good efforts by carelessness in curing and storing the hay produced from valuable forage crops. Hence a timely warning of danger here in this stage of his operations may not be amiss, particularly in view of the continued prevalence of fires in barns filled to the roof with hay. Too much care in the field cannot be taken, particularly today when more legume hay (clovers and alfalfa) is produced and when the hay is rushed in from the windrow with the hay-loader—an excellent labour-saving implement, but one which should not be misused by using it to rush in hay of doubtful fitness or of excessive moisture-content to justify storage.

#### CONCLUSION

Forage crop culture is of immense importance in Canada, a great livestock country. It is attention to the details of such culture that makes possible high yields of well-cured forage and of pasture for the maintenance of and production from such livestock. Hence a resume, as above, of the essential cultural details may not be amiss.

### Latest About The Lenroot Bill

By W. F. Stephen, Secy, National Dairy Council.

NOTICES in the press of late have announced that the Lenroot Bill has passed the Senate of the United States and will become law within ninety days. This Bill need no longer be a terror to the 12,000 or more Canadian dairymen now shipping milk and cream to the United States. Practically the only man will not be able to hold the United

States market will be the dairyman who will not comply with the conditions required, which are not unduly stringent. The Bill has had many amendments tacked to it and is very different from the original Bill presented last May, which officers of the National Dairy Council of Canada were able to hold up until opposition developed to the Bill in the United States.

One of the United States Senators recently stated on the floor of the Senate—"that the Lenroot Bill had caused the most strenuous fight of any minor Bill that has come before the Senate for some years". and he further stated "that the fight had been a friendly one and that no ill-feeling had resulted". Every firm in the United States that draws milk or cream from Canada put up a strong fight against the Bill. Mr. Harry C. Taylor of New York, who is interested in several Canadian plants, fought the Bill for the Canadian interests and all the time kept in close touch with the Secretary of the National Dairy Council of Canada. He came over to Canada several times and along with Mr. Stephen and others had several conferences with the Minister of Agriculture, Hon. W. R. Motherwell and his Deputy, Dr. J. H. Grisdale. At the first conference a few weeks ago there were also present Mr. Geo. Barr, Dairy Commissioner for Ontario, and Mr. J. E. Bourbeau, Dairy Inspector of Quebec, as well as representatives of the Railways and several of the largest milk and cream exporters.

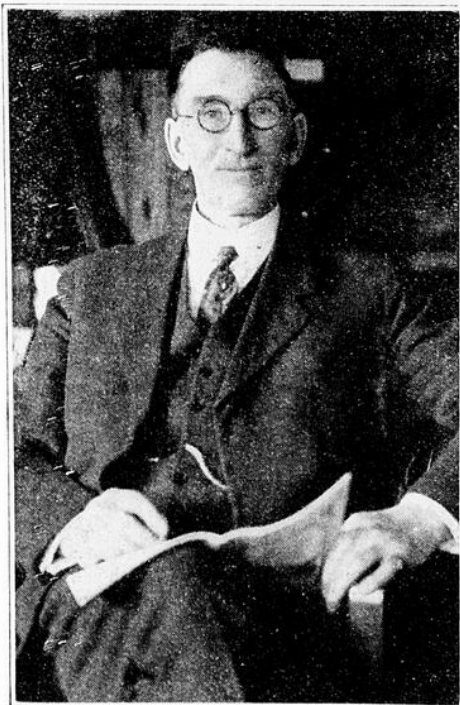
One of the requirements of the Bill is that of inspection of dairies. This temporary inspection the Federal Department have agreed to do with the assistance of the Provincial Departments. At the present time a set of regulations are being drawn up by Mr. W. M. Jardine, Secretary of Agriculture at Washington. When these regulations are completed an opportunity will be given to the proponents and opponents of the Bill to each present their side of the case. With this in view the Secretary of Agriculture at Washington has invited the Hon. Minister of Agriculture and his Deputy to go to Washington to discuss these regulations. W. F. Stephen, Secretary of the National Dairy Council has also been invited to attend the hearings of these regulations. It is quite possible that a hearing will be given late in March or early in April when Canadian Officials will be in attendance to look after the interests of Canadian dairymen.

The Canadian Press of March 5th carried a message from Washington stating that the second efficiency bill, which is the financial bill, failed of passage being defeated by a filibuster at the last meeting before the closing. This Bill carried the necessary funds for the operation of the Lenroot Bill for the balance of this fiscal year. Secretary Jardine says he does not see any way of getting any money to replace this shortage as the Departments are already short of funds for their other operations. However, the Department may use unexpended funds available from balances of other Bills until such time as the new Congress can pass the Appropriation Bill, which will of course not be until next December. In the meantime Canadian Government Officials at Ottawa, also the Secretary of the National Dairy Council and Mr. M. M. Mahoney, Commercial Secretary, Legation of the Dominion of Canada, and Mr. Taylor are looking after the interests of Canadian dairymen and exporters.

### Plant Diseases in Canada

FOR many years the Dominion Department of Agriculture has been making a careful and comprehensive survey of plant diseases in Canada with the result that a great deal of information on the geographical distribution of plant diseases in this country has been collected. This information is now given to the public in a new bulletin entitled "A Summary of the Prevalence of Plant Diseases in the Dominion of Canada," which should prove of great value to plant pathologists, and of interest to agriculturists in general. The Summary records the economic importance of the diseases, traces their spread or stationary character in given localities, and notes their prevalence and dates of occurrence in successive years, often correlating them with prevailing weather conditions. Notice is also taken of observed differences in varietal susceptibility and resistance.

The bulletin, which may be obtained from the Publications Branch, Department of Agriculture, Ottawa, will serve as a basis for the recording of diseases new to the country. It will assist pathologists in the selection of problems for study and give the farming community a greater realization of the importance of plant diseases and the necessity of their control.



W. F. Stephen of Huntingdon, Que., who, after 21 years service as Secretary of the Canadian Ayrshire Breeders' Association, takes office the first of this month as Secretary of the National Dairy Council of Canada. His successor as guiding spirit of the Ayrshire breed is Gilbert McMillan, also of Huntingdon.



# THE EUROPEAN CORN BORER

A new pest in this province—how to control it.

By H. G. Crawford and Georges Maheux

AS has been pointed out to our readers in an article published in a recent number of The Journal, the European Corn Borer has been found in this province during the past season. In view of the seriousness of this pest, Prof. Georges Maheux, Provincial Entomologist for Quebec, has suggested that we bring this matter again to the attention of our readers by reprinting a few excerpts from the Quebec Bulletin No. 92, prepared by Mr. Crawford of the Dominion Entomological Branch, and Prof. Maheux of Quebec, on "The European Corn Borer" with special regard to the Quebec situation. This bulletin is a new one—published in 1927—and should be in the hands of all who fear the ravages of this pest...

The insect was found present in Quebec in the summer of 1926. Co-operative scouting by the officers of the Dominion and Quebec Departments of Agriculture, during that season proved that it was present in Chateauguay county, in the locality of Ormstown and St. Clothilde; in Huntingdon county, in the townships of Dundee, Hinchinbrook and Godmanchester; in St. John's county, in the seigneurie of Lacolle; and in Hull county, in the parishes of Templeton, Eardley and Aylmer.

The rapid spread in Ontario, indicates that it will be but a few years until it will be found present in the entire corn growing area of Quebec. More important, however, than the rapid spread of the insect has been the exceedingly rapid increase in the numbers of the borer in the localities infested. In the counties of Essex and Kent, Ontario, in 1921 it was impossible to find the borer; by 1926 the entire corn crop was virtually ruined over an area of approximately 1200 square miles.

## THE EFFECT UPON THE CROP

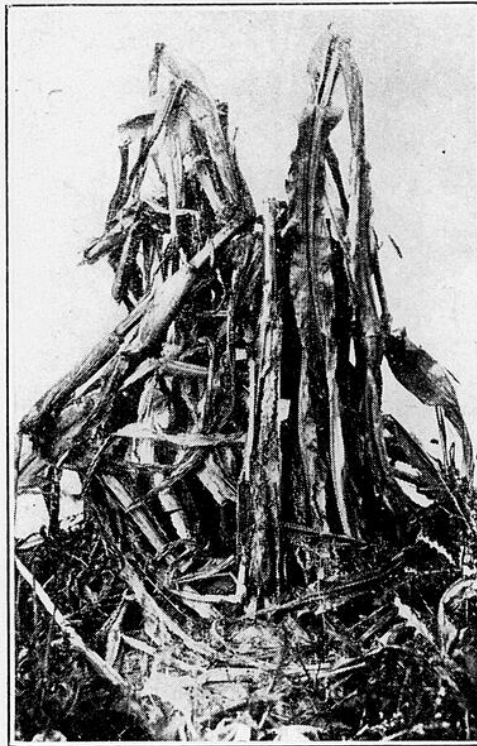
All types of corn are liable to infestation and complete ruin upon any acreage. Dent corn for fodder or grain, flint corn for fodder or grain, and sweet corn for early market or canning, have all been completely ruined over large acreages. The borers attack the corn stalk at any point above the ground. The effect depends upon the number of borers present. A badly infested stalk, with from 10 to 15 caterpillars feeding upon it, collapses by the end of the season (see illustration). The typical condition of such a stalk of field corn would be for most of the centre of the stalk to be eaten out, the tassel to be broken off entirely, and the stalk itself to be broken at two other points, one above and one below the cob. The cob in the majority of cases would be shrunken and undeveloped due to the feeding of the borers in the stalk proper and in the shank, and the damage still further increased by one or two borers feeding directly on the kernels of the ear.

Under such conditions this insect is indeed a very serious pest. The result of its presence in Ontario has been that in 1926 the corn crop, on 1200 square miles in the counties of Essex and Kent, was damaged throughout as described above. The bulk of the corn over even a much greater area was without value for any commercial purpose. The farmers in the most severely infested districts have stopped growing corn of any kind, and corn canning factories have been forced to discontinue their operations.

The infestation in Quebec is still some years removed from such conditions, yet there is little evidence for believing that the borer, if given an opportunity, would not cause equal havoc to the corn in more eastern areas.

## HOW TO RECOGNIZE CORN BORER INFESTATION

The prompt detection of the presence of the borer in corn in the field, is very important as an indication when control activities must begin. Broken tassels are the first easily-noted sign of the presence of the borer both at the beginning of an infestation and during the season. In looking through a field for the corn borer, a special look-out should be kept for these broken tassels. Frequently tassels are broken by the wind at the first joint. When looking for the borer, however, examine first those broken in the middle of the shaft as this is where the tassel usually breaks following its infestation. This tassel infestation actually occurs before it has pushed out from the enfolding leaves. These broken tassels if infested, will show the tunnel inside the stem and usually



A badly infested and collapsed hill of dent corn from Kent County, Ontario, 1925. The corn upon hundreds of acres was practically as bad as this hill.

the young borer which can easily be identified by its light color, dark head and the faint dark dots on the body. The later evidence of the borer requires closer observation until the stalks begin to break later in the season. Meanwhile the presence of the borer is shown by accumulations of moist sawdustlike castings chiefly in the axils of the leaves. Later, the stalks may break, the leaves may turn a reddish color or dry out completely, and if the attack is severe, the whole field will be made up of broken and dead stalks.

## CONTROL

From the above outline of the rapid spread of this insect in Canada, its life-history and habits and the effect upon the corn crop in Ontario, no doubt can be felt as to the necessity or urgency for most determined application of control measures.

Five years thorough study of the insect in Canada shows that with our present knowledge control can be obtained only by the complete destruction of the corn crop remnants of one year before the first of

June of the next year, either by feeding, ploughing under clean or by burning.

The principle of control is based upon the fact that the borer remains in the corn stalk for its entire active life, except during the moth stage. This means that in eleven months of the year it is present in the corn stalks. This makes its destruction under mixed farming conditions very simple. Under these farming practices most of the stalks with the contained borers are naturally disposed of by feeding in one way or another, leaving as a rule only the refuse about the barnyard and the stubble in the field to receive special attention.

## PROPER CARE OF THE CROP

The working out of the general recommendation for control will have to be modified slightly upon each farm to fit local conditions. The following suggestions may help in handling the crop so as to most easily bring about the greatest control with the least effort.

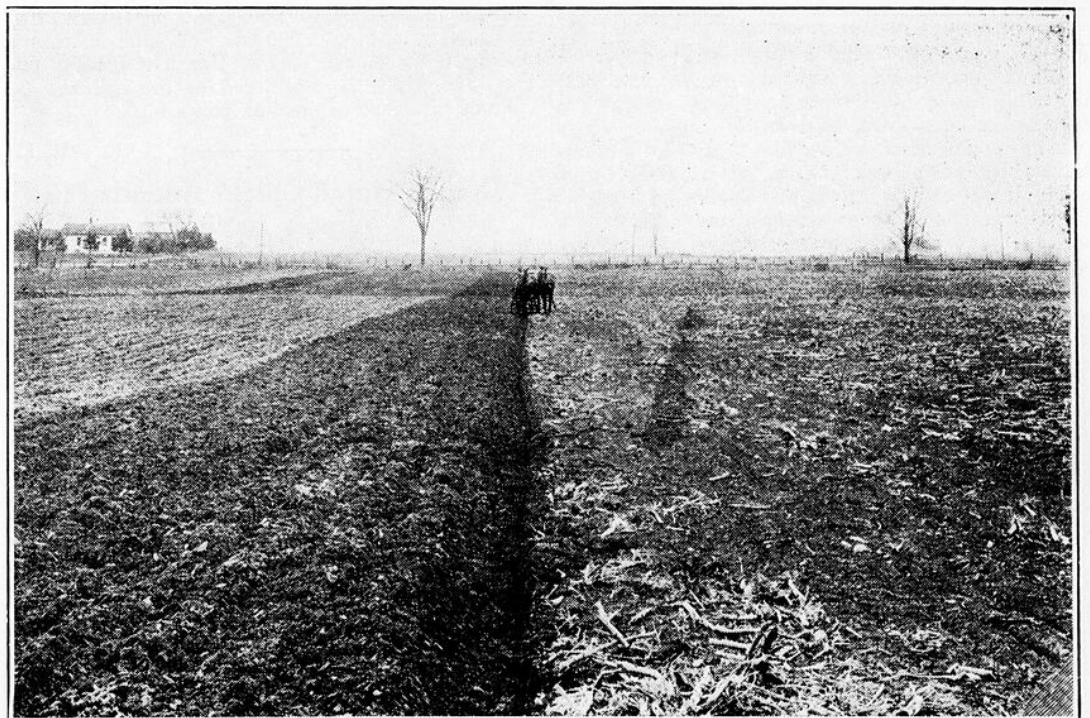
1. Cut all the corn as low as possible, in order to remove the great bulk of borers from the fields with the stalks, thus leaving few in the stubble.

2. Feed completely or burn all of the stalks harvested so that by June 1 no stalks or pieces of stalk are to be found about the barn, barnyard, feeding lot or field.

All corn put into the silo is perfectly safe as almost all the borers are killed in the cutting box and the rest are killed by the heat during fermentation. The shredding of the corn stalks before feeding will kill most of the borers and enable the corn to be fed completely, and so is strongly recommended as a most valuable practice. Feeding the whole stalks dry disposes of all borers in the parts actually eaten but leaves a large amount of refuse which should be burned in the spring. Do not put corn stalks or remnants into the manure. All stalks and remnants which are used for bedding should be piled separately and burned before June 1.

3. Uproot and burn all sweet corn stalks as soon as they have dried out after harvest.

4. Plough all stubble under before June 1 so completely that it is all covered. Ploughing may be done in the fall or in the spring but always with care to keep all the stubble under. Later culture of this land should be with disc tools so as not to pull the stubble to the surface. The stubble brought to the surface by culture should be picked off by hand. When the stubble is turned under, the borers leave it and come to the surface of the ground. If the surface is free from stubble there is no place for them to harbor and almost all perish. If, however, stubble and refuse are left on the surface or brought up by later cultivation the borers on the surface simply tunnel into this refuse and come out as moths to continue the infestation.



An example of first class disposal of corn refuse by ploughing (left) after harrowing 1924. (The illustrations on this page are used through the courtesy of the authors of Quebec Bulletin No. 92).



- The European Corn Borer was found in the Province of Quebec during the summer of 1926.
- The presence of this insect is a most serious menace to successful and profitable corn culture, either for forage, grain or canning purposes.
- The insect has shown that it can live and flourish throughout the corn area of the Province of Ontario and has increased in numbers and spread into new territory with great rapidity.
- The spread and damaging increase of this pest has occurred in a territory similar to the corn growing areas of Quebec and there is no reasonable hope that similar increase will not follow its presence in this Province.
- Immediate precautions to keep the borer down to the lowest possible numbers should be taken by all farmers in infested districts.
- Control can be brought about by the complete disposal of the crop remnants (stalks, stubble and refuse) of one year before June 1 of the next year, either by feeding, ploughing under clean, or by burning.
- The provincial and federal departments of agriculture will do their utmost to control the pest; to this end all interested parties should be ready to do their part.
- Whoever has reason to believe the European corn borer to be present in his field should at once inform the minister of agriculture, the chief entomologist or the district representative.

5. Burn all corn refuse about the farm before June 1. Every piece of refuse about the farm may contain borers so that all corn remnants big and little still about the farm by the end of May should be carefully collected and burned.

### Be Careful When You Buy Dairy Cows

IF it is advantageous, in principle, to replace a few dairy cows in our herd with animals apt to increase the milk yield, we must not overlook the risks that we are courting in making new purchases.

In fact, it is often remarkable that the origin of several diseases, particularly infectious abortion and bovine tuberculosis, is coincident with the appearance of new, undesirable animals.

Consequently, when buying or exchanging dairy cows, we must act very carefully, because in that kind of trade, as in any other kind, all the bargains made do not always turn to the buyer's advantage. There are even cases where we find out that we have practically been victims of a fraud, that "we have been fooled".

We suggest, very particularly, to buy only dairy cows that have undergone, without reaction, the T. B. test; however, we must not overlook the fact that there are unscrupulous breeders or traders who take all the means possible to prevent cows from reacting to the ordinary T. B. test, and in those cases, that test is not a certain proof that the animals in question are free from tuberculosis.

When buying, we recommend, in the few days following the transaction, to have those animals put to the test once more, by a veterinarian in whom you have confidence, telling him that those animals have just been bought. The veterinarian, thus advised, will make a special test in view of frustrating the frauds, if there are any, and he will then be able to tell you positively if the animals are healthy or tuberculous.

Many farmers would avoid troubles of the sort we have just been describing, which would be very easy to prevent if only the breeding and selecting of our dairy herds were carried on with consistency.

The breeder in trying to improve the cattle that he owns, has everything to gain by placing a good sire at the head of his herd. This proceeding is more practical, more fruitful in results than the one which consists of buying now and then second class dairy cows or, in other words, buying cows of an origin more or less obscure.

J. R. ROUSSO, B.A., B.S.A.



Picturesque Quebec—An old home near St. Eustache.

### Remarkable Two-Year Old Record For French Canadian Breed

THE Secretary of the French Canadian Cattle Breeders' Association, Mr. Adrien Morin, forwards us the following interesting news, relative to a new record set by a cow of this breed. "ROBINETTE" the new champion, owned by the Agricultural College at Ste. Anne de la Pocatiere, Que., was inscribed in the Canadian R.O.P. with a production of 10,442 lbs. of milk and 489 lbs. of fat, in the two-year old class.

"ROBINETTE" surpasses the previous butterfat champion, "LUMINA DE CAP ROUGE", owned by the Experimental Farm at Cap Rouge, Que., whose production was 7,848 lbs. of milk and 475 lbs. of fat.

The new champion also holds the milk production record, surpassing "MIGNONNE G", the property of Mr. Albani Sylvestre, of Clairvaux, Que., that produced 9,682 lbs. of milk and 444 lbs. of fat as a two-year old.

A proof that the French Canadian dairy breed is improving, is shown by the fact that since the beginning of 1927, the records for the two-year old class have been broken twice. In the early part of January, "LUMINA DE CAP ROUGE" implanted herself as champion of the class, but her reign was somewhat short-lived, for a little over a month afterwards, "ROBINETTE" took the reigning power in her own hands.

It is interesting to note that "ROBINETTE" produced well-over 1,000 lbs. of milk a month, during a six month period. Her average fat test was 4.68 which is considered as the average fat content of French Canadian cow's milk.

### When to Hatch Chicks Intended For Winter Laying

ACCORDING to actual tests and observations which have been carried on at several of the Dominion Experimental Stations as to the best hatching date for pullets that are intended to be used for the production of eggs during the winter months, the general purpose breeds such as Plymouth Rocks, Wyandottes and Rhode Island Reds, should be hatched in April, preferably in the first three weeks of that month, while a week or two later will do for the smaller and more rapidly maturing Mediterranean breeds such as Leghorns and Anconas. Pullets hatched at these dates will have time to properly mature before the latter part of October when egg production should begin.

### Stallions Inspected and Recommended by the Quebec Department of Agriculture for the year 1927

| Proprietor.                     | Stallion.             | Breed.        | Class. |
|---------------------------------|-----------------------|---------------|--------|
| <b>Argenteuil.</b>              |                       |               |        |
| J. Graham, Arundel.             | Dudé,                 | Percheron.    | 1      |
| J. E. Arnold & Son, Grenville.  | MacD. Sir Spencer,    | Clyde.        | 1      |
| J. E. Arnold & Son, Grenville.  | Doctor K,             | Percheron.    | 1      |
| J. E. Arnold & Son, Grenville.  | Argenteuil Boy,       | Clyde.        | 2      |
| J. E. Arnold & Son, Grenville.  | Culravan Blue Blood,  | Clyde.        | 1      |
| J. E. Arnold & Son, Grenville.  | John,                 | Belgian.      | 1      |
| J. E. Arnold & Son, Grenville.  | Insecto,              | Percheron.    | 2      |
| J. E. Arnold & Son, Grenville.  | Terrington Prince,    | Hackney.      | 1      |
| J. E. Arnold & Son, Grenville.  | Sir Charming,         | Clyde.        | 1      |
| J. E. Arnold & Son, Grenville.  | Mischief,             | Standardbred. | 1      |
| J. E. Arnold & Son, Grenville.  | Woodland Pride,       | Percheron.    | 1      |
| J. E. Arnold & Son, Grenville.  | Arn. Marathon,        | Percheron.    | 2      |
| J. E. Arnold & Son, Grenville.  | Elfrink,              | Percheron.    | 1      |
| G. Moncrieff, Greece's Point.   | Baron Soark,          | Clyde.        | 1      |
| S. A. Fillion, Grenville.       | Prince Mischief,      | Crossbred.    | 3      |
| I. M. Hay, Lachute.             | Craigie Allenby,      | Clyde.        | 1      |
| J. H. Murdock, Brownsburg.      | Hiawatha,             | Percheron.    | 1      |
| T. A. MacAdam, St-André-Est.    | Pinebank Britain,     | Clyde.        | 2      |
| E. Lemay, Brownsburg.           | Barney,               | Crossbred.    | 3      |
| J. E. Arnold & Son, Grenville.  | Brilliant of Lachute, | Belgian.      | 2      |
| J. E. Arnold & Son, Grenville.  | Rosco,                | Percheron.    | 1      |
| <b>Arthabaska.</b>              |                       |               |        |
| J. Marcotte, St-Norbert.        | Le Bijou,             | Canadian.     | 1      |
| A. Gagné, Victoriaville.        | Napoléon,             | Belgian.      | 2      |
| A. Gagné, Victoriaville.        | John,                 | Belgian.      | 2      |
| M. Verville, Victoriaville.     | Midnight,             | Percheron.    | 1      |
| F. X. Labbé, Victoriaville.     | Len-S,                | Percheron.    | 1      |
| F. X. Labbé, Victoriaville.     | Marquis,              | Percheron.    | 1      |
| D. Sicard, Bulstrode.           | Dick,                 | Crossbred.    | 3      |
| A. Fournier, Warwick.           | Trépadour,            | Crossbred.    | 3      |
| J. H. Muldoon, Tingwick.        | Nigger,               | Crossbred.    | 3      |
| <b>Bagot.</b>                   |                       |               |        |
| U. Bélisle, Ste-Rosalie.        | Tom,                  | Crossbred.    | 3      |
| A. Dufresne, St-Pie.            | Eugène,               | Canadian.     | 2      |
| A. Dufresne, St-Pie.            | Prince,               | Crossbred.    | 3      |
| A. Lapalme, St-Hugues.          | Tom,                  | Crossbred.    | 3      |
| A. Deslandes, St-Dominique.     | Sir Leonard,          | Clyde.        | 1      |
| E. Archambault, St-Dominique.   | Viviani,              | Standardbred. | 1      |
| E. Blanchard, St-Nazaire.       | Lion,                 | Percheron.    | 1      |
| A. Laplante, Ste-Christine.     | Rosco,                | Percheron.    | 1      |
| <b>Beauce.</b>                  |                       |               |        |
| P. Pouliot, St-Victor.          | Prince,               | Crossbred.    | 3      |
| F. Rodrigue, Beauceville.       | Galant C. R.,         | Canadian.     | 2      |
| V. Lessard, St-Georges-Est.     | Black Prince,         | Percheron.    | 1      |
| A. Poulin, St-Joseph.           | Gris,                 | Crossbred.    | 3      |
| A. Drouin, Gde-Montagne.        | Frank,                | Crossbred.    | 3      |
| T. Beaudoin, Broughton-Station. | Soldat,               | Belgian.      | 1      |
| T. Beaudoin, Broughton-Station. | Beauceron,            | Belgian.      | 2      |
| T. Beaudoin, Broughton-Station. | Gamin,                | Belgian.      | 2      |
| E. Breton, St-Frédéric.         | Pit,                  | Crossbred.    | 3      |
| R. G. Morancy, Ste-Marie.       | Evan Bellini,         | Standardbred. | 1      |
| G. Pelchat, St-Honoré.          | Distangua,            | Belgian.      | 1      |

(To be continued)

## For Sale --

Thirty Yorkshire bacon type young pigs, immediate delivery. — For further information and prices, please apply to

PROVINCIAL FARM of DESCHAMBAULT,

P. O. La Gorgendiere, Portneuf.



# Crop Varieties Recommended By The Provincial Seed Board

By L. C. Raymond, Agronomy Dept., Macdonald College.

THE Quebec Provincial Seed Board was first organized in 1923. Its personnel is made up of representatives of the Experimental Farms and Colleges, and of Dominion and Provincial agricultural officials. The present Executive Committee is made up of:—

President—J. Simard, Provincial Representative of the Dominion Seed Branch at Quebec.

Secretary—L. P. Roy, Chief of the Field Husbandry Division, Quebec.

Professor R. Summerby, Department of Agronomy, Macdonald College.

The objective of this organization may be stated broadly. It is to raise the standard of the crops grown, through the use of good seed. This is a wide objective and one that is capable of being attacked in a number of ways. Space will not permit enumeration or discussion of all the various lines of work that have already been undertaken. The one important phase that will be considered is that relative to the attached list of recommended varieties.

Quebec is a large Province and one where it would be natural to expect considerable range in the varieties adapted in any one class of crops. One of the first moves made by the Board was to gather together all available information on crop experiments in the Province and from that to make up a list of those varieties that had shown high yield or other favorable characteristics. That is the list that is published herewith. The Board recognizes quite clearly that this is not a final list. It simply represents the very best information available at present. It will change, as it should do if progress is to be made, as soon as and only when more and better information is at hand.

Recognizing the lack of basic information, the Board at once took steps to meet the deficiency by means of what are now known as the Provincial comparative Tests. These tests comprise all the leading farm crops and include within them a wide range of the important varieties. They are at present being conducted, through the co-operation of the men in charge, at five points in the Province, viz. Ste. Anne de la Pocatière, at the Experimental Farm, and at the Agricultural School, at Cap Rouge, at Lennoxville and at Macdonald College. In addition a few tests have been conducted at La Ferme in Northern Quebec. The wide distribution of these stations gives, at least, a decided range in climatic conditions, but soil and other factors are also different. The tests are being conducted in as thorough a manner as possible. To more intimately acquaint themselves with the needs and conditions, the Board as a body makes a trip to all the stations during the active growing season.

The test referred to has now been running for two years and is therefore not yet in a position to allow of any definite conclusions being drawn. Through this medium the Board expects to get at least a tentative basis for zoning the Province, as regards farm crop varieties.

This is the source of information through which the list of recommended varieties will from time to time be amended.

## List of Varieties Recommended By the Quebec Seed Board for the Province of Quebec.

|                |                                                                                                                                                                                         |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Wheat.—        | Bearded.<br>Huron.<br>Bald.<br>Marquis.                                                                                                                                                 |
| Oats.—         | Early.<br>Alaska.<br>Medium Maturing.<br>Banner 44 M. C.<br>Banner O. 49<br>Banner.                                                                                                     |
| Barley.—       | Six-rowed.<br>O. A. C. 21<br>Two-rowed.<br>Duckbill.                                                                                                                                    |
| Peas.—         | Chancellor O. 26.<br>Golden Vine.<br>Arthur.                                                                                                                                            |
| Field Beans.—  | Navy Ottawa 711.<br>Robust.<br>Yellow Eye.                                                                                                                                              |
| Corn.—         | Late Ensilage (Wisconsin No. 7).<br>Medium Late (Golden Glow).<br>(Bailey).<br>(W. C. Y. D.).<br>Early Ensilage (Longfellow).<br>(North West Dent).<br>(Compton's Early).<br>Quebec 28. |
| Swedes.—       | Grain<br>Magnum Bonum.<br>Bangholm.<br>Hall's Westbury (Table use specially).<br>Good Luck.                                                                                             |
| Mangels.—      | Yellow Intermediate.<br>Giant Half Sugar.<br>Sludstrup.                                                                                                                                 |
| Carrots.—      | Giant White Belgian.<br>Improved Short White.<br>White Intermediate.                                                                                                                    |
| Fall Turnips.— | Greystone.                                                                                                                                                                              |
| Potatoes.—     | Early — Irish Cobbler.<br>Late — Green Mountain.<br>Carmen No. 3<br>Red Dakota (Home use in heavy soil).                                                                                |
| Alfalfa.—      | Grimm.                                                                                                                                                                                  |

One of the strongest features of the Board's work is that it is bringing together in a definite co-operative way the various agricultural authorities and focusing their attention on this problem. Provincial, Federal and College men sit around the same board to discuss a common issue.

The issue is one well deserving of the closest study. We definitely need more reliable information regarding the adaptation of varieties. The one thing that can make the Board's work more effective right now is the active support of the farmers of the Province. Any of the stations mentioned will welcome a visit or an inquiry. Revised lists will be published from time to time and more detailed

recommendations will be made. By keeping in touch and testing out the advice offered a splendid avenue is provided for improving our crop yields.

## More About Varieties

By Prof. R. Summerby

IN this number is published a list of varieties recommended by the provincial seed board of this province. Some further information and data on these varieties will no doubt prove of interest to readers. The purpose of this article is to give such information relative to the several varieties recommended.

### OATS

The Banner variety has been grown in Canada for upwards of half a century and has during that time been very widely and generally grown in all provinces of the Dominion. It may be called the pioneer variety in improved agriculture. Its general growth in all parts of the country has been due to the fact that it is adapted to very widely different conditions. In practically all provinces, where adequately tried, it has been found to be among the best yielders. It is medium to late in time of maturity, has a good height and possesses a fairly strong straw. On the other hand its percent hull and general quality is not quite as good as the average and therefore in this respect leaves something to be desired. In spite of this, however, its yield can be depended on to be high, and on the whole it is probably the most reliable variety for general growing.

Several strains of this variety have been selected by different institutions. These strains are developed from single plants whose progeny has proved to be superior to that of other plants. Banner 44 M. C. is one of these selected at Macdonald College while Banner O. 49 is one selected by Dominion Experimental Farms.

The Alaska variety has not had as long a history in Canadian agriculture as the Banner. In recent years it has become very popular in sections which need an oat of its particular characteristics. The characters which determine its place are that it is extremely early, it produces grain of very high quality, it is resistant to smut and through ripening early usually escapes the rust. It has a very high percent of kernel and, while not as generally adapted as the Banner under conditions which suit such a variety, it gives a yield as high as the best varieties. Its particular place is in sections where the season is not long enough for later varieties, and for mixing with early barley varieties, when a mixture of oats and barley is being grown.

### BARLEY

The O.A.C. 21 is a variety of barley developed from an old variety called Mandscheuri. Like the several strains of Banner oats it is developed from a single plant which proved to be superior to others. It belongs to the ordinary common six-rowed type, has a straw of good length and strength and has a blue kernel. It has been tested and grown extensively in all parts of Canada. In all sections where the six-rowed types do best, this variety has shown itself to be among the very best yielders. While there may be other varieties nearly or equally as good, one cannot go far wrong in using this sort in sections most suited to six-rowed barley.

Duckbill.—This type of barley differs from the common six-rowed type mentioned above in several important respects. It is two-rowed, that is to say the head has only two rows of kernels instead of six. It is distinctly later, very strong in the straw, produces a better quality of grain but in most parts of Eastern Canada does not yield as well as the O.A.C. 21 and similar varieties. Where it is desirable to mix barley and oats and a medium to late maturing variety of oats is used this type of barley will ripen more nearly with the oat crop than the O.A.C. 21.

Hannchen.—The Hannchen barley is similar to the Duckbill in that it belongs to the two-rowed type. It is, however, not as strong in the straw. In this regard, however, it is not weak, and one year with another will prove to be stronger than the six-rowed types. While not included in the recommended list of varieties, its very general high yield and quality of grain, where tried, warrants mention in this short description of varieties.



The breakup of the ice at Ste. Anne de Bellevue



# QUEBEC FEDERATED CO-OPERATIVE

## Price List for Seeds and Seed Grains

### IMPORTANT

Put your orders together and buy seed oats by carload lots in order to save on the cost of the oats as well as on the freight.

Please note the oats that can be shipped from Quebec; they are indicated on the list.

All other seeds will be shipped from St. Rosalie Jct.

The name of varieties of seeds on this list marked by a star (\*) are particularly recommended by the Provincial Seed Board. Take advantage of this Board's suggestions.

#### Banner Oats No. 1

In Bulk, Carload, F.O.B. Quebec or St. Rosalie Jct. \$1.15 per 34 lbs.

#### Banner Oats No. 1

In Bags, Carload, F.O.B. Quebec or St. Rosalie Jct. \$1.20 " " "

Bags charged at \$0.05 per bushel.

No discount will be allowed on prices of oats for carload lots.

#### Banner Oats No. 1

Less than carload, F.O.B. Quebec or St. Rosalie Jct. \$1.30 " " "

Bags charged at \$0.05 per bushel.

### FOR SHIPMENT F.O.B. ST. ROSALIE JCT.

|                                                     |                      |
|-----------------------------------------------------|----------------------|
| *Banner Oats 44 M C Elite Stock                     | \$ 1.75 per 34 lbs.  |
| *Registered Banner Oats 44 M C                      | 1.60 " " "           |
| *Registered Banner Oats                             | 1.50 " " "           |
| (Special) Banner Oats No. 1                         | 1.35 " " "           |
| *Registered Alaska Oats                             | 1.60 " " "           |
| *Alaska Oats No. 1                                  | 1.40 " " "           |
| Bags for oats will be charged at \$0.05 per bushel. |                      |
| *Registered Marquis Wheat (Kjellander)              | \$ 3.00 per 60 lbs.  |
| *Marquis Wheat No. 1                                | 2.65 " " "           |
| Red Fife Wheat No. 1                                | 2.50 " " "           |
| *Registered Huron Wheat                             | 3.00 " " "           |
| *Huron Wheat No. 1                                  | 2.75 " " "           |
| Silverhull Buckwheat No. 1                          | 1.45 per 48 lbs.     |
| Japanese Buckwheat No. 1                            | 1.40 " " "           |
| Mandchourie Barley No. 1                            | 1.60 " " "           |
| *O. A. C. No. 21, Barley No. 1                      | 1.80 " " "           |
| *Duckbill Barley No. 1 two rowed                    | 2.00 " " "           |
| *Golden Vine Peas No. 1                             | 2.90 per 60 lbs.     |
| White Beans No. 1                                   | 4.00 " " "           |
| Black Tares No. 1 Imported                          | 3.00 " " "           |
| Black Tares No. 1 Quebec                            | 2.50 " " "           |
| Spring Rye No. 1                                    | 2.25 per 56 lbs.     |
| Fall kye No. 1                                      | 2.35 " " "           |
| Timothy No. 1 Rosalie                               | \$13.50 per 100 lbs. |
| Timothy No. 1 La Reine                              | 11.00 " " "          |
| Mammoth Clover No. 1 Rosalie, Canadian              | 45.00 " " "          |
| Red Clover No. 1 Rosalie, Canadian                  | 40.00 " " "          |
| Red Clover No. 1 Rosalie                            | 36.00 " " "          |
| Red Clover No. 1 La Reine                           | 35.00 " " "          |
| Alsike Clover No. 1 Rosalie                         | 35.00 " " "          |
| Alsike Clover No. 1 La Reine                        | 34.00 " " "          |
| White Clover No. 1 Rosalie                          | 65.00 " " "          |
| Sweet Clover No. 1 White Blossom                    | 15.00 " " "          |
| *Grimm Alfalfa No. 1 (Genuine)                      | 32.00 " " "          |
| Varigated Alfalfa No. 1 (Peel County)               | 26.00 " " "          |
| Japanese Millet No. 1                               | \$15.00 " " "        |
| Flax Seed No. 1                                     | 7.50 " " "           |
| Russian Sunflower No. 1                             | 15.00 " " "          |
| Orchard Grass No. 1                                 | 40.00 " " "          |
| Meadow Fescue No. 1                                 | 60.00 " " "          |
| Kentucky Blue Grass No. 1                           | 65.00 " " "          |
| Rape, Dwarf Essex No. 1                             | 15.00 " " "          |

|                                   |                     |
|-----------------------------------|---------------------|
| SEED CORN: *Longfellow No. 1      | \$ 3.00 per 56 lbs. |
| *Compton No. 1                    | 3.00 " " "          |
| Sanford No. 1                     | 3.00 " " "          |
| *Wisconsin No. 7, No. 1           | 2.50 " " "          |
| Improved Leaming No. 1            | 2.40 " " "          |
| Red Cob No. 1                     | 2.30 " " "          |
| *Golden Glow No. 1                | 2.50 " " "          |
| *White Cap Yellow Dent No. 1      | 2.50 " " "          |
| *Quebec Yellow Corn No. 28, No. 1 | 4.50 " " "          |
| North Western No. 1               | 3.00 " " "          |

Jute bags, except those used for oats, will be charged at \$0.15 each.

Cotton bags will be charged at \$0.35 each.

ALL BAGS ARE UNRETURNABLE.

### ROOT SEEDS

|                        | 1 to 5 lbs. | 5 lbs. & more |
|------------------------|-------------|---------------|
| MANGELS: Yellow Stryno | \$0.70 lb.  | \$0.60 lb.    |
| Perfection             | 0.70 "      | 0.60 "        |
| Mammoth Red Giant      | 0.70 "      | 0.60 "        |
| *Giant Yellow Interm   | 0.70 "      | 0.60 "        |
| SWEDE: Buffalo         | 0.70 "      | 0.60 "        |
| TURNIP: *Hall Westbury | 0.85 "      | 0.75 "        |
| Canadian Gem           | 0.70 "      | 0.60 "        |
| CARROT: *White Belgium | 0.90 "      | 0.80 "        |

All orders must be addressed to ST. ROSALIE JCT., BAGOT CO., QUE.

TERMS: —CASH.

3% discount will be allowed to Farmers Clubs, Agricultural Societies, Co-Operative Societies and Breeding Syndicates of the Province of Quebec, provided their accounts are paid not later than June 1st 1927.

All Prices are subject to market fluctuations and to our confirmation.

### TERMS OF SALE

We take the greatest personal care in the selection, cleaning and testing of all our Seeds and guarantee the standards of analytical purity and germination to be in conformity with the provisions of "The Seeds Act, 1923". But we particularly request it to be understood that we give no warranty, express or implied, as to description, productiveness, quality, or any other matter connected with any Seeds we send out, nor will we be in any way responsible for the crop when the Seed has been sown, as Seeds of the finest quality sometimes fail under adverse climatic conditions or other circumstances beyond human control. Therefore the goods are sold on the express condition that when they have been accepted our responsibility entirely ceases.

### FERTILIZERS

In carload lots, minimum 20 tons, for delivery from now until May 1st 1927, we quote Acid Phosphate 16% Available Phosphoric Acid, in 125 lbs. bags, at \$20.00 per ton, delivered to Stations in the Province of Quebec, except Lake St. John district and points situated east of Rimouski.

No other fertilizer can be included in cars of Acid Phosphate.

Less than carload orders will be shipped from St. Rosalie Jct. at following prices, freight from St. Rosalie Jct. to destination to be paid by purchaser:

|                     | ANALYSIS        | BAGS     | PERTON  |
|---------------------|-----------------|----------|---------|
| Acid Phosphate      | 16% Av. Ph. Ac. | 125 lbs. | \$22.00 |
| Basic Slag          | 15% Av. Ph. Ac. | 200 lbs. | 20.00   |
| Muriate of Potash   | 48% Potash      | 200 lbs. | 38.25   |
| Sulphate of Potash  | 48% Potash      | 200 lbs. | 49.00   |
| Nitrate of Soda     | 15% Nitrogen    | 167 lbs. | 62.80   |
| Sulphate of Ammonia | 20% Nitrogen    | 200 lbs. | 60.00   |

For Shipment from Quebec:—We still have in Quebec a few cars of Basic Slag 15% available phosphoric acid in 200 lbs. double bags, which we offer as follows:

|                         |                                  |
|-------------------------|----------------------------------|
| Carload minimum 20 tons | \$18.00 per ton on Wharf, Quebec |
| Less than carload       | 20.00 " " " "                    |

Terms: Carload: Sight draft attached to Bill of Lading.  
Less than carload: Money with the order.

### "SUPREME" SEED CLEANERS

They are built in the Province of Quebec and fixed up with many important devices which give them a supremacy over the American cleaners.

|                                       |         |
|---------------------------------------|---------|
| Supreme Cleaner No. 1 with 15 screens | \$40.00 |
| Supreme Cleaner No. 2 with 15 screens | \$50.00 |

### SANITARY ENAMELLED CANS No. 2 1/2

|                       |                   |
|-----------------------|-------------------|
| By crates of 250 cans | \$12.50 per crate |
| Extra ends            | \$ 1.50 per 100   |

Those prices are F.O.B. St. Rosalie Jct. TERMS: Money with the order.

### SAVE MONEY by placing your orders with us

We can supply your requirements for:

|                                     |                        |
|-------------------------------------|------------------------|
| Grain, Flour and Feed,              | Paints,                |
| Fertilizers,                        | Varnishes,             |
| Farm implements,                    | White lead,            |
| Hay baling wire,                    | Motor Oils,            |
| Wire Fence and Fencing accessories, | Gasoline,              |
| Seed grain,                         | Tires and tubes,       |
| Salts, coarse and fine,             | Galvanized iron, plain |
| Salted and canned fish,             | or corrugated,         |
| Roofing papers,                     | Supplies of all kinds  |
|                                     | for butter and         |
|                                     | cheese factories.      |

AND THIS WILL PROVE TO BE REAL AND PROFITABLE  
CO-OPERATION.—Ask for our Price Lists.

QUEBEC FEDERATED CO-OPERATIVE  
114 St. Paul St. East, Montreal.



# THE 1927 FRUIT SPRAY CAMPAIGN

By Prof. T. G. Bunting, Horticultural Dept., Macdonald College.

**S**PRAYING will ever be one of the most important problems confronting the fruit grower in producing high quality fruit. Failure or partial failure will not only decrease the yields, but so lower the grades that it may be impossible to secure a profit. The application of the spray materials seems one of the simplest things, yet it is here that so many fail. Provided the right solutions are obtained and properly mixed, the success of the work will depend on the thorough covering of all parts of the bark, foliage, and fruit at the proper time and as often as necessary.

Spraying, for insects particularly, must be timely in order to have the maximum effect in control. Too early, as well as too late, spraying cannot be expected to result in a high percent of control. Fortunately the spray calendars have been well worked out and tested so that they may be considered a safe guide. Unfortunately no one spray will suffice for fruit trees, as there are numerous insects and diseases, some of which infest the trees at one time and some at another; others, like the apple scab, may spread the attack over a long season. Further, rains will in time wash the spray material from the trees and new surface of leaf and fruit are exposed to infection. It is strongly urged that one should become acquainted with the various orchard pests, their life histories and manner of injuring the crop, and then by intelligent spraying based on a wide knowledge of the pest, endeavor to make the application of the spray material so thorough that there will be a high percentage of control, rather than spray by "rule of thumb". Consult the spray calendar and use it as a guide.

Low pressure, low capacity nozzles, short length of hose and a slow moving man on the spray rod or spragun are conducive to poor work. A quick acting man will economize material and cover the trees more thoroughly. It is not desirable to be too economical of spray liquid, but rather to drench all parts of the tree. It is a wise plan to occasionally examine a tree before the spray dries, in order to determine how well the liquid has covered the tree; in this way one can check up on the work. The importance of the work of spraying can be appreciated when it is pointed out that in many places spraying schools are held to teach men the best and proper way to spray.

Poor control is often the result of delaying the application for a few days, or from being behind on account of weather conditions. For this reason it is very desirable that one be fully provided with the necessary materials and have the spray outfit in good working order by the time the campaign should commence. Spraying should not be done during rain, but during a prolonged spell of rainy weather, when there is danger of too great delay, one can take advantage of short periods between rains to continue the spraying. If the spray has sufficient time to dry before the next rain, it will be quite effective. A wet season will make it more

difficult to do effective spraying, and one may have to apply additional sprays, especially for scab during mid-summer.

Aphids, in many orchards, have become a more serious problem of late years than formerly. Lime sulphur is a partial control for aphids, but in a season that is favorable for their development it may not hold them in check and they may do serious damage. Nicotine sulphate, a contact spray, should be added to the regular sprays, at the rate of three-quarters of a pint to every 100 gallons, whenever aphids are abundant. The red bug and red spider are also reported as becoming pests in some orchards. Lime sulphur will destroy some of the eggs and adults, but where they are plentiful, nicotine sulphate should be used.

The leaf rollers or canker worms sometimes do considerable injury. Where they are abundant the arsenical poisons at the usual strengths do not always give good results, so it is desirable to increase the strength by 25% to 35%, when better control should result. There may be a second brood of the codling moth, or a partial one, in mid-summer and where this has been known to occur in the past the arsenical poison should always be put in the fourth and fifth sprays when spraying for scab.

**Oil sprays:** These are becoming more general in the United States for scale insects and as a contact control for some others such as the aphids, red bugs, leaf rollers, etc. There may be danger in their use and many fruit growers have seriously or partially injured their crop by the improper use of oils. Scalicide is a miscible oil that has long been in use as a dormant or delayed dormant spray. It is an excellent control for scale insects and is recommended for the apple tree canker. Applied as a dormant or delayed dormant spray it will take the place of the first lime sulphur spray, but there is no great in which case it may be necessary to go over the regular spray program for eastern Canada.

#### Spraying young trees:

Frequently inquiries come in regarding spraying young trees not yet in bearing. These, of course, should always be protected against any serious disease or insect, but generally speaking, they will not require as many sprayings as the bearing trees. The first spray of the regular schedule should be applied to these young trees, and thereafter during the season only such sprayings as are necessary. Leaf eating insects are usually the ones that will give trouble to young trees, but often aphids will become so numerous that they will seriously effect the young branches and cause the leaves to curl. If aphids become plentiful by all means spray at once with nicotine sulphate. If they have caused the leaves to curl badly spraying may not be effective, in which case it may be necessary to go over the trees and dip the badly affected branches into a solution of the nicotine spray material.



Modern super-power spraying outfit in operation in British Columbia. Note two spraguns and two spray rods, each with two nozzles. It has a 12 h. p. engine and delivers 2,400 gallons of liquid a day.

#### Quantity of spray to use:

No definite information can be given, for it will vary with the size of the tree and the thoroughness of the job. It is better to use an abundance of material rather than to economize and run the danger of poor control. Bearing trees may require from several to as many as six or more gallons per tree per spray. One should carefully estimate the amount of material likely to be required and provide for it in advance of spraying.

#### Arsenate of lead versus arsenate of lime:

It has been possible to obtain excellent brands of arsenate of lime in Canada, and as its cost is about two-thirds that of arsenate of lead and its arsenical content about 35% higher, it is by far the cheaper arsenical poison. Some brands of arsenate of lime have caused spray burning and may not be safe to use; however, as a precaution an equal weight of hydrated lime may be used with it. Investigation of some complaints from the use of arsenate of lime has indicated faulty application or an inferior brand. Arsenate of lead is a standard insecticide for leaf or fruit eating insects and is safe to use on all fruit trees, but its cost will be just about double that of arsenate of lime.

#### Cost of spraying:

The lime sulphur will cost from fifty to seventy-five cents per 100 gallons of spray, arsenate of lime about twenty-five cents and nicotine sulphate when used about one dollar, so that the total cost of the spray material will range from about one to two cents per gallon. The labor of preparing the sprays, interest on investment, depreciation and repairs is a variable quantity and will approximate somewhere about one cent a gallon. The cost of application is another variable quantity, but where the spraying is efficiently done the cost should not exceed one cent per gallon under average conditions. This will make a total cost of from three to four cents per gallon. From this brief statement one can approximately estimate the cost of spraying. The acre cost is not so important as the cost figured on the basis of barrels or boxes of fruit. It should be pointed out that the most profitable spraying is that which will result in the production of the highest percentage of No. 1 quality fruit. This fruit is, of course, more valuable than the lower grades.

#### Spraying other tree fruits:

The apple spray calendar can be applied with some modifications to the other tree fruits such as are found in Quebec and eastern Ontario. These comprise plums, a few cherries and some pear trees. Insects and some diseases of the apple are similar to those affecting these fruits. The summer and mid-summer sprays are seldom required, the first three sprays usually sufficing.

#### Spraying bush fruits:

Fortunately in this province we are not troubled as much with pests of bush fruits as some other fruit districts. Leaf spots and the currant sawfly are those chiefly encountered. Lime sulphur at the strength recommended for the Green Tip Apple

## The Apple Orchard Spray Calendar 1927

| Time of Application                                                                                                  | Material to Use                                                                                                                                   | For Control of                                                           |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 1. <b>GREEN TIP SPRAY:</b> —Just after blossom bud leaves are opening and before they reach $\frac{1}{2}$ in.        | Lime sulphur 3 gals., arsenate of lime (1) 2 lbs. Water to make 100 gals. If aphids are present add $\frac{3}{4}$ pints of nicotine sulphate (2). | Scab, bud moth, tent caterpillar, leaf roller, case bearers, aphids (2). |
| 2. <b>PINK OR PRE-BLOSSOM SPRAY:</b> —Before the clusters of blossom buds separate.                                  | Lime sulphur 2 $\frac{1}{2}$ gals., arsenate of lime (1) 2 lbs., water to make 100 gals.                                                          | Scab, bud moth, green fruit worms, leaf roller.                          |
| 3. <b>CALYX SPRAY:</b> —Immediately after the petals have fallen and before the calyces close.                       | Lime sulphur 2 $\frac{1}{2}$ gals., arsenate of lime (1) 2 lbs., water to make 100 gals.                                                          | Scab, codling moth, apple worms, curculio, aphids (2).                   |
| 4. <b>SUMMER SPRAY:</b> —Two to three weeks after the Calyx Spray.                                                   | Lime sulphur 2 gals., arsenate of lime (1) 2 lbs., water to make 100 gals.                                                                        | Scab, leaf or fruit eating insects, apple maggot.                        |
| 5. <b>MID-SUMMER SPRAYS:</b> —To be determined by weather conditions, control of scab, control of apple maggot, etc. | Lime sulphur 2 gals., arsenate of lime (1) 2 lbs., water to make 100 gals.                                                                        | Scab, apple maggot, leaf eating insects, codling moth late brood.        |

**NOTE** 1. Hydrated lime may be used in equal quantities with arsenate of lime as a precaution against burning.  
 2. Nicotine sulphate  $\frac{3}{4}$  pints to 100 gals., should be included whenever aphids and red bugs are present.  
 Arsenate of lead 2  $\frac{1}{2}$  lbs. to 100 gals., may be used in place of arsenate of lime as an arsenical poison.  
 Dry lime sulphur is sometimes used in small orchards on account of its convenience.



Spray should be applied to these fruits just as the leaves are commencing to open. Other lime sulphur sprays will depend on the prevalence of leaf spots or diseases. For the sawfly, any arsenical poison used promptly as soon as the larvae are found to be feeding on the foliage will control them.

Properly thinned and well pruned trees can be more efficiently sprayed than those that have not received the right attention. Fruit trees should be annually gone over in late winter or early spring and all broken, diseased and unnecessary wood

pruned out. Many bearing trees are much too thick with branches and the pruning should consist of thinning these out so that each branch will have plenty of space for full development. Cutting back of branches is seldom necessary except to balance or shape the tree.

Fertilization of the soil, together with a system of soil management that will be conducive to large yields, will help in producing the maximum returns from the spray campaign.

duce vigorous wood for the current season's blooms. Roses are thinned out in the same general manner as above with the additional removal of all blackened (winter killed) wood. They differ somewhat as to the pruning of the flowering wood according to their class. Hybrid perpetuals—cut to from eight to twelve eyes and the lighter growth five to six. Every third year with this system a severe pruning should be practised. Hybrid Teas—cut even more severely than the Hybrid Perpetuals. One should remember with these two roses that the severer the pruning the finer but less numerous will be the flowers. Rugosa roses—remove old wood only, and head back the young growth to the desired height.

#### LAWNS

April and May are excellent months for seeding lawns. After grading operations are finished, remove all debris and rake the soil to a fine tilth, roll and then sow the seed. One and a half pounds to 400 square feet is an average quantity to sow and will give good results. If not experienced, divide the quantity into two parts and sow the first lengthwise in strips about 5 ft. wide. Then sow the remainder crosswise to ensure covering the entire area evenly. Bend the back well and spread the seed with the hand about a foot and a half above the ground. Choose a calm day preferably, but if obliged to sow on a windy day, hold the hand down much closer to the soil. Rake the seed in very lightly and roll again. If the season proves dry, the lawn should be carefully watered but one must use extreme care not to disturb the seed or young grass. When the grass is four or five inches high it should be cut, preferably with a scythe the first time.

#### PLANTING CUTTINGS

Just as soon as the snow clears away, cuttings stored in the cellar should be taken out and heeled in outdoors. When the ground dries sufficiently for planting, they may be set out in nursery rows about 3-4 inches apart in the row. Make sure that the soil is well firmed about the cutting to prevent air spaces which will allow it to dry out. Cover all but the top bud and place the cutting so that all the wood below is covered up. See illustration 2. A & B, correct. C, too high and showing air spaces. Hydrangea and other shrub cuttings taken early in the spring will very often give satisfactory results although it is customary to take these in the fall.

#### On My Way

NOW I live in a house at the end of the road, a privilege and a disadvantage which is not begrudged me by any one I know. Just a little, old, unattractive house about as wide as it is long and so low that dagger-like icicles hanging from its eaves in winter weather almost touch the ground. Around its walls there should be a coat of white with trim green shutters by its windows, but there is not. It should have one or two bits of verandah built against it to soften the sharpness of its outline, but it has not. In all of a century its weathered surface has never known the saving properties, nor the added grace, that paint can give. No color ever changed it from the drabness of a mere dwelling to the thrifty appearance of a well-kept home. Perhaps its neglected state remains because it sits not by the side of the highway where so much of the world may see, but at the end of the road, where none pass by. Or it may be that prosperity never became the lot of any dwellers here to enable them to garnish the humble edifice.

Not far off, and bearing an unmistakable relation to it, stand two weary barns. Their framework, settling under the stress of many years, has yielded here and there just a little, as if to rest the easier. Their outer walls are stained and wasted with the mingled rain and wind and sunshine of a long long time. And when I stand beneath the roof of either one I hear the creak or groan of joints ill-fitting or the tapping of a loosened board swaying in the breeze. Yet there is something very splendid in their structure, — their great hewn logs held together with stout wooden pins, their rafters, fine straight timbers, rearing themselves against each other. They belong to the day when skilful axemen and abundant material were not uncommon, when not only three or four men were builders, but when a whole countryside lent a hand at raising time.

Between these (the house and barns) there runs a path, worn down below the level of the ground by the constant tread of feet. There is a little turning off on one side from the house, and on the other from the barns, that come together at a deep cold well. There stands the pump and hanging on it a drinking cup. And on summer mornings the grass that overhangs the path is wet with dew. Old, old apple trees, whose fruit belongs to the unknown

## General Ornamental Gardening in April

### Planning the Grounds — Simple Tree Surgery — Spring Pruning.

By M. H. Howitt, Macdonald College

AT this time of year the wise gardener is working on ideas for improving his grounds. To ensure a unified result even on the comparatively small lot, a plan should be drawn, preferably to scale. This will serve as a guide and is especially valuable if the work is to be carried out over a period of years. In making this plan the following important points should be kept in mind.

1. The best practice for most conditions is to approximate nature, which is known as the natural style.
2. This natural style calls for (a) open lawns, that is, most of the planting kept to the boundaries. (b) Planting material set in groups and masses. (c) Trees planted so as to frame the house and form a background. (d) Planting of shrubs about the foundation walls. (e) Natural curving lines everywhere.

3. The opposite idea to the natural style is (a) the planting of trees, shrubs, etc., in rows, whether straight or geometrically curved (b) also all lines must be straight or curved geometrically, (c) this geometric and often balanced arrangement does not mean anything like the placing of a row of shrubs among the walk (one or both sides) or dotting a shrub at each corner of the lawn. Many such attempts are seen which constitute very poor formality.

In the informal style, which has been mentioned as most suitable, the two most important items are the framing of the house and the provision of a foundation planting. Briefly, the framing of the house consists of (1) placing trees in the back area so that the house is seen from the front against a background, (2) trees or a tree in front, towards the sides, through which the house is seen and which partially conceal it. These trees also provide shade on the lawn.

A foundation planting consists of shrubs grouped against the wall. The following points should be kept in mind: (1) a good foundation planting need not cover the entire foundation unless it is very ugly; (2) one should aim at variety in width and height; (3) avoid covering necessary cellar windows or darkening first story windows by too tall shrubs.

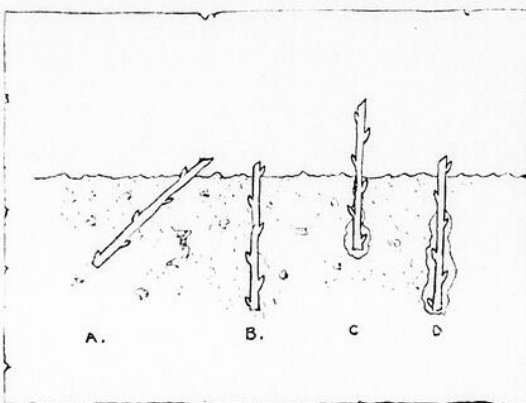


Fig. 2

#### SIMPLE TREE SURGERY

##### Cutting Off Large Limbs of Trees

The long, partially stripped and half rotten stubs that abound everywhere, attest to the fact that comparatively few people know how to remove properly the limbs of their shade trees. If the following practice is carried out, a satisfactory wound that quickly heals will result.

(1) The first item is to prevent the stripping of the bark. Therefore a cut should be made on the underside, a foot or more from the trunk. Illustration 1-A. The distance will depend on the weight of the limb. The heavier the limb the farther out and deeper the cut should be made.

(2) Next the limb is sawn through from above and several inches farther out from the trunk than the undercut. I. B. The branch will then fall and the undercut will prevent the stripping down of the bark.

(3) Following this, the long stub should be removed. If of a size that can be easily held and controlled, there will be no danger of again stripping the bark. Should it seem too heavy, a wise precaution would be to reduce it considerably and avoid the danger. The final cut should be made as close to the trunk as possible, 1. C.

(4) Finally, it is advisable, though not compulsory, to chisel off the edge E. and leave a smooth slightly rounded surface F. over which the bark will readily grow and heal the wound, G. Whether chiseled or not, however, the cut should be thoroughly painted with some neutral brown or grey paint that does not contain turpentine. This is necessary to keep out moisture and to prevent rot and the entrance of fungi. D. shows a long stub badly stripped, which is very undesirable.

**WOUNDS ON TREES:**—Especially on street trees, more or less severe abrasions frequently occur, and unless these are attended to, rot is sure to enter and the tree will ultimately perish. As soon as the abrasions occur and remove the bark, the edges of the wound should be trimmed smooth and the exposed surface painted. In severe cases it is often desirable to cover the edges with grafting wax, to prevent drying, and to bind the whole with strips of cloth or sacking.

#### PRUNING OF HYDRANGEAS AND ROSES

The Peegee Hydrangea (old name Hardy Hydrangea) and the Roses bloom on the current season's growth and therefore should be pruned early in the spring before growth starts. On the hydrangea, first remove all weak and surplus wood and establish the framework of older branches. The branches of this framework should be well spaced and arranged evenly so as to produce uniform growth on all sides. The remainder of last year's wood (twigs that have produced blooms) should be pruned back to two or at most three buds to pro-

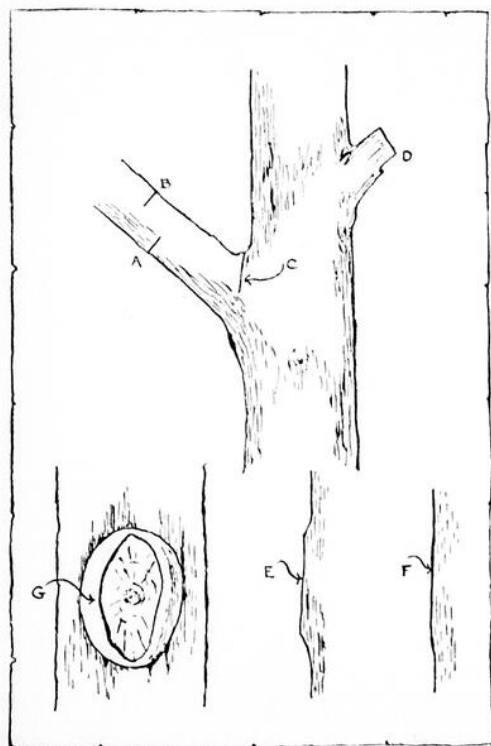


Fig. 1



varieties, whose manner of growth bespeaks no training hand, lean at perilous angles round about. Here, going in and out, back and forth, along this pathway, in the long, quiet fields that stretch down towards the west, and in the deep woods beyond, do I spend my days. Amid such a setting as this, one that only nature can provide, that has been the subject of the painter's brush, the theme of the poet's pen, do I live and move. With the early morning I go forth to toil and at evening come again to my rest, and, as men are, even so am I, a creature of many moods, some evil, some good. I am happy and discontented, congenial and ill-tempered, hopeful and discouraged, grateful and complaining. Now I am anxious for what I see another having, while at that very moment some one else wishes that he might be as well favored as I. Again my heart is satisfied, my mind is peaceful,—only here would I always be.

In my dreamings, when busy with some work that engages my hands but little of my thoughts, I have many idle but pleasant imaginings. For even the most stalwart among us is child enough sometimes to stray outside the bounds of reality. I picture

to myself the people of the past, who have been dwellers here. I have heard something of many of them, as one is sure to do in country places. A number of them I have met, and a few I have known. One built the house,—and vainly I have tried to learn why he put the front door at the back of his home. Some one has said, though no one seems sure, that a road once passed by there. Another moved a barn from some nearby place and set it where the view down the road is entirely obstructed. Why it was left there no one can say, they only remark with a bit of a laugh that he was likely weary of the undertaking. Perhaps looking down the roadway did not at all interest him as it does most people.

But some one dug a well,—and the good that he then did lives after him, for each time that I with my simple tasks, drink a draught from its rock bottom depths, I thank him. An orchard, too, was planted where the front door looks out, trees whose trunks are now stout with age, and whose branches need more of the pruning shears than I have given them, but they yield abundantly, good fruit, luscious to the taste. Perhaps it was the Earl who did some of these things. The story is told that he came

from across the sea, having been deprived or disinherited by unscrupulous men of that which was rightly his, and here at the end of the road he lived for a time. The uninviting door, the hidden approach may have been his, the outward expression of his inward feelings towards a world that had wronged him. Yet some good things remain after him. It may have been he who found himself ailing. Some one did, or thought he did, that is certain, for in the old shed loft even now there is an unnumbered gathering of bottles, the labels of which announce a great variety of patent medicines calculated to cure every known disease of that time. There are, too, amongst them smooth clear flasks, worthy specimens of the glass blower's art, standing shoulders high above the rest, towering tribute to periods of good cheer and forgotten care.

Thus do I with these remaining fragments weave the fabric of my musing. Out of them but little if any value may come. Yet I find myself hoping that when I have passed on my way I may have added something to the good I have found in and about the house at the end of the road.

H. H.

## THE VEGETABLE HABIT

By Myrtle Hayward, Household Science Department, Macdonald College, Que.

"We may live without poetry, music, and art;  
We may live without conscience, and live without heart;  
We may live without friends; we may live without books;  
But civilized man cannot live without cooks.  
He may live without books;—what is knowledge but grieving?  
He may live without hope,—what is hope but deceiving?  
He may live without love,—what is passion but pining?

But where is the man that can live without dining?"

Lord Lytton expressed the above opinion in 1860, and the same feeling towards the art of the cook and the pleasures of dining holds good nearly seventy years later. The agreeable sensations attendant upon the consumption of a meal are always enhanced by a variety in the viands, although the cook may not find it so easy a matter to place upon the table this much desired succession of different foods,—it is far less difficult to serve the same kind of foods in the same old ways week after week. But most homemakers are always eager for "some thing different". Of the foods available, vegetables stand first in their quality of bringing a variation into the daily diet, because there is such a large variety of vegetables, and also because they lend themselves to the construction of many different dishes.

Vegetables are foods that give people vim, sometimes expressed as "pep". The chief substances that perform this function are those rather elusive bodies—the vitamins.

When a diet lacking vitamin A but adequate in all other respects, is given to a young growing rat, growth will continue for a time, probably because of stores of this vitamin which the body possesses. By the time the stores are exhausted it is found that growth stops and there is a general weakening of the body tissues accompanied by an increased susceptibility to infections of different kinds such as trouble with the eyes, lung and skin infections, inflammation of the ears, sinuses, and glands at the base of the tongue. These troubles can be cured and the process of growth reestablished by the introduction of vitamin A into the diet. Carrots and spinach have been found to be very high in "A", but other vegetables having a good quantity are string beans, beet leaves, cabbage, chard, dandelion greens, lettuce, peas, green peppers, squash, tomatoes, celery, corn and potatoes.

Beriberi is a disease in which the nerves become deranged. It is common in the far east, but unfortunately nerve troubles are not unknown in our



own land. Dr. Plimmer is quoted in "Chemistry of Food & Nutrition," by Sherman, as saying: "Before the symptoms of beriberi appear there is a period of ill health in which occur common symptoms met with every day in medical practice. The first sign is loss of appetite; weakness, loss of weight and lack of vigor follow. Later, gastro-intestinal derangements appear,—indigestion, constipation; finally there are symptoms due to derangements of the nervous system. If the shortage of vitamin B is slight the nervous symptoms may never appear, and the organism suffer only from dyspepsia, constipation, and other intestinal troubles. The body is thus weakened and offers but little resistance to invading organisms". Vitamin B is present in nearly all of our common vegetables, as a glance at the table below will show. It appears in relative abundance in all the chief organs of the plants,—roots, tubers, stems, leaves, fruits and seeds. Again spinach is in the foreground in its content of "B", with navy beans and asparagus as close seconds, while nearly all of our common root and leafy vegetables contain vitamin B in fairly large amounts.

As pupils in the public school we learned of the early settlers at Port Royal, at Quebec, and elsewhere in Canada suffering from scurvy, and that during some winters the number of men was depleted by half through the ravages of the disease. Champlain discovered that the sap of one of our native trees had the power to cure his men. Today it is known that the sap contained vitamin C. While such cases of well marked scurvy are not often seen in our own times, yet the results of diet poor in vitamin C are not uncommon. To quote Dr. Plimmer again: "Before definite symptoms of scurvy appear there is a period of ill-health, characterized by certain symptoms which may also be looked for in those who habitually take too little vitamin C, though they get enough to prevent acute scurvy. These symptoms are a sallow, muddy complexion, loss of energy, fleeting pains in the joints and limbs, especially in the legs, usually mistaken for rheumatism. So-called rheumatism in infants and young children has often been proved to be due to insufficient vitamin C, and is really scurvy."

Dr. Hess, the child specialist, has shown that children who may not show any distinct symptoms of scurvy, yet are more or less retarded in growth, are irritable and who lack power of endurance, can be brought back to increased growth, improved disposition and better general health by feeding them foods containing vitamin C, such as tomatoes.

Vitamin C is of further importance.

It has been found that the teeth are one of the first parts of the body to be influenced by a shortage of "C" and they may be seriously affected even when scorbutic symptoms are very slight. "C" seems to aid in the laying down of calcium in the teeth. And who is not desirous of firm, strong teeth?

It has been estimated that the daily amount of vitamin C a grown man needs to protect him from

scurvy is that contained in one ounce of canned tomato, raw cabbage, or onion; or in about one pound of cooked cabbage or potato. But we should remember that the amount of "C" required to protect us from scurvy is only a small portion of what is needed to keep us in a condition of health and vigor.

Among the richest sources of "C" are tomatoes either fresh or canned, raw onions and uncooked cabbage. Carrots and potatoes are not rich in this vitamin, but the large quantities of these vegetables that are eaten in the ordinary diet bring them to the front as important sources of anti-scorbutics.

Vitamin C is very sensitive to heat, especially in the presence of any alkali such as baking soda. To add soda to cabbage during the cooking process will probably destroy nearly all of vitamin C that may be present.

### VEGETABLE AS SOURCES OF VITAMINS A, B, & C.

+ indicates that vitamin is present while +++ indicates that the vegetable is an excellent source.

| VEGETABLE               | A  | B    | C  |
|-------------------------|----|------|----|
| Asparagus.              | —  | +++? | —  |
| Beans, kidney or navy.  | ++ | ++   | —  |
| Beans, string, cooked.  | ++ | ++   | —  |
| Beets — roots.          | ++ | ++   | —  |
| Beets — leaves.         | ++ | ++   | ++ |
| Cabbage, green, raw.    | ++ | ++   | ++ |
| Cabbage, cooked.        | ++ | ++   | ++ |
| Carrots, raw, old.      | ++ | ++   | ++ |
| Carrots, young.         | ++ | ++   | ++ |
| Cauliflower.            | ++ | ++   | ++ |
| Celery.                 | ++ | ++   | ++ |
| Chard.                  | ++ | ++   | ++ |
| Corn.                   | ++ | ++   | ++ |
| Dandelion greens.       | ++ | ++   | ++ |
| Lettuce.                | ++ | ++   | ++ |
| Onions.                 | ++ | ++   | ++ |
| Parsnips.               | ++ | ++   | ++ |
| Peas, canned.           | ++ | ++   | ++ |
| Peas dry.               | ++ | ++   | ++ |
| Potatoes — white.       | ++ | ++   | ++ |
| Spinach.                | ++ | ++   | ++ |
| Squash.                 | ++ | ++   | ++ |
| Tomato — raw or canned. | ++ | ++   | ++ |
| Turnip —                | ++ | ++   | ++ |

Adapted from "Chemistry of Food and Nutrition"—Sherman.

But vegetables contain elements other than vitamins that are essential for health. Iron, calcium, phosphorus, and the other seven or eight necessary mineral elements are found in abundance in vegetables. And who would not prefer a helping of well cooked spinach, properly seasoned with salt, pepper and butter, or a salad of crisp greens, to a dose of iron tonic?

The organic salts which vegetables contain improve the quality of the blood and aid in overcoming that "tired spring feeling" from which so many of us suffer at times. In short, vegetables contain those substances that promote growth in children, build up a resistance to disease, improve



Vegetables help children grow. Raise an abundance.



These will do you more good than iron tonic.



the vitality of the blood, and maintain a state of good health.

Tomatoes are richest in all three vitamins, besides containing iron, calcium and phosphorus,—they can afford to appear on the table three or four times a week. Because of the high iron content, spinach and other greens should be served at least once or twice a week. If one lives in a large city these fresh vegetables can be obtained throughout the winter, but those who do not have the opportunity of visiting city markets will have to fall back upon the canned variety. Home canning is done in the summer months and that time may seem rather a long way off; but the planning and the making of the vegetable garden is much nearer. If the quantity of vegetables for canning that this garden should produce is determined now, there is a greater probability of a sufficient amount being grown. The garden supplies the family with fresh vegetables during the summer months, and can furnish an ample amount for the winter too. Fortunately tomatoes are easily canned by either the cold pack or open kettle method and can be "put up" in large amounts. Spinach and other greens are very valuable foods and good packs can be obtained if the leaves are steamed or partially cooked before they are packed into the jars for processing. Peas and corn can be served once in two weeks; they are included in the following budget as appearing one-half times weekly, which means they can be served every other week. String beans are fairly easily prepared for canning, and can be served once a week throughout the winter. We will suppose there are five in the family, and that a pint jar supplies four or five servings, and that canned vegetables will be required from October to May—about seven months. Then the vegetable canning budget will appear something like the following:

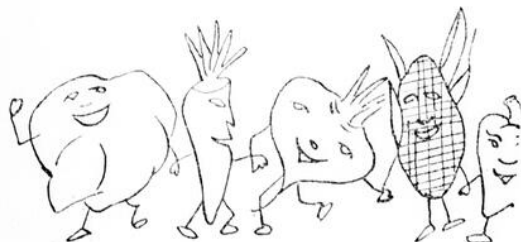
#### CANNING BUDGET

| Vegetable    | Weekly servings | Pints required for one week | Pints required for 7 months |
|--------------|-----------------|-----------------------------|-----------------------------|
| Tomatoes     | 4               | 4                           | 112                         |
| Greens       | 1               | 1                           | 28                          |
| String beans | 1               | 1                           | 28                          |
| Peas         | $\frac{1}{2}$   | $\frac{1}{2}$               | 14                          |
| Corn         | $\frac{1}{2}$   | $\frac{1}{2}$               | 14                          |

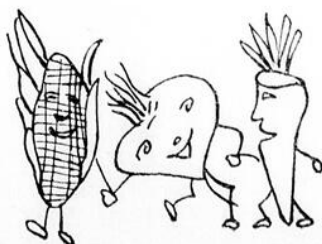
This budget allows for a canned vegetable to be served once daily during the seven months; the easily stored vegetables as carrots, parsnips, onions, beets, cabbage and turnips can appear on the menu as the second vegetable at dinner, or as a supper dish. This budget can be changed to suit the needs of different families.

To grow the vegetables consumed by the family is to cut down the cost of the food; and to serve vegetables in liberal quantities is to improve the health of the family and possibly to cut down the drug bill.

Food and health authorities recommend the use of two vegetables each day other than potatoes or dried beans. A leafy vegetable every day is ideal, but is essential two or three times a week throughout the year. Although this standard applies to each member of the family it is especially important for children. Serve vegetables twice a day and let the family acquire the vegetable habit.



"VITE 'EM 'IN."



### Supper Dishes

SUPPER dishes that are agreeable to the palate, savory, and easily prepared are popular with the homemaker. Among these are scallops, creamed dishes, salads, soups, and casserole dishes. Scallops can be prepared at noon, then put into the oven about twenty or thirty minutes before meal time. When heated through and the top is browned they are ready to serve. Salad ingredients lend themselves to early preparation; it is then only a matter of a few minutes to toss the ingredients together and add the dressing. Soups and creamed dishes are served hot and take but a comparatively short time in preparation.

On cold evenings hot foods are appreciated; while substantial salads are valued on hot days, or salads can be served in smaller quantities as an accompaniment to either dinner or supper.

To give recipes for different scallops is superfluous, as one general recipe will do for all. The ingredients are white sauce and some solid. Prepare a well seasoned sauce, using  $1\frac{1}{2}$  tablespoons of butter,  $1\frac{1}{2}$  tablespoons flour and one cup of liquid,—which may be milk, or half milk and half water in which vegetables were cooked. Mix one cup of prepared sauce with two cups of cooked vegetable, pour the mixture into a buttered baking dish, cover with buttered crumbs, using one tablespoon of butter to one-half cup of dried and rolled bread crumbs. Bake in a quick oven till the sauce bubbles through the crumbs and they are brown. Vegetables that are palatable when cooked as scallops are corn, cabbage, onions, celery, turnips, potatoes, and cauliflower. Add cheese to the white sauce to give a pleasant change in flavor.

There is an exception to every rule and the exception here is

#### TOMATO SCALLOP

|                                         |                     |
|-----------------------------------------|---------------------|
| 2 cups tomatoes                         | 2 tablespoons sugar |
| $1\frac{1}{2}$ tablespoons minced onion | 1 teaspoon salt     |
| 1 cup bread crumbs                      | pepper.             |
| 2 tablespoons butter                    |                     |

Use either canned or fresh tomatoes, cut in pieces, add the onion and seasonings. Cover the bottom of a buttered baking dish with a layer of tomatoes, then a layer of crumbs. Repeat, placing crumbs over the top. Bake as any scallop.

Cream soups have about the same ingredients as scallops, only they are in different proportions. Prepare a thin sauce, using one teaspoon of butter and flour each to one cup of liquid. To each cup of thin sauce add from one-quarter to one-third cup of mashed vegetables. Season, garnish with chopped parsley if desired; and serve with croûtons, toast fingers, or bread. This amount of soup is sufficient for one large serving or two small servings,—it is an easy matter to calculate the amount needed for the number of people who will be served at the supper. Likewise the proportions given in the above general scallop recipe will make about three servings.

Salads offer a palatable and attractive way of serving vegetables, either raw, cooked, or in combination with eggs, fish or meat. A salad may be an economical dish, as many left over bits of food may be combined in an appetizing and pleasing manner.

#### PERFECTION SALAD

|                                  |                              |
|----------------------------------|------------------------------|
| 2 tablespoons granulated gelatin | 1 teaspoon salt              |
| $\frac{3}{4}$ cup cold water     | 2 cups cabbage               |
| $\frac{1}{4}$ " vinegar          | $\frac{1}{2}$ " green pepper |
| $\frac{1}{2}$ " boiling water    | 1 " celery                   |
| $\frac{1}{2}$ " sugar            | 1 " cucumber                 |
| Juice 1 lemon                    | 3 tablespoon pimento         |

Soak the gelatin in the cold water for five minutes, pour on the boiling water and stir until the gelatine is dissolved. Add the sugar and salt, vinegar and lemon juice. Shred the cabbage, and cut the pepper, celery, cucumber and pimento in cubes. When the gelatin begins to set stir in the vegetables and pour into a mould. Serve on lettuce, with salad dressing.

#### CARROT SALAD

Put raw carrots through a food chopper and season them with salt and pepper. Combine with diced celery and a few sweet pickles cut in pieces; or with olives and a few nut meats. Mix with dressing and serve on crisp lettuce.

#### VEGETABLE SALAD

|                                    |                               |
|------------------------------------|-------------------------------|
| $1\frac{1}{2}$ cups cooked carrots | $1\frac{1}{2}$ cups cucumbers |
| $1\frac{1}{2}$ " " peas            | 1 cup cottage cheese.         |
| $1\frac{1}{2}$ " " beets           |                               |

Dice the carrots, beets and cucumbers. Mix each separate vegetable with a small amount of French dressing and let them stand one hour or longer to season. Roll the cheese in small balls. Combine the vegetable, taking care not to break the cubes, add salad dressing and serve on lettuce leaves. Garnish with the cheese balls.

### FISH AND VEGETABLE SALAD

|                         |                                   |
|-------------------------|-----------------------------------|
| 2 cups fish flaked      | $\frac{1}{2}$ cup chopped pickles |
| 1 cup celery diced      | salt and pepper.                  |
| 1 cup cabbage shredded. |                                   |

Tuna fish is good, but any kind may be used. Place it in a bowl, season with a small amount of French dressing, then mix all the ingredients lightly and combine with boiled, or with mayonnaise dressing. Serve on lettuce and garnish with hard cooked eggs, olives or pickles.

#### JELLIED TOMATO SALAD

|                                     |
|-------------------------------------|
| $1\frac{1}{2}$ cups stewed tomatoes |
| 1 tablespoon gelatin                |
| seasonings.                         |

Season the tomatoes by cooking them with a bit of bay leaf, two cloves, slice of onion, one or two stalks of celery, sprig of parsley, salt and pepper. Add a little water and boil about eight or ten minutes. Soak the gelatin in one quarter cup of cold water. Strain the tomato and add the soaked gelatin. When gelatin is dissolved pour the mixture into cups or moulds previously wet with cold water. When the mixture has set, turn it out on lettuce leaves and serve with salad dressing.

M. H.

### Housecleaning Days

When the soap is on the stairway and the rugs are on the lawn,  
And the paperhanger's coming, while the plasterer has gone,  
When the men are all dejected and are bothered with the blues,  
While their wives are madly shuffling in enormous overshoes.  
O, the house is in a turmoil at the very blush of dawn,  
When the soap is on the stairway and the rugs are on the lawn.  
When you're eating from the gas range and are sleeping in the hall,  
And you sit down in the kalsomine intended for the wall,  
And the batter cakes are tinted with a dash of indigo,  
And your coffee tastes of benzine and there's borax in the dough,  
O, a broom will send you sidewise like a timid, startled fawn  
When the soap is on the stairway and the rugs are on the lawn.  
Ah, for somewhere east of Suez, where the best is like the worst,  
And a human habitation by housecleaning is not cursed!  
For there's tumult in the attic, and your room is in a mess,  
And you have to screen the windows with a bureau when you dress,  
And you have a very doubtful springless cot to sleep upon,  
When the soap is on the stairway and the rugs are on the lawn.

—Exchange.

### Report of Quebec Women's Institutes

#### ARGENTEUIL COUNTY

Argenteuil W. I.—Flowers and fruit were sent to the sick; a basket of cooking to a sick family; a book to a girl in hospital and six letters of sympathy to various sufferers. Mr. Maw of Macdonald College gave a very instructive lecture on poultry, and Mr. A. Bothwell spoke encouragingly of the Institute work. At the close of the meeting fifty sat down to a banquet to which all did justice. Hillhead branch. A very fine meeting was held at the home of Mrs. Jim Armstrong. The president, Mrs. Arthur Pollock, read a paper on "Three Kinds of Members". Three new members joined, and several visitors were present. It was decided to do some knitting for a family where the mother is in the hospital. Chatham W. I.—A very interesting paper was given on "Salads and their Value in the Diet". A goodly number of magazines were brought by the members, and packed to send to the St. Agathe Sanitorium. Four new members joined. Jerusalem-Bethany branch arranged to have a taffy social on March 12th. A collection was taken which amounted to \$1.60. Upper Lachute branch held two meetings in February. At the first, two quilts were put together. These were quilted at the second meeting. Both meetings were well attended. There was a short discussion on the advisability of having a hospital for Lachute. Lakefield branch held a sliding party on February 11th followed by a bean supper and dancing. Everyone reported a good time. Nine members and forty-nine guests were present.



## BONAVENTURE COUNTY

*Cross Point Institute* held a whist party, a valentine tea and a sale. A family in poor circumstances is being furnished with groceries, clothing, bedding and all necessities. Plans are being made to hold a concert in the spring. One new member was enrolled. *New Carlisle W. I.* A whist party was held in January. One new member joined the Institute. *Port Daniel branch*—Arrangements were made to hold a valentine dance and a card party.

## BROME COUNTY

*Abercorn W. I.* is actively engaged in various departments of Institute work for "Home and Country". *East Bolton branch* reports a profitable demonstration in dressmaking by Miss Adams. Plans are being made to give a play. *Foster institute* appointed auditors at the last meeting. Conveners of Agriculture and Education read outlines of their departments. Plans were made for the holding of a demonstration by Miss Adams which will be reported later. *Highwater branch* has purchased a piece of land on which it is intended to build a hall. Part of the building material is already procured. Plans were made to hold a box social and dance. *McNeill's Crossing branch* is looking forward with pleasure to a visit from Miss Adams. Plans were made to hold a valentine social and to make a quilt. Papers were read on "Legislation", "Sick Room Diet" and "Education". *South Bolton W. I.* Roll call was answered with sketches of favourite authors. Plans were made for the demonstrations by Miss Adams. A letter was read from the Provincial Convener of Education asking that more interest be shown in the schools. *Sutton Juniors*—These girls are showing much interest in their work for "Home and Country".

## COMPTON COUNTY

*Brookbury W. I.* provided a Christmas treat for the children at a cost of \$9.75, and gave five dollars toward the burial expenses of an old man who had no relatives. This branch has recently paid \$56 toward the debt on the hall. *Canterbury branch*. The January meeting took the form of a birthday party to commemorate the organization of the branch. Blankets have been bought for the school van, dainties sent to the sick and a sunshine bag sent to a shut-in member. *East Clifton* had a paper and discussion on "Laws Governing Married Women in Quebec Provincial". A sunshine bag was sent to an elderly lady who is sick. *Sawyerville W. I.* donated \$15 for school prizes. Christmas cheer was sent to the sick and shut-ins in the form of fruit, magazines, plants, etc., and a successful card party was held. *Bury, Canterbury and Cookshire institutes*—no reports.

## HUNTINGDON &amp; CHATEAUGUAY COUNTIES

*Hemmingsford and Huntingdon Counties*—no reports. *Aubrey-Riverfield W. I.* Response to the roll call was in the form of a valentine verse. Mrs. McKell gave a travel talk on Scotland, both at the time of Burn's Life and at the present time. *Dundee institute*.—"How to prepare for Spring Work" and "Our Social Responsibilities" were the titles of papers read. Plans were made to hold a valentine social as a means of raising funds to repaint the hall. *Franklin branch*.—Roll-Call "My

favourite recipe for Maple Candy". A demonstration on changing a sick bed was given. *Howick branch* reports a debate at their last meeting. Subject "Resolved that Choosing a Wife is of more importance than Choosing a Profession", the negative side winning. A paper was read on Washington Irving. Sewing is being done for the hospital, and money is being donated for the school flower plot. *Megantic County*—no reports.

## MISSISQUOI COUNTY

*Cowansville W. I.* At the January meeting the topic of the day was "Child Welfare". Roll call was answered with "A Favourite Christmas Dish." At the February meeting Canadian Industries were considered, and papers given on the following topics: Asbestos, Fur Farming, Fisheries, Power Industry and Forestry. Altogether the meeting proved most educational. *Noyan branch* is arranging to hold a dance as a means of raising funds. *Dunham and Stanbridge East*—no reports.

## OTTAWA COUNTY

*Alcove Institute* had for their topic "Woman's Rights". Owing to much sickness their meeting was poorly attended. *Aylmer East* meeting took the form of a social evening. Roll call "A name for our farm home". A travelling library is in circulation. This institute is making great strides. They have doubled their membership during the two years. They are planning to give prizes in the schools at the end of the term. Papers on "Protecting the Health of School Children", "Needs of our Rural Schools" and an article on "Immigration" were given. Breckenridge, Cantley Seniors, Farm Point and Cascades—no reports. *East Alcove branch*—No regular meeting in January, but had a progressive Euchre and Bean Supper. At the February meeting a paper "Winter Desserts" was read. *Cantley Juniors*. This group of girls is losing no time. During their meeting hour they are sewing on quilts. Plans are being made to assist in improvements to the school surroundings. At the close of the meeting a box of tempting refreshments was sent to a sick boy. *Eardley branch* had a very largely attended meeting (thirty members and fifteen children). Roll call "Quotations from Canadian Authors". Splendid papers—"Ways of Cooking and Serving Fish" and "Laws Pertaining to the Women of Quebec," were read. A Valentine dance was held and reported on. Quite a display of quilt blocks was shown. *Lascelles W. I.* had papers on "Beautifying the School Grounds" and "Our Birds". *Wakefield and Rupert Institutes*—no reports. *West Templeton W. I.* "A Trip to the Coast" was described by one of the members and souvenirs gathered from the Okanagan Valley were displayed. Arrangements were made to hold a sliding party.

## PONTIAC COUNTY

*Wyman branch* reports three speakers at last meeting, subjects—"Child Welfare", "Music" and report of Miss Edey from Aylmer Convention. Sunshine baskets were sent to the shut-ins. *Portage du Fort branch* has been busy with the making of two quilts, and the study of plants. *Shawville Institute* put on a play in January and realized about \$73. Prizes are to be given in different grades in the High School. Other branches are keeping up their work, though not reporting anything very special.

## RICHMOND COUNTY

*Cleveland branch* is planning to hold an amateur entertainment in March. *Dennison's Mills* reports no meeting held in December on account of an epidemic of scarlet fever. In January they had a social evening. At the February meeting they appointed auditors, made plans to hold a supper and enjoyed a social hour. *Gore Station branch* sent two girls to the Short Course at Lennoxville. The girls were present at this meeting, and displayed the dresses they had made. Two needy families were helped with food and clothing, and an old couple is to be provided with two loaves of bread each week. *Melbourne Ridge Institute*.—No report.

## SHEFFORD COUNTY

*Granby Hill W. I. and Shefford Mountain W. I.*—No reports. *South Roxton W. I.* At the January meeting a paper was read on "Natural Resources of the Province of Quebec", and arrangements were made to hold a whist party. "Agricultural Conditions in Canada" was the topic of addresses at the February meeting. Plans for a community hall are being prepared.

*Warden Waterloo*: The February meeting consisted of sixteen members and nine visitors. The regular business was transacted and a program for the year's meetings was read and discussed, followed by a discussion of Medical Inspection in Schools. Papers pro and con on the above mentioned subject were read. It was decided that four members should approach the school authorities and commissioners of this district to see what aid they would give us. The meeting closed by singing "The Maple Leaf Forever".

## SHERBROOKE COUNTY

*Ascot Branch*: Miss Windsor, Household Science teacher in the Sherbrooke High School, was present at this meeting, and gave valuable suggestions with regard to cooking demonstrations. A paper was read entitled "Home and School". A committee reported that seventy lbs. of margarine had been sent to the lumber camps. A report of the county meeting was given by the delegate, and programme committee appointed. *Lennoxville branch* appointed a programme committee. A brief report of the provincial executive meeting was given, and the treasurer's report was most satisfactory. The chief interest of the members centered around a paper entitled "History and Pioneers of the Eastern Townships". *Belvidere, Brompton Road and Orford institutes*—no reports.

## STANSTEAD COUNTY

*Ayer's Cliff branch* is offering prizes in the school as in former years. At the January meeting a paper entitled "A Practical Housewife's view of Household Management" and at the February meeting "The Place of the Immigrant in our National Life" was the topic. The W. I. members are co-operating with the junior Red Cross in their activities. Five dollars was donated to the school to aid in buying a new encyclopedia. *Hatley institute* reports two successful card parties held. The Convener of Immigration reported that sixteen immigrant boys were remembered with a gift at Christmas and greetings were sent to three immigrant families. A programme committee was appointed for the coming year. "A Home" was the title of a paper read, and lantern slides were shown of Historic England.

*North Hatley institute* sent out at Christmas nine baskets of cheer, two plants and two bunches of cut flowers. A New England dinner has been held, also an afternoon tea, nominating and programme committees were appointed. Twenty-five dollars was voted to the School Board to be applied to the play ground fund, making in all \$400.50 paid by the institute for that purpose. *Way's Mills institute*: A magazine article by Charles A. David entitled "Five Things I have Learned From Birds" was read. Roll Call was answered with "My favourite Bird and Why". Plans were made to hold a community dinner to raise funds to buy a new kitchen range for the hall. Delegates were appointed to attend the County meeting. *Beebe and Tomifobia institutes*—no reports.

## VAUDREUIL COUNTY

*Como, Hudson and Hudson Heights W. I.* This branch reports twelve new members. Miss McCain, Supt., of W. I.'s, was present and gave much helpful inspiration. The Institute has organized an essay Competition in both the French and English schools. The subject for the higher grades is "How to Foster a Good Spirit in a Bilingual Community", and that for the lower grades "How to Keep Healthy". Prizes are being given where deserved by the W. I.

MRS. W. S. ARMITAGE,



Springtime near Beauharnois, Que.



## The Economics of Agriculture

(From page 141)

other line. The manufacturer of hair pins, they tell me, has not been doing too well lately. Nor is it wise to produce too much cotton if we have reached the silken era in our use of wearing apparel. The staple farm products here grown are not so susceptible to changing fashions. But tastes change even in this line. Baby beef sells much higher than older, larger and likely tougher animals, as has been observed for many years. There is still, however, a premium on quality here as in other lines. The farmer must study market demands more closely. His best opportunity of this is through doing his own marketing co-operatively.

Another impossible thing sometimes

sought by so-called co-operation is to eliminate the middle man. Marketing services are necessary. Someone has to supply these services. The question resolves itself into whether or not it will be an advantage to replace private middlemen by employees of the farmers who do their own marketing co-operatively.

With planned production and managed marketing, the farmers may secure a more reasonable share in their reward of effort than they have recently been receiving in comparison with other industries. That they have not been as well remunerated as some other industries recently is generally conceded. In the United States, the Industrial Conference Board has recently published a book, "The Agricultural Situation". This book is not published by a biased authority who hopes to produce a best seller. It is an official publication. This book

# When You Buy "SALADA" GREEN TEA

U154

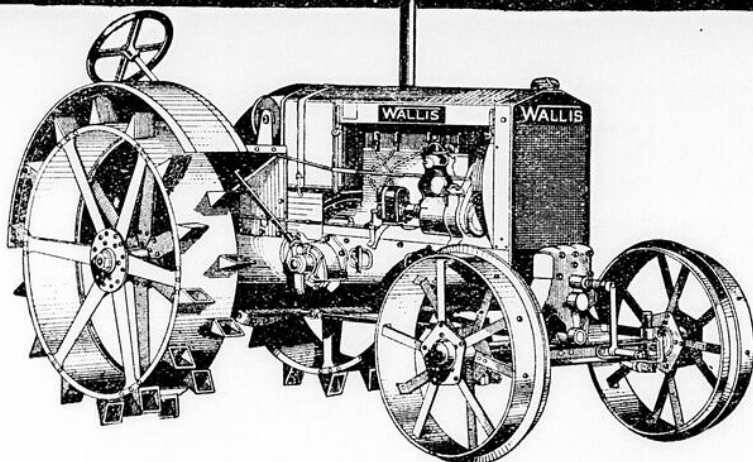
you get purity, strength & satisfaction.

points out that in 1921 farmers comprised over 21 percent of the gainfully employed and received only slightly over 10 percent of the national income.

Since then conditions have improved somewhat in this respect. The complaint that those engaged in farming are not reasonably sharing in the general prosperity is by no means a local phenomenon. It is not confined to this continent, but appears to be some-

**IMPORTANT  
ANNOUNCEMENT**

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In addition to its work in the field for harrowing, cultivating, seeding and harvesting, the Wallis is particularly well suited for belt work. It has a patented U-shaped frame which combines in one piece the oil reservoir, crank case, transmission case, and supporting frame. This encloses the working parts and gives protection against the dust cloud which usually accompanies tractor operations. As a result, low repair expense is a feature of the "Wallis."

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**SPEED**—Low 2½ M.P.H. High 3½ M.P.H.

**OILING SYSTEM**—Positive pump and splash.

**IGNITION**—High tension Bosch Magneto, with Impulse starter.

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**BEARINGS**—Ball and Timken Bearings throughout.

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thing of a world wide condition. This is indicated by the program of the Economic Conference which meets the coming season at Geneva. This conference proposes to discuss commerce, industry, and agriculture. The agenda provides for an enquiry into the causes of the present difficulties of agriculture and the development of the purchasing power of agricultural producers. It is significant that the program does not provide for the discussion of the development of the purchasing power of producers in other industries.

We appear to be doing fairly well in this country in the volume of production of farm products. It is fitting in this year of the diamond jubilee of our existence that some computation of our progress in this line should be noted. The first year of the existence of the Dominion, 1868, the trade per capita of this country amounted to some \$34. It is now over \$200, or over six times as great. Trade is, however, not the best test of progress or prosperity, as it has been frequently observed that people do not grow opulent by taking in each other's washing, though this swells the trade returns. In 1868 our exports amounted to some \$52,000,000 in value. They now

amount to over a billion, or over twenty times as much. At that time our exports of wheat and flour amounted to between \$3,000,000 and \$4,000,000 in value. The present value of these articles exported runs annually between \$300,000,000 and \$400,000,000 and hence are roughly one hundred times as great.

This production has been made possible largely through the fact that the less than four million people of this country at the time of Confederation mortgaged their future rather heavily to supply the transportation essential for this development. The original commitment has since been amplified for the same reason. To this has been added other unexpected expenditures until at present the obligations of the country are by no means small. In 1868 the net debt of the

country was some \$77,000,000. It is now some two billions and a half, or thirty times as great. This makes the question of securing public revenue increasingly important. Post war periods are always hard upon the farming industry. While war prices decline, war taxes remain or are increased. These considerations bring us to the next division of our subject which is—

#### 6. Taxation.

Practically all the revolutions which history has recorded, most of the so-called liberty we now claim, and the most notable steps in reaching that stage of democracy which now prevails are attributable to quarrels over taxation. And the struggle has usually been not over the amount but rather

the form of the levy.

The revenue and expenditure of this Dominion which is now three score years old amounts in round numbers to \$400,000,000. The number of families in the country is around two million. Therefore, the average family contributes in some way or other around \$200 to the federal government. Under such conditions it would not be unreasonable to expect that the question of taxation should be seriously studied. Is it? What do we find? There is duplication and triplication in the federal, provincial and municipal fields until scarcely any of our legislative bodies which are empowered to levy tribute know when their enactments are *ultra vires*—and when they are not. There is an insistent demand for a revamping of the whole system. There is more heat than light on the subject.

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Gas and wind in the stomach accompanied by the full, bloated feeling after eating are almost certain evidence of the presence of excessive hydrochloric acid in the stomach, creating so-called "acid indigestion."

Acid stomachs are dangerous because too much acid irritates the delicate lining of the stomach, often leading to gastritis accompanied by serious stomach ulcers. Food ferments and sours, creating the distressing gas which distends the stomach and hampers the normal functions of the vital internal organs, often affecting the heart.

It is the worst of folly to neglect such a serious condition or to treat with ordinary digestive aids which have no neutralizing effect on the stomach acids. Instead get from any druggist a few ounces of Bisurated Magnesia and take a teaspoonful in a quarter glass of water right after eating. This will drive the gas, wind and bloated right out of the body, sweeten the stomach, neutralize excess acid and prevent its formation and there is no sourness or pain. Bisurated Magnesia (in powder or tablet form—never liquid or milk) is harmless to the stomach, inexpensive to take and the best form of magnesia for stomach purposes. It is used by thousands of people who enjoy their meals with no more fear of indigestion.

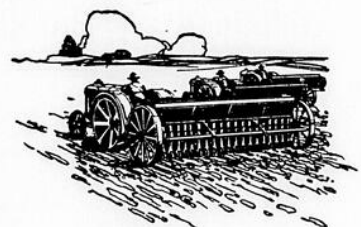
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Greater study is here necessary. Let us consider the personal property tax, which is the great reliance of our municipalities. This tax lacks uniformity, fails to reach those whom it is designed to reach, and is burdensome on those who are honest enough to pay or not clever enough to know how to evade. Space prevents further discussion of this subject, but the presenting of this problem reveals its importance. If, however, after our year's effort is over and our public obligations met, there remains some slight balance, there is still a matter with which our study is concerned. This brings us to the last point, namely—

#### 7. Consumption.

Economics concerns itself with the wealth using as well as the wealth getting activities of men. There are two conspicuous lacks which we may note. One is a lack of goods for the higher wants; the other is a lack of wants for the higher goods. The latter is perhaps even more pathetic than the

former. What shall it profit a man if he acquire the wealth of a motor magnate or a movie star—and our system allows the evolution of these general types—if ability to use this surplus with some degree of discretion is not acquired or retained? The translation of material gain into higher standards of living is an important factor in real progress, whether it be in the material comforts of home conveniences or in that boundless field of educational and cultural advancement. Planned production, managed marketing, equitable taxation and sane consumption may briefly sum up some of the important economic problems confronting the farming industry which may well receive closer attention and more profound study than they have up to the present moment.

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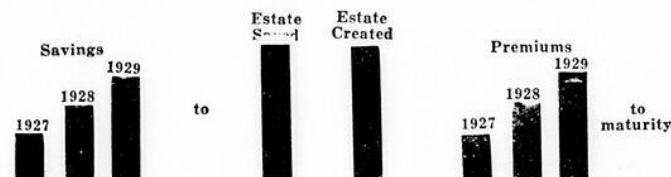
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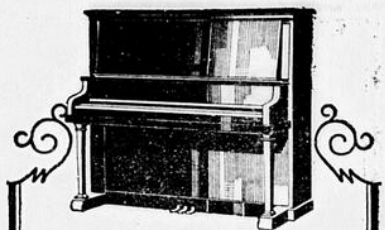
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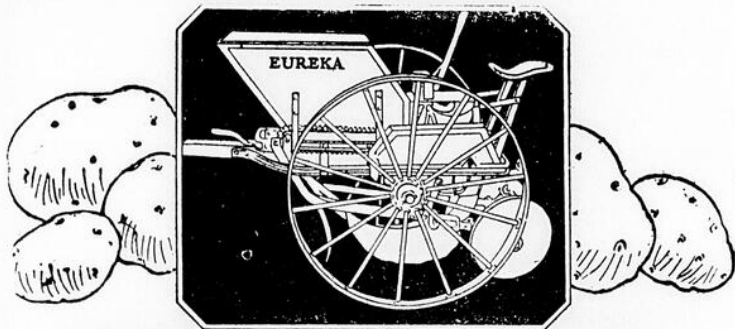
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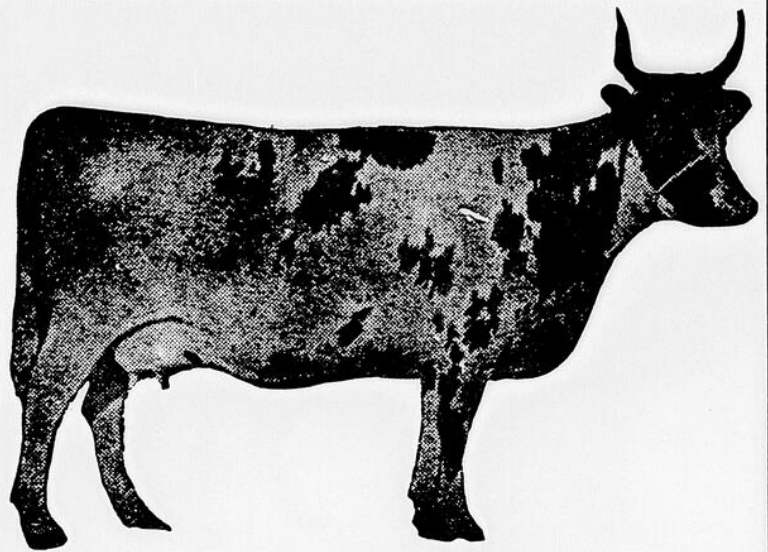
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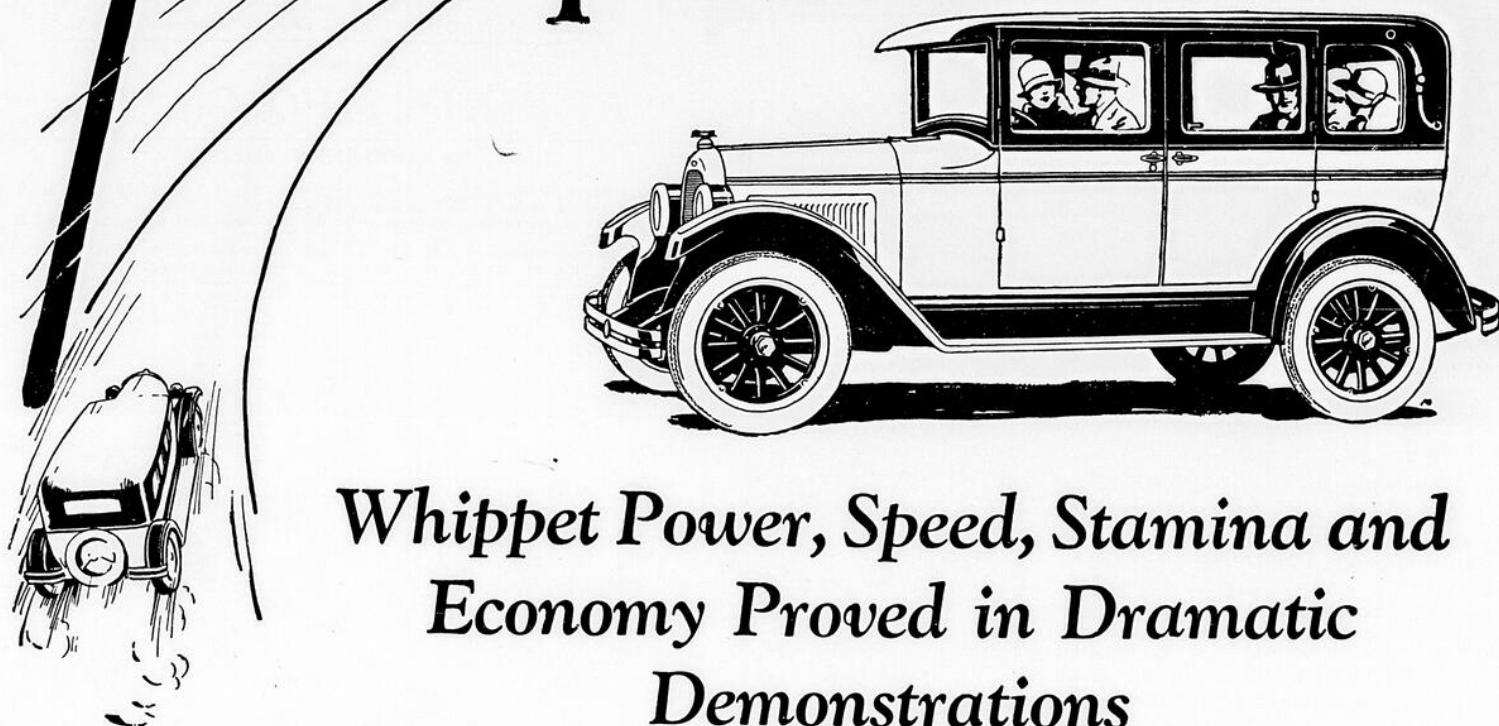
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My machine is a..... years old.

### Singer Shops in Eastern Canada

#### Ontario

Barrie, 53 Elizabeth St.  
Belleville, 279 Front St.  
Brantford, 201 Colborne St.  
Chatham, 179 King St.  
Cochrane, 3rd Ave. and 4th St.  
Cornwall, 228 Pitt St.  
Fr. William, 115½ S. May St.  
Hamilton, 199 King St. E.  
Kingston, 269 Princess St.  
Kitchener, 12-14 Young St.  
Lindsay, 9 Kent St.  
London, 122 Dundas St.  
North Bay, 43 Main St. E.  
Ottawa, 106 Bank St.  
Oshawa, 46 King St.  
Owen Sound, 753 Second Ave. E.  
Peterboro, 174 Hunter St.  
Renfrew, 361 Raglan St., Haynes Block  
Sault Ste. Marie, 349 Queen St.  
Stratford, Ontario St.  
St. Catharines, 269 St. Paul St.  
St. Thomas, 624 Talbot St.  
Toronto, 252 Yonge St.  
Windsor, 18 Pitt St. W.

#### Quebec

Chicoutimi, 108 Racine St.  
Hull, 202 Main St.  
Levis, 64 Cote du Passage  
Montreal, 530 St. Catherine St. W.  
Quebec, 223 St. John St.  
Riviere du Loup, 325 Lafontaine St.  
St. Hyacinthe, 61 St. Francois St.  
St. Jerome, 139 Labelle St.  
St. Johns, 59 Richelieu St.  
Sherbrooke, 63 Wellington St.  
Thetford Mines, 345 Notre Dame St.  
Three Rivers, 102 Des Forges St.

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Campbellton, N.B., Water St.  
Charlottetown, P.E.I., 115 Kent St.  
Fredericton, N.B., 321 Queen St.  
Halifax, N.S., 138 Granville St.  
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St. John, N.B., 45 Germain St.  
Sydney, N.S., 365 Charlotte St.  
Yarmouth, N.S., Main St.  
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For address of nearest shop in Western Canada write

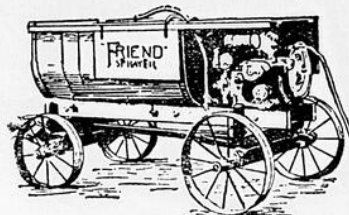
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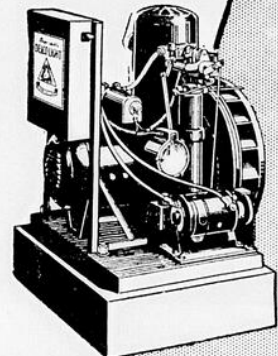
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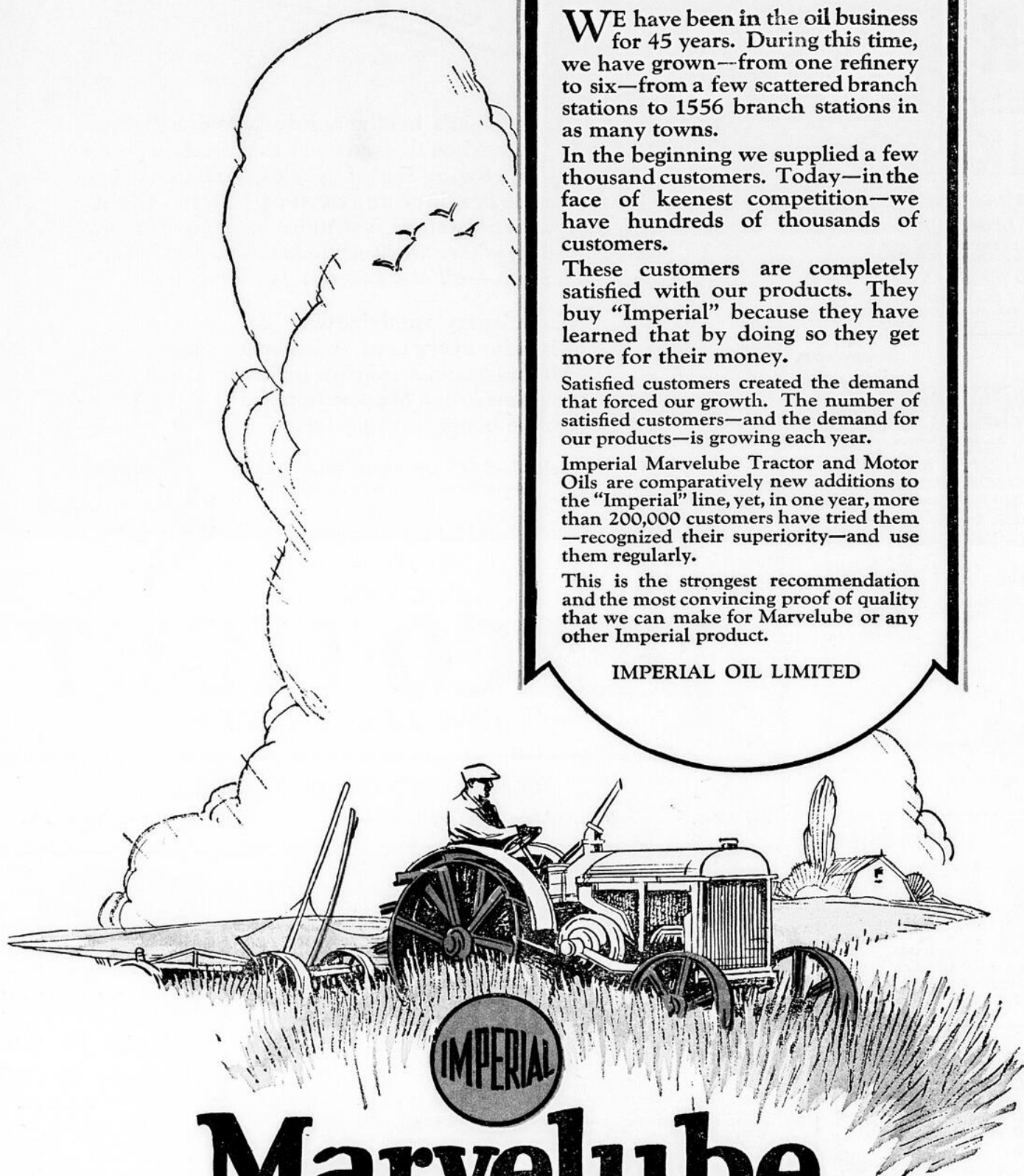
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