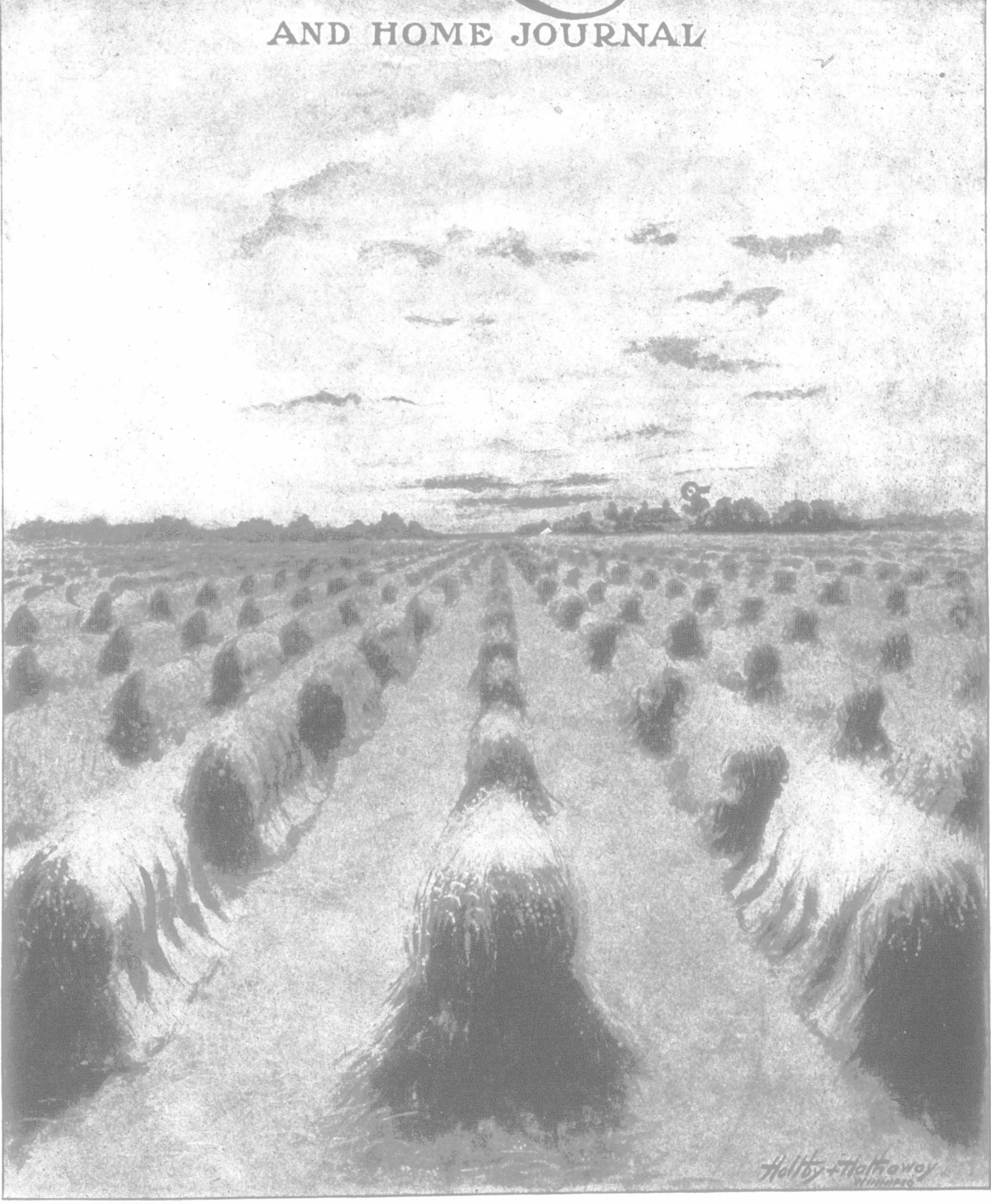


# FARMER'S ADVOCATE

AND HOME JOURNAL



EXHIBITION  
NUMBER

1906

## No other farm paper in Western Canada comes out fair and square like this with

DOMINION OF CANADA,  
PROVINCE OF MANITOBA,  
TO WIT:

In the matter of the circulation of the  
FARMER'S ADVOCATE AND HOME JOURNAL,  
WINNIPEG, MANITOBA.

I, THOMAS BRABYN, of the City of Winnipeg, in the County of Selkirk, pressman, make oath and say that I am in charge of the printing of the FARMER'S ADVOCATE AND HOME JOURNAL, and know its circulation. That the circulation is 20,050 weekly and has been since the first of February, 1906.

THOMAS BRABYN.

Sworn before me at the City of Winnipeg, in the Province of Manitoba, this 10th day of July, 1906.

CHAS. J. O'TOOLE,  
Commissioner in B.R. etc.

## A Sworn Statement of its Circulation

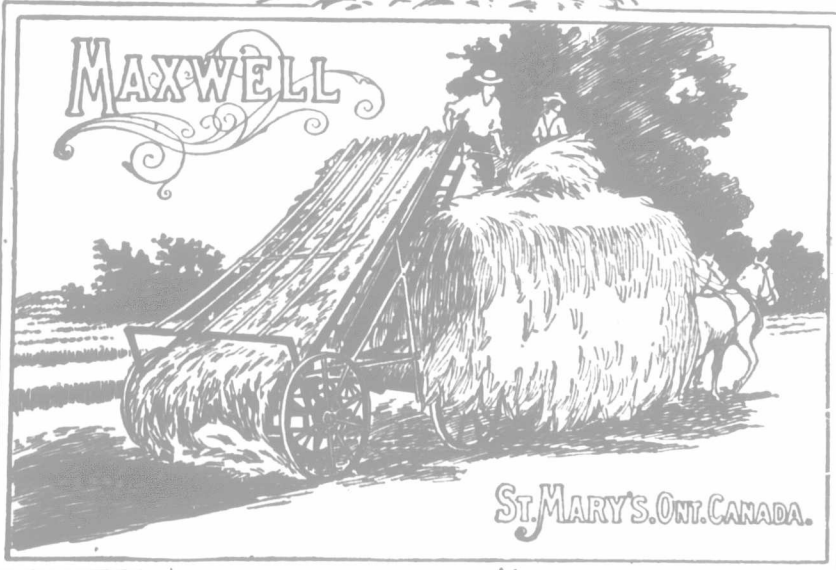
¶ What conclusion do you draw?

SAVE YOUR HAY & SAVE EXTRA LABOR

SPECIAL  
LABOR SAVING  
TOOLS



MAXWELL  
TEDDER  
SIDE DELIVERY  
RAKE & LOADER.



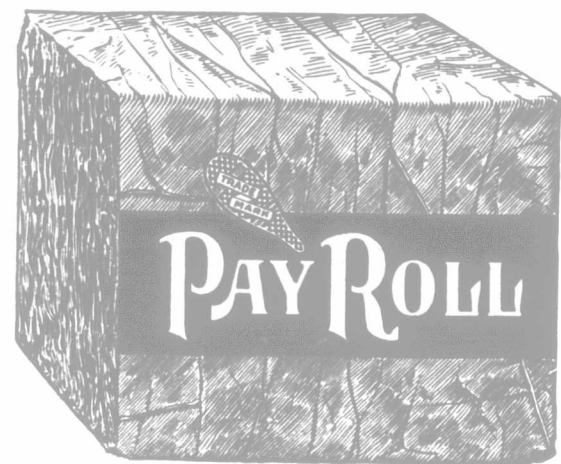
ST. MARY'S, ONT. CANADA.



IS THERE AN  
AGENT IN YOUR  
DISTRICT

IF NOT  
ADDRESS THE  
FIRM DIRECTLY

DAVID MAXWELL & SONS, ST. MARY'S, ONTARIO, CANADA.



Bright Plug Chewing TOBACCO

10c. per Cut.

ALEX. NAISMITH,  
President.

WM. PATERSON,  
Vice-President.

C. D. KERR,  
Treasurer.

The Wawanesa Mutual Insurance Co.

HEAD OFFICE: WAWANESA, MAN.

A. F. KEMPTON, Secretary-Manager

Assets of the Company December 31st, 1904, \$14,542,525.00

For a List of Farmers Insured December 31st, 1904, 12,969

188,401.51

Office of the Company, 100 West of Lake

# De Laval Separators



For the man who  
will have nothing  
less than the best

## The Excellence of De Laval Separators

has built up for them a reputation, not excelled by any manufactured article, nor equalled by any machine built to serve a similar purpose. They represent the perfection of strength combined, with simplicity, rapidity and effectiveness of separation with lowest speed gear, minimum power in operation, beauty of outline and mechanical finish. In addition they embody many other features of lesser importance but which make for convenience and every-day utility, and have combined to win for DE LAVAL SEPARATORS, every exclusive Highest Award in competition open to the world, and to place De Laval machines in practically every creamery on two continents.

The man who buys a Cream Separator without investigating the DE LAVAL, does his own interests an injustice, which will be more apparent each day the other is in use.

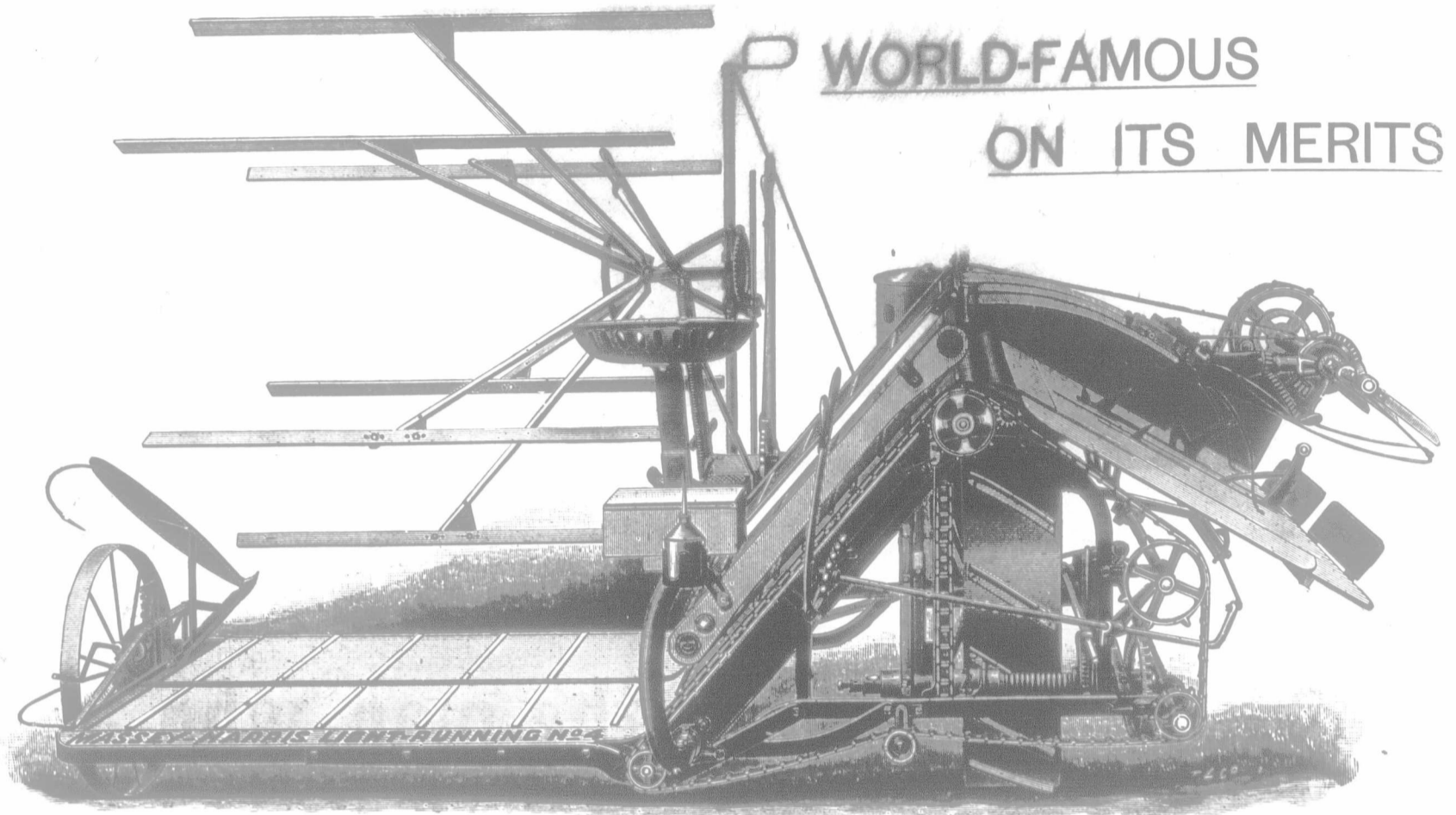


Ask for Catalog

## The De Laval Separator Co.

14-16 Princess Street, WINNIPEG.

Montreal Toronto Vancouver New York Philadelphia Chicago San Francisco Portland Seattle



WORLD-FAMOUS  
ON ITS MERITS

6, 7 OR 8 FT. CUT. POLE TRUCK CAN BE USED WITH EACH SIZE OF MACHINE.

THE BUSY HARVEST SEASON IS NEAR  
—ARE YOU READY FOR IT?—

## BUY A MASSEY-HARRIS BINDER

and you are quite ready to cope with a heavy or down and tangled crop.

KNOTTER

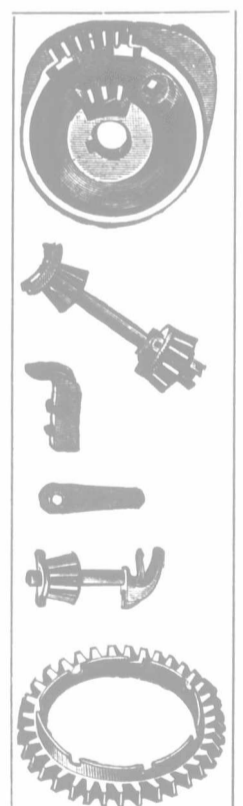


PARTS

### OUR KNOTTER

The reputation of a Binder is made or unmade by THE KNOTTER. Judged by this standard the Massey-Harris Binder is without an equal in the harvest field. The Knotter always ties knots, and ties knots tight. It ties seven sheaves for every revolution of the Cord-Holder Ring. It is adjustable, so that any wear on the pinions may be taken up.

KNOTTER



PARTS

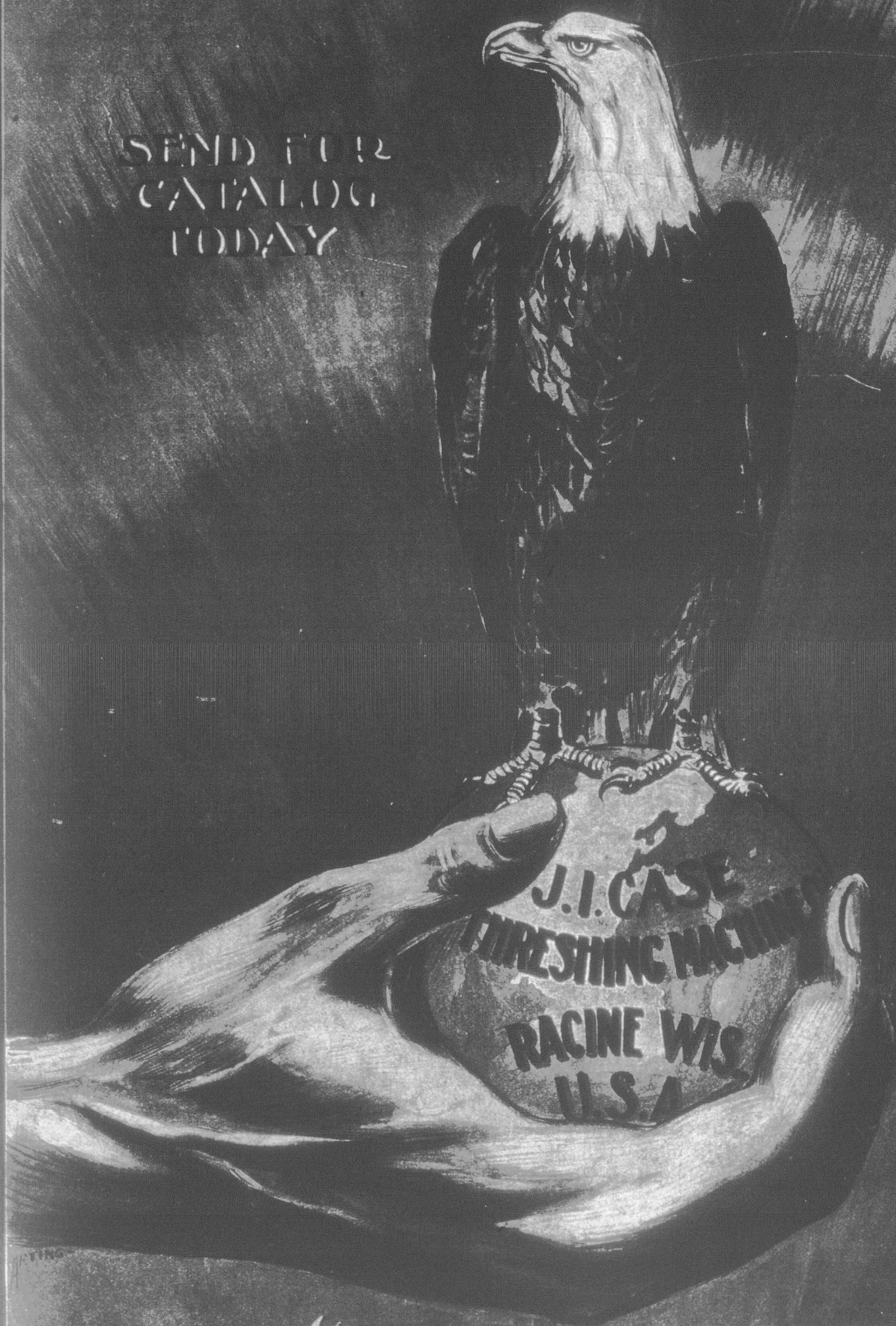
When visiting the Winnipeg Exhibition don't fail to visit the Show Rooms of

# MASSEY-HARRIS COMPANY, LTD.

CORNER MARKET SQUARE AND BROADWAY STREET

# "A BIRD IN THE HAND -

SEND FOR  
CATALOG  
TODAY



# IS A "CASE OUTFIT"

TORONTO, WINNIPEG, REGINA, CALGARY.

*Grey*

Let us meet you face to face

at the Big Exhibitions—Winnipeg,  
Brandon and Portage La Prairie and talk it all over together

# RAILROAD AND FARM FENCES

Built of the  
Strongest  
and  
Highest  
Grade of  
High  
Carbon  
Coiled  
Spring  
Steel Wire  
Woven  
Complete  
on Posts



Built of the  
Strongest  
and  
Highest  
Grade of  
High  
Carbon  
Coiled  
Spring  
Steel Wire  
Woven  
Complete  
on Posts

Ours is the fence for those who use nothing but the best. But don't take our word for it. Here is the testimony of one who knows from experience the inestimable value of LONDON FENCE.

LONDON FENCE LIMITED,  
Portage La Prairie, Man.

Dear Sirs: I must say I am well pleased with the London Fence. During the winter of 1903 and 1904 I had a barb wire fence stretched in a line with the "LONDON." The snow drifted over both fences, breaking the whole three strands of barb wire, but when the snow melted away the "LONDON" came back to its place uninjured. My team also ran away and jumped the London Fence, the centre clevis of the double-trees caught on the fence, threw both horses, and held them until I came up. This fence is still giving perfect satisfaction.

This, I believe, is sufficient evidence of the excellent quality of material used in LONDON FENCE.

(Signed) J. C. VANCE, Crandell, Man.

Field Woven and Buckeye Lock Fence	Ornamental Iron and Wire Fencing and Gates	Coiled Spring Steel and Plain Wire	Barb Wire Fence Staples	Steel Farm Gates for all purposes
--	---	--	----------------------------	---

Our Catalog is yours for the Asking.

**LONDON FENCE Limited, Portage La Prairie, Man.**

# Brandon Machine Works Company, Limited

## BRANDON, MAN.

**BRANDON  
GASOLINE  
ENGINES**

**Well  
Boring  
Machines**

**Grain  
Grinders**

**Acme  
Grain  
Pickler**

**Pile  
Drivers**

**Steam  
Boilers**

**Heating  
Boilers**

**QUALITY  
and  
PRICE  
Both Right**

# Our Machinery Speaks for Itself

LET US show the different lines to you at our splendid factory during the big Brandon Exhibition.

Nothing that honest materials and skilled workmanship can accomplish has been overlooked in their making.

If you are particular about having the maximum quality coupled with a minimum price, and wish to utilize goods that are of western manufacture and for western use, then look into the outstanding merits of our machinery lines.

We have attained our present enviable position by constantly keeping both quality and price right.

**BRANDON  
PORTABLE  
ENGINES**

**Sawing  
Machines**

**Perfection  
Fanning  
Mills**

**Farm  
Trucks**

**Steam  
Pumps**

**Power  
Hammers**

**Chemical  
Fire  
Engines**

**QUALITY  
and  
PRICE  
Both Right**

# Brandon Machine Works Co.

BRANDON, MAN.

Limited

## This Handsome Steel Range



No. 9-20 R complete with high shelf and warming closet: 15 gal. reservoir, exactly as illustrated, backed by our binding guarantee with 30 days free trial for only \$34.65.

Anybody can say they have the best range in the world but we furnish the Evidence and leave the verdict to you.

This range has 6 nine-inch lids, 20 inch oven, 15 gal. reservoir, large warming closet and high shelf, top cooking surface 30x40 inches. Weight 500 lbs. Guaranteed to reach you in perfect order and do its work equal to or better than any Range you can buy elsewhere at any price.

We ask you to use the range in your own home for 30 days; put it to every possible test; compare it with other

**ONLY \$34.65**

ranges used by your friends and neighbors, and if you do not conclude size for size that it is a more economical fuel consuming range and you have saved from \$10 to \$40 in cost to you return the range to us at our expense and we will refund your money with the freight you paid.

Don't buy a range from anyone at any price until you get our catalogue. We are manufacturers and sell direct to consumer at one small margin of profit. Write for further particulars.

# \$18

That's our price  
for the . . .

## Economy

Five Drawer  
Drop Head .



## SEWING MACHINE

GUARANTEED FOR TEN YEARS

**Three Months Free Trial**

**THE HEAD** is designed on beautiful symmetrical lines, high arm and full length, made of the best material, and all wearing parts CASE HARDENED

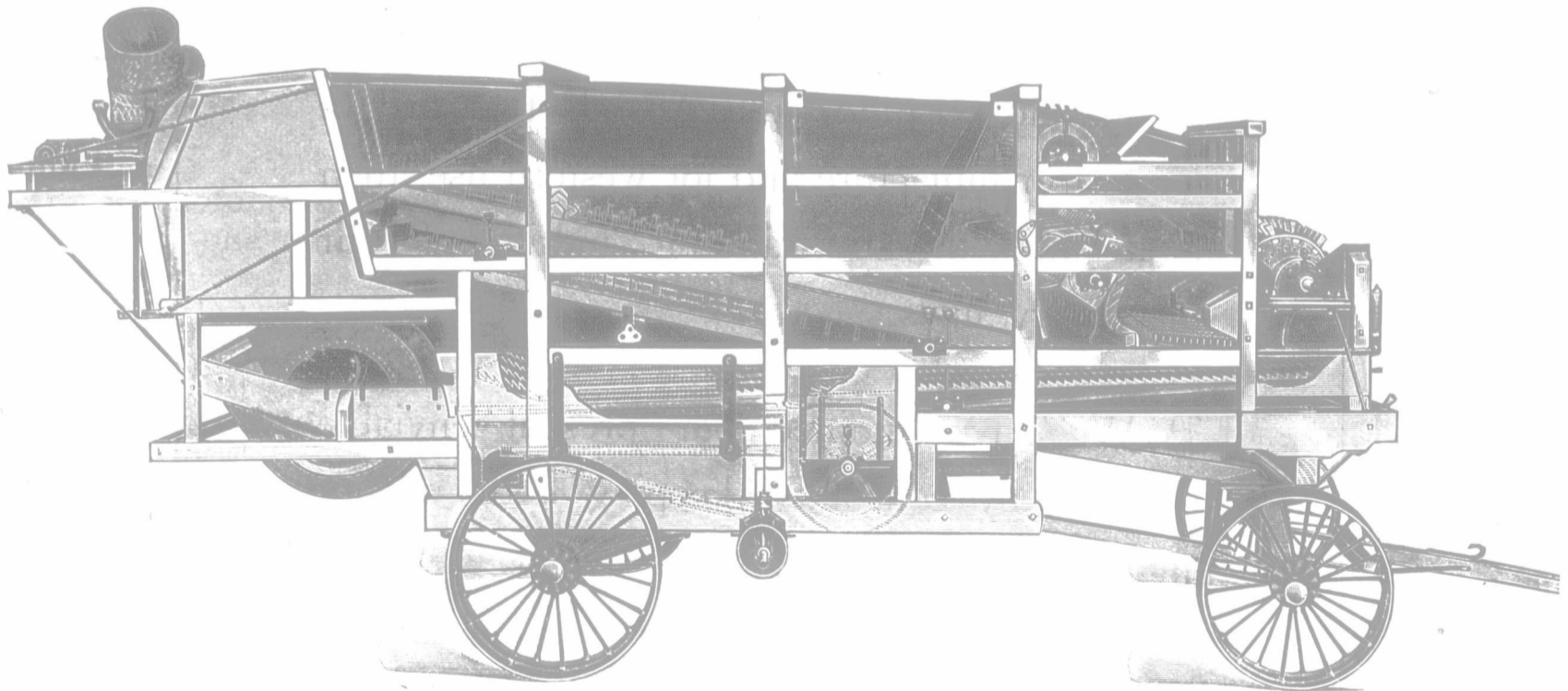
Supplied with a complete set of the Latest Improved Steel Attachments. A full set of accessories and a comprehensive Instruction Book. Cabinet is of selected oak with high gloss polish, exactly as illustrated.

**OUR OFFER!** Mail us your name and address saying you would like to have our New Sewing Machine Offer, and you will receive by return mail FREE, the most LIBERAL OFFER ever heard of. Don't buy a Sewing Machine of any kind on any kind of terms until after you receive our offer. Write to-day for further particulars.

We cordially invite you to visit our Exhibit at the Winnipeg and Brandon Fairs, and receive a handsome free souvenir.

**WINGOLD STOVE CO. - 311 Notre Dame, WINNIPEG**

## QUALITY is remembered long after price is forgotten



**Buy "Waterloo" Threshing Machinery and Secure the Best Quality**

and you will never regret the price. Engines, plain and Traction, 14 to 25 h.p., powerful, durable, efficient. Waterloo Separators with newest and latest improved Separating device, will do excellent work. Made in sizes 28 x 48 to 40 x 62 fitted with the famous "Waterloo" and "Landis" Gearless Wind Stackers. See our Exhibit at all the leading Fairs.

Write for Catalogue giving full information.

**Waterloo Manufacturing Co. Ltd.**

Head Office & Factory: **WATERLOO, Ontario, Canada** Branches at **WINNIPEG, Man. and REGINA, Sask.**



# MONUMENTS



When you visit the Big Brandon Exhibition we would be pleased to have you call

For Prices and Best Work write

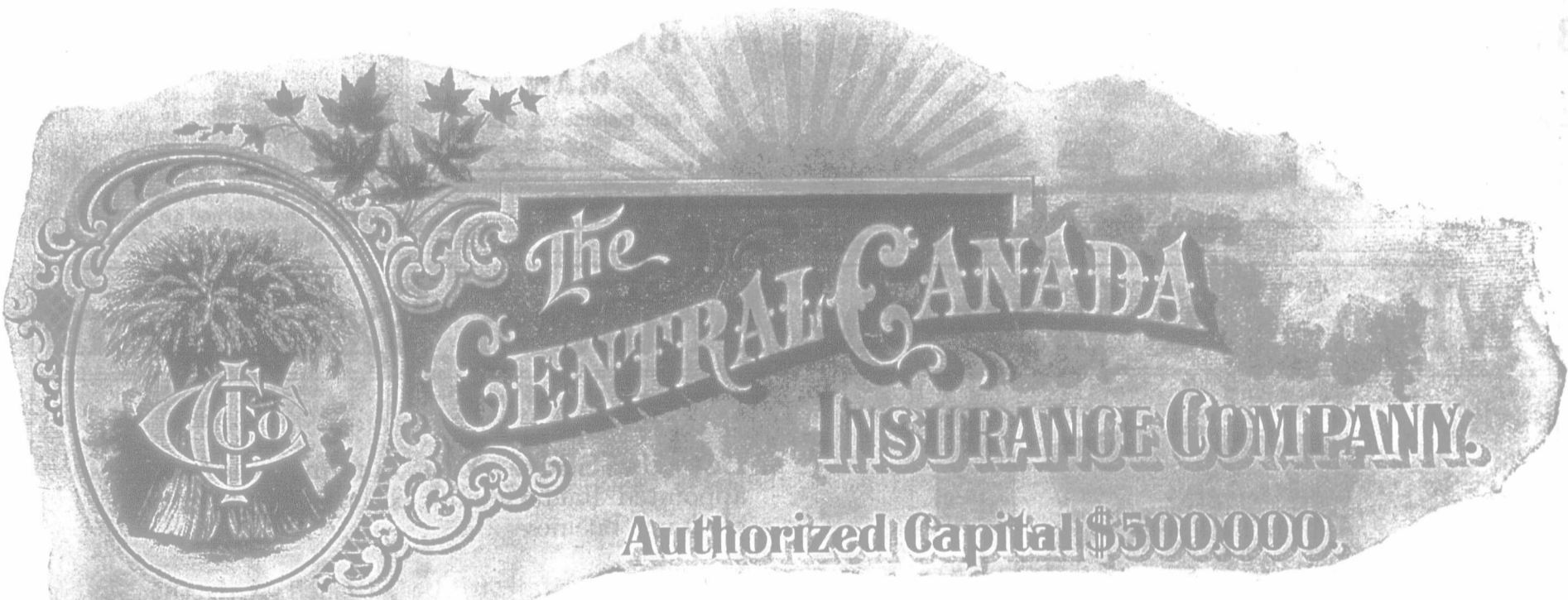
**Somerville Steam Marble Co.,** 15th & <sup>Between</sup> 16th Sts., **BRANDON, Man.**

## A Western Company doing a Strictly Western Business

Incorporated by Special Act of the Manitoba Legislature

Licensed under "The Manitoba Insurance Act"

Registered in the Provinces of Saskatchewan and Alberta



HEAD OFFICE  
BRANDON, MANITOBA

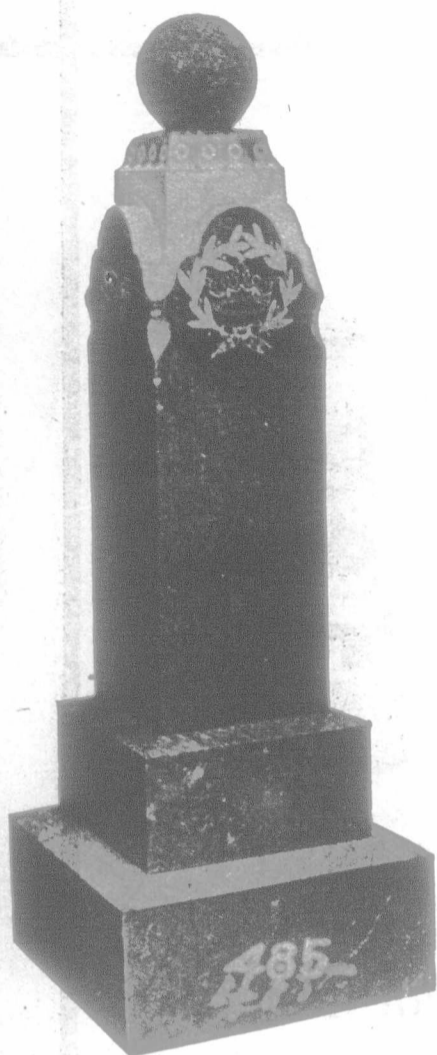
- ☐ Insurance against loss by Fire, Lightning or Hailstorms
- ☐ Pure-bred Live Stock insured against loss by Accident or Disease
- ☐ Local Agents will furnish information concerning Rates, etc.
- ☐ Correspondence invited on any or all questions relative to our different lines of Insurance

**FRANK O. FOWLER**  
PRESIDENT

**ANGUS McDONALD**  
VICE-PRESIDENT

**JOS. CORNELL**  
MANAGER

Kindly Mention the Farmer's Advocate When Answering Advertisements

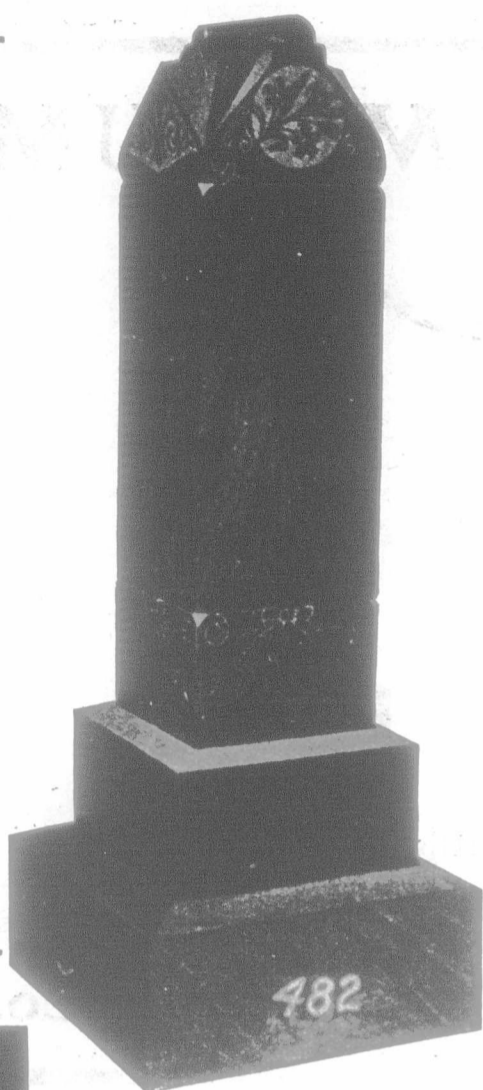


# GRANITE AND MARBLE

We are at all times prepared to offer the buying public the best in the market in the line of

**Monuments  
Headstones  
Markers  
Railings, Posts**

Our lines are the latest, and we can also prepare special designs presented by our customers. We make a specialty of doing work so that our patrons can recommend us to others. We quote the lowest prices consistent with the finest qualities. We erect work any where. If you are in need of work in our line write for free Catalogue.



**Call on us  
when you  
visit the  
Brandon  
Exhibition**

**Drysdale  
& Co.  
BRANDON  
MAN.  
Cor. Princess & 6th Sts.  
Box 222**

### THE SKIM MILK CALF NOT TO BE DESPISED.

The greatest number of mistakes in calf feeding are made in the period of changing from whole milk to skim milk. Many try to make up the difference in the quality of the milk by adding quantity. The quickest way to upset a calf is to overfeed with skim milk and try to get it to drink enough to support several calves. Another way to upset the calf is to feed the milk irregularly and to feed it sweet one day and sour the next. The skim milk should be sweet and clean the buckets or vessels in which the milk is fed should be likewise sweet and clean. Five pounds of skim milk fed three times a day is plenty if the calf is eating a little grain with it. Some feeders feed only twice a day after the calf is two or three weeks old, in which case fifteen to eighteen pounds of skim milk divided into two feeds is plenty. This will be even too much for some calves. As the calf grows older the amount of milk can be judiciously increased. In feeding several calves by hand, stanchions are almost a necessity. The calves will soon learn to use them and when kept in them for a time after being fed their milk, they will not get in the habit of sucking each other's ears. They should be fed their grain as soon as they have had their milk. In regard to grain used, there is nothing better than ground oats, bran and a little crushed flaxseed, in the proportion of 8, 8 and 1, or barley in place of flaxseed but in double or treble the quantity. Whole oats are preferred by some, because it is said oats help keep their digestive apparatus in good shape. As soon as they eat any considerable amount use the mixture suggested. Many feeders feed the calves the same grain feed as the milk cows are fed. There is not much danger of overfeeding with flesh and fat formers a calf of the beef breeds. Dairy calves should not be allowed to lay on fat, according to dairy authorities, as they believe this leads to a disposition for the future dairy cow to put the grain on her back instead of in the pail.

It must be remembered that in raising calves definite rules cannot be laid down. Feed with an eye to the disposition of the calf and change feed as the calf seems to need. First class calves can be raised on skim milk. They may not look as slick as sucking calves when turned to grass but by fall little difference can be noted.

## When You Visit the Brandon Exhibition



Let Us Show You our magnificently appointed Factory, and explain our system of doing business . . . . .

YOU cannot fail to be satisfied with the results achieved by regularly sending us your cream, butter and eggs . . . . .

IF interested write for full particulars, addressing Department A . . . . .

### The Brandon Creamery and Supply Company, Limited

WHOLESALE AND RETAIL DEALERS IN CREAMERY AND DAIRY BUTTER, EGGS AND CHEESE  
L. A. Race, Manager, BRANDON, Man.

**WE DO JOB PRINTING—Right on Time, Right on Quality, Right on Price.**

The Farmer's Advocate of Winnipeg, Limited  
14 and 16 Princess Street.

## A Winning Pair

### A Furnace Without a Peer

Made of Steel Throughout

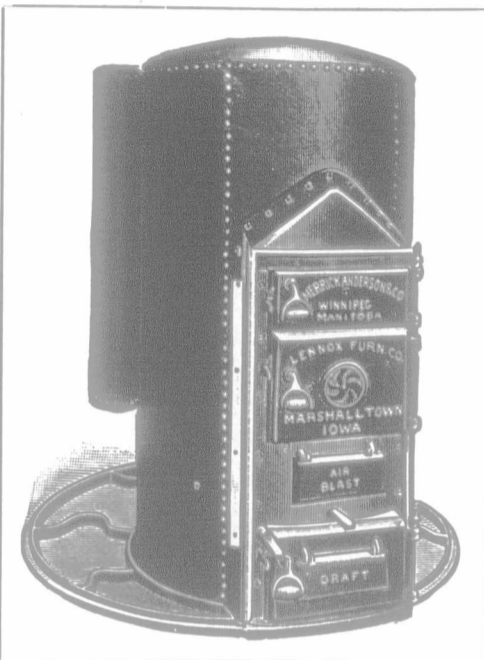
Manufactured by the pioneer builders of Steel Furnaces.

It is a well constructed Furnace combining simplicity with ease of management.

Hot Air Heating is most healthful, economical in fuel and cheapest to instal. All these points are most important to consider.

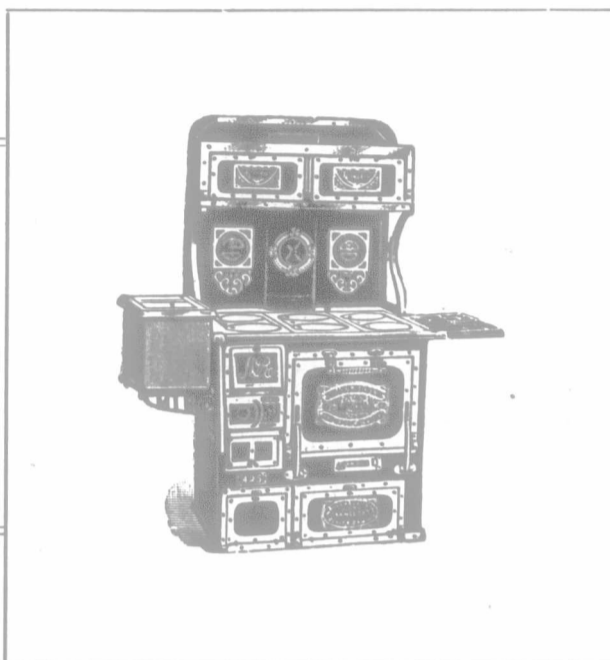
#### A Torrid Zone

saves fuel and never leaks gas or smoke.



### A Range Unequaled

Of Malleable Iron and Steel Construction.



#### A Veritable Monarch in Ranges.

Its construction — of heavy steel plate firmly rivetted to malleable iron frame renders it unbreakable. It cannot warp or open in seams after years of heavy firing. The Patent Duplex Draft with air-tight doors gives perfect fire control and ensures Fuel Economy.

The Polished Steel Body and ground top which require no blacking save countless hours of dirty work.

Both these lines will be on Exhibit at the Winnipeg Fair next month, where our Mr. Schwie will be glad to have you call and satisfy yourself as to our statements.

**MERRICK ANDERSON & CO., 117 Bannatyne Street, Winnipeg**

## Builders—Look Here!

In a cold country it is essential to health and comfort to have your houses, barns, etc. well built.

## Eddy's Sheathing Paper

will help materially in this. It

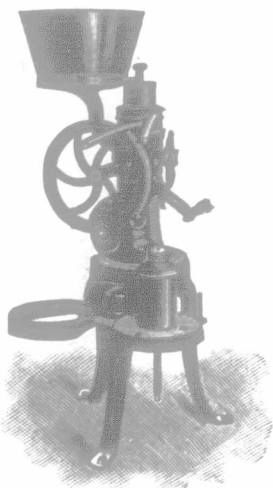
## Will Keep Out Cold

and dampness and retain the heat.

For sale by all first-class dealers

**THE E. B. EDDY CO. Limited** - **Hull, Quebec**

TEES & PERSSE Limited, Agents, Winnipeg



The  
**NATIONAL**  
CREAM SEPARATORS

The simplicity and ease of operation of the NATIONAL has made it a general favorite all over Canada.

The NATIONAL is made in Canada by Canadian Workmen in the largest and most up-to-date factories in Canada.

Look Us Up At

**The Industrial Exhibition**

WINNIPEG

July 23rd—28th, 1906

MANUFACTURERS' BUILDING

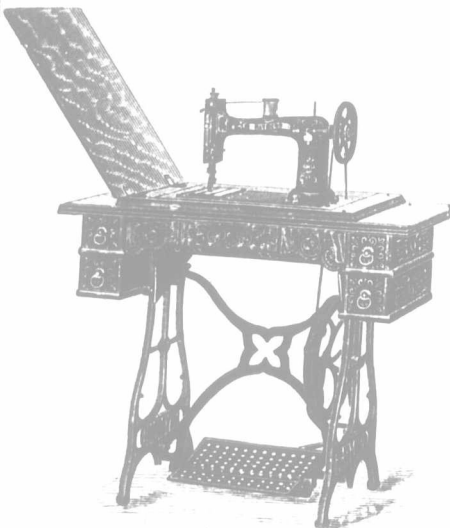
For 45 years the RAYMOND has been a leader in the sewing machine trade.

The 1906 Improved Ball-Bearing Machines are ten years ahead of competitors. The quietest, easiest and smoothest-running family sewing machine made. Once used you will have no other.

RAYMOND MFG. CO. Ltd.

344, Portage Avenue  
WINNIPEG

The  
**RAYMOND**  
SEWING MACHINES



**GOLD AND SILVER MARKING ACT.**

A bill has been introduced into the House at Ottawa by Senator R. W. Scott which is to be known as the Gold and Silver Marking Act.

An article composed in whole or in parts of gold or silver, or any alloy of these metals, with the exception of gold-filled jewellery, is not to bear any stamp, engraving or other mark, otherwise than (a) such design or mark as shall have been registered under the trade mark and design act; (b) such mark or letter as shall indicate the period of manufacture; (c) such mark or marks as shall describe the true and correct quality of the gold or silver or alloy of either of the metals used in the construction of the article.

With respect to articles of gold, the manufacture or sale is prohibited if marked with any number of karats less than ten, or if the box, package, cover or wrapper, or any tag or label bears such words as "gold," "solid gold," "pure gold" or "U. S. assay." In articles made of gold the quality marks are to state the fineness of the gold in karat, thus "10k," "14k," "18k." Gold marked as "18k" must contain eighteen parts of pure gold and six parts of alloy, and all other quality marks are to be in the same proportion, with "24k" as the standard of pure gold.

With respect to silver it is made an indictable offence to manufacture or sell articles marked "sterling" or "sterling silver" unless nine hundred and twenty-five one thousandths of the component parts of the metal of which the articles are manufactured are pure silver. The same provision applies to mountings.

The allowances for solder are as follows:—

Where solder is used the karat fineness of the gold or alloy of gold used

shall not be less than one-half of a karat of the quality mark which is stamped upon the article or where solder is not used, the karat fineness of the gold or alloy of gold used shall not be less than one-quarter of a karat of the quality mark which is stamped upon the article; or, where solder is used, the fineness of the silver or alloy of silver used shall not be less than twenty-five one thousandths of the quality mark which is stamped upon the article; or where solder is not used, the fineness of the silver or alloy of silver shall not be less than ten one thousandths of the quality mark which is stamped upon the article.

Section nine provides:—"It shall be an indictable offence to manufacture, sell, offer for sale or otherwise to dispose of any articles commercially known as gold-filled, rolled plate, gold or silver fronted, double stock, or other soldered combination of the alloys of gold or silver with other base metals, plated or electro-plated, gilt or fire-gilt jewellery, which designation is hereby declared to include watch cases, lockets, chains and other similar articles, or other articles which are stamped, engraved or otherwise marked with any statement, mark, sign or device upon cards, boxes, tags or wrappers or other accessories accompanying or attached thereto (other than a trade mark) which will indicate other than a true and correct statement of the fineness and also the actual weight of the gold or silver or alloy of either of said metals contained in the articles so stamped or marked, or the decimal proportion of the gold or silver or alloy of said metals to the gross weight of the articles so stamped or marked at the time they are sold or delivered by the manufacturer.

The use of guarantees of the wearing properties of gold-filled, rolled plate, gold or silver fronted, plated or electro-

plated and other such articles is prohibited, and any person who sells such articles so guaranteed become guilty of an indictable offence.

In regard to the method of marking the fineness of the gold or silver or alloy of either metal contained in these articles the additional provision is to be added that, as to the actual or proportionate weight declared by the stamp or other mark, such articles shall not be allowed a deviation of more than ten per cent. of the amount of gold or silver or alloy of either metal declared by stamp or other mark to be contained in such article.

It is made an indictable offence to mark electro-plated ware otherwise than will truly and correctly indicate the quality of the goods or the quality and grade of the plating.

The provisions of the act will not apply to gold or silver articles bearing the Government mark of quality of any country, provided the standards are not less than the act calls for.

Any manufacture, dealer or other person who sells, imports or attempts to import, or who has in his possession without lawful excuse (the proof of which shall be upon him), who imports after the act comes into force any gold, silver or sterling silver ware not according to the standards described, is liable for every such ware to a penalty not exceeding \$100.

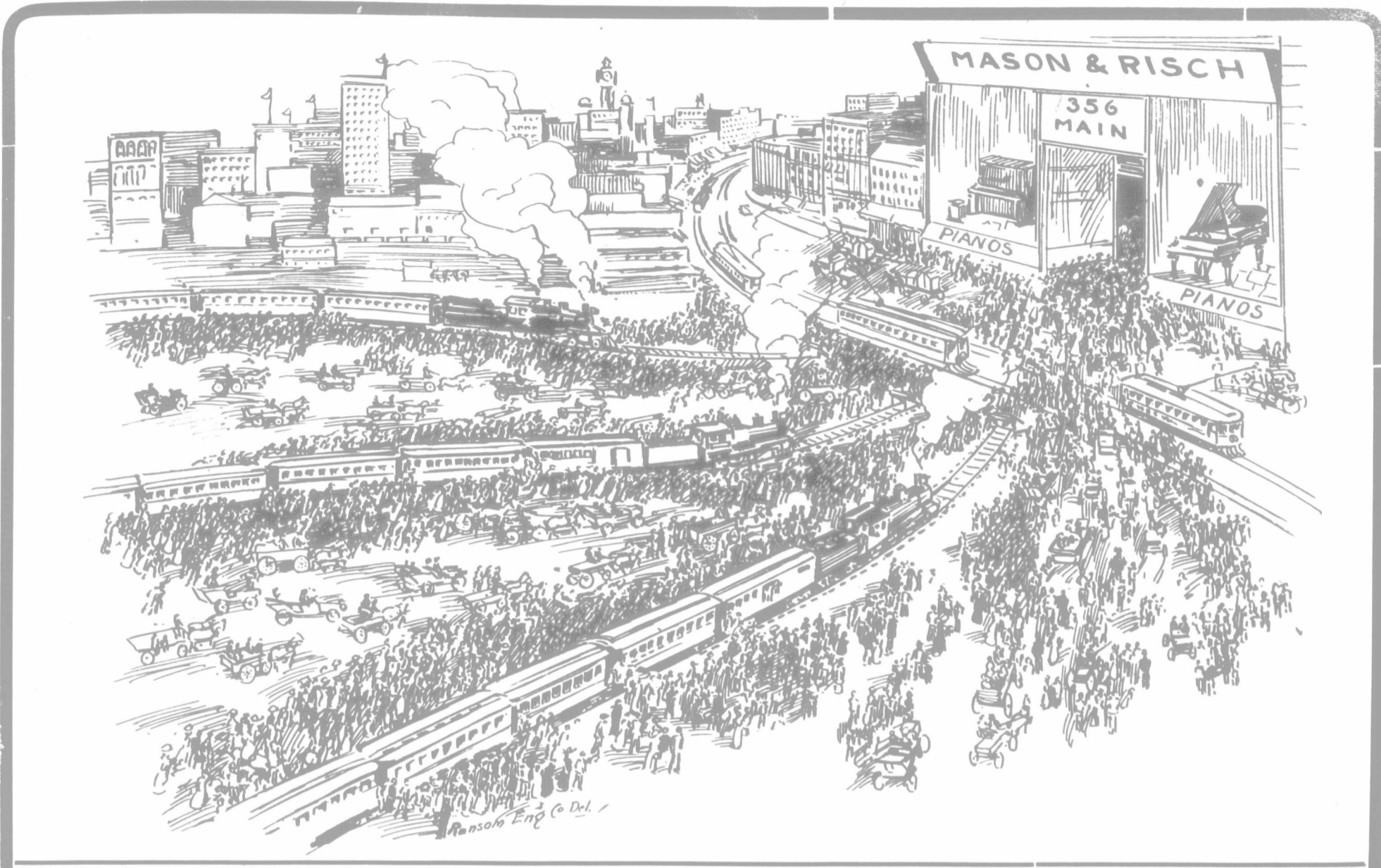
**MARKING MUST BE ACCURATE.**

The exposing or offering for sale of any article made after the act becomes operative not marked as the act provides for or marked otherwise is punishable by a fine not exceeding \$100, in respect of each article, and upon conviction the article is to be rendered unfit for sale otherwise than as bullion.

**This was the Best Display at the  
Brandon Exhibition Last Year**



We will have a better one this year  
**H. CATER, Brandon, Man.**



## Follow the Crowds

to the

# MASON & RISCH Piano Company's Parlors

356 MAIN STREET, WINNIPEG

Where there is on exhibition a complete assortment of the very latest styles of artistic

==== PIANOS, PIANOLA PIANOS @ PIANOLAS ====

direct from the factory, any of which can be purchased on **VERY EASY TERMS OF PAYMENT**

**EXCHANGE DEPARTMENT**—In the Exchange Department will be found some **PIANOS** and **ORGANS** by famous makers which have been taken in exchange on other instruments, all of which are exceptional bargains at the prices offered, also several **PIANOLAS** that have been returned from rental.

**PIANOS** from \$50 up. **ORGANS** from \$20 up. **PIANOLAS** from \$175 up.

**DO NOT FAIL** to visit our exhibit at the Winnipeg Exhibition nor to **FOLLOW THE CROWDS** to the **MASON & RISCH Piano Company's Parlors, 356 MAIN STREET, WINNIPEG**

### A SUBSTITUTE BETTER THAN THE ARTICLE DISPLACED.

The recent rapid advances in the price of lumber should set farmers to thinking as to the best substitutes for the lumber heretofore used on the farm. They must not make the mistake of supposing that the advance in lumber is temporary, or that it is artificial. It is natural, logical and inevitable.

Here are the directions for making concrete tanks: Dig a hole for the foundation about 18 inches deep and whatever size you want to make the tank, outside measurement. Put a layer of rock about the size of one's fist in bottom of foundation, and pound down hard. Put in another layer of rock and pound down, continuing thus until within four inches of the surface of the ground, then use four inches of concrete. The concrete is made of good cement and gravel mixed—one part of cement to five parts of good clean gravel. If the gravel is coarse, make a filler by adding sand to cement.

Make a box, inside measurement same as outside measurement of tank. Use three-sided posts at each inside corner to prevent sharp corners on tank when finished; for sides and ends, use one 2 x 4 around bottom, and two 2 x 12's above, making tank 2 feet 4 inches high. Then make another frame or box, flaring, being 12 or 16 inches narrower and shorter at top than the first box, and 28 inches narrower and shorter at the bottom than the first box. Place the two boxes squarely on the foundation, one inside the other, the top edges of the two frames or boxes being the same distance apart all the way around. Then fill in between the two boxes with concrete in layers, working it gently with trowel (do not pound it in), carrying the layer around and around the tank, to prevent building one side faster than another and pushing it out of line. When space is filled to top of frames, smooth top off nicely with trowel. Make a shade of canvas or something to keep off the sun, so con-

crete will not set too fast, making outside hard and inside soft.

After it has stood about 48 hours, draw nails and take frames away, then give tank a "brush coat" to cover any rough places. You then have a tank that will last a lifetime, if properly made. The walls will be six or eight inches thick at top, as desired, and fourteen inches thick at the bottom of the wall. The object of this shape of wall is to resist the side pressure in freezing. The thick, flaring walls have a tendency to make the ice bulge upward instead of out. One of our tanks was over two-thirds full of water when the mercury dropped to eight degrees below zero. The water froze to the bottom, but this did not affect the tank in the least. No stock should be allowed around the tank until it has been built a week. Never let a tank wagon, when threshing, back up to a concrete or any other kind of tank. Make them drive alongside. If the tank is in a barn-lot where wagons drive up and punch it with the tongue,

a two-inch plank should be attached to the tank to check the blow, as the concrete gets so hard it is liable to chip in pieces if struck by a hard instrument.

All supply, overflow and drain pipes should be put in place, and concrete filled in around them as the tank is being built. It is well, in putting up your first tank, to have someone that understands concrete work to put it in, as it is very important to have the material in the right condition, and when the job is begun it should be finished before stopping. When concrete sets, it is impossible to make new concrete stick to it. The corners of the inside box should be rounded to avoid sharp angles in inside corners of the tank. The inside box should be made with dressed side boards turned out, and outside box with the dressed side turned in. Stays or braces should be nailed on outside of outside box and inside of inside box to prevent boards from springing and making creases in sides of tank.

Established  
in 1864

# Bell

## PIANOS AND ORGANS

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WM. PEARSON Co. Ltd., 308 Northern Bank Building, Winnipeg, Canada

# Farmer's Advocate and Home Journal

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July 18, 1906.

WINNIPEG, MANITOBA.

Vol. XLI. No. 721.

## A Tribute to the Pioneer



**T**HE interdependence of man and the lower forms of life has an economic significance appreciated by few.



Human activity depends largely upon the products of the field and the byre, without which the engines of life would be stilled. To-day the civilized world looks to the husbandman of Western Canada for wheat, that life-sustaining fuel without which the highest type of human energy cannot be produced; and from the promise of the harvest, it will not look in vain.

All hail then to those men and women who till the plain and cause the barren prairie to yield the fruits of harvest for the sustenance of their fellows, rendering possible great works in the realms of Science and Art; yet let us not forget that greater work done by the noble band of pioneers now gone to their reward, who yet during days of storm and stress, doubt and despair, sunshine and rain struggled onward undismayed, to make their loved country, not only the granary of the Empire but a home place which should be the abode of men and women, who when judged from the standpoints of character, mind and physique, should be the finest that the world had ever seen.

The harvest of material things draws near, and in that hour of fulness and plenty there is a voice which bids us remember that life is not all lands, food and gear, and charges us not to forget those to whom is so largely due our present meed of prosperity—the pioneers.

## EDITORIAL

### The Province of the Exhibition.

Christmas, the first of July, Labor day and Thanksgiving day may be the nominal holidays of the year but the real actual, all important recreation period is the visit to the exhibition or fair. No other event is so fraught with novelty, possibility of innocent adventure, mental stimulus and educative potentiality as this annual outing. Around it are gathered a variety of attractions and interests so that it appeals to all classes in the versatility of its entertainment. It is the milestone of progress and the trysting place of separated acquaintances. There humanity laughs, wonders, is satiated with variety, grows tired and is thankful when it is all over, only to return the next year perennially eager for a recurrence of old experiences or to meet with new.

The local fair reflects the skill and industry of the community. It is the kindergarten school from which graduate the exhibitors who in future attract the attention of Province, Dominion, and foreign countries. It teaches the lessons of defeat and inculcates the spirit of toleration, of magnanimity and true gentlemanly sport, or it leaves submerged in the darkness of his own suspicions the exhibitor who nurses imagined or actual wrongs and discriminations. It fits one for larger things or forever determines his unfitness. The exhibitor may profit or lose by his experiences but the fair will continue, to be literally a spout down which exhibitors are poured to appear again upon larger fields and in keener competitions.

The scope of the exhibition is broader, within its confines are gathered the best from numerous communities, the culminations of mechanical genius, the efforts of the aesthetic imagination, and, most wonderful of all, the heterogeneous conglomeration of mankind itself. The object of the large exhibition is first educative. Its purpose is to display contrivances for the more economical performances of work, to fix and demonstrate approved types of stock and to show different members of the race what its fellows are doing and thinking about. From it the visitor is expected to go away with enlarged conceptions, broader perceptions, higher ideals and increased mental facilities for carrying on his trade or profession.

Whether or not the exhibition succeeds in its best aims must naturally depend largely upon the attitude of those who visit it. Exhibition boards know full well that while a large proportion of its patrons appreciate the economic advantages of the displays, there is at the same time a well defined demand for light, frivolous, and even questionable entertainment and this constitutes one of the greatest problems of exhibition management, the first axiom of fair management being "the greater number that can be induced to attend, the greater the good that will be done." It therefore devolves upon the general public to determine the character of our exhibition. The attention and patronage any particular feature receives determines its appearance or non-appearance the following year. Give your undivided attention to the essential and innocent things in life and by your influence and example help to destroy the non-essential and injurious attractions.

### The North Atlantic Company and Immigration.

It is not necessary or advisable to take a political view of the Dominion government's relations with the N. A. T. company, but as Canadians we cannot help but state that whatever has been done in the past in getting settlers by secretive methods, such methods should be abandoned in the future. It seems such methods were necessary, altho the High Commissioner did not endorse the policy of silence necessary to successful stealing of men, even so, Canada has now reached such a stage of progress, in the galaxy of nations as to render it no longer necessary to continue methods which are undignified and dishonest.

It is well known that Russian statesmanship, so called, was a policy of subterfuge and evasion, and we do not believe that Canada's statesmen should descend to that level by pursuing a policy which has a strong resemblance to that of the thief in the night. As a country we are far better without those immigrants if to get them we have to set as an example to our children, a violation of the moral code. We cannot expect to build up satisfactory trade relations with any country when our behavior as a country is so open to question!

### Conservation of the Health of Animals.

A careful perusal of the evidence of the Veterinary Director-General given before the agricultural committee, portions of which we have reproduced elsewhere, is of such a character as to merit the utmost confidence in the working out of many difficult problems by that branch of the public service. Not only is every possible precaution taken to safeguard the public health, but there is mixed in with the professional knowledge, a great deal of common sense and a sympathetic appreciation of the hardships ensuing from the ownership of a glandered animal.

### LOOK US UP!

WHEN in town at the Exhibition see the Farmer's Advocate big block, new plant and Monotypes. We shall have a tent on the grounds during fair week and new subscribers can open an account there and transact such other business with the Farmer's Advocate as they may desire.

Canada is to be congratulated that with a minimum of red tape and expense she is getting a maximum protection to the public against communicable diseases of animals. At times, unfortunately, some people ignorant of the causes or seriousness of the disease of glanders talk for political or some other reason, or rather lack of reason, and render it more difficult for the officials to do their work. It should at all times be remembered that glanders is a disease communicable to man, incurable, and therefore that it is dangerous, yes criminal, for anybody for the sake of a little notoriety to attempt to impede the work of stamping out glanders by this branch of public service. We have no hesitation in saying, and we claim to know whereof we write, that in no other country in the world to-day is there such a thorough-going conservation of the health of animals and therefore of the health of the people, embargoists to the contrary, as in Canada. The minister is to be congratulated, as is the country on the combination of professional efficiency and sound common sense which dictates the administration of the health of animals branch and the formulation of necessary and appropriate regulations, all at a minimum cost to the Canadian taxpayer. This is a branch of the public service in which good results could be expected to follow the payment of better salaries; such would be an inducement to bright young men, possessing good educations, to enter this branch of the public service, a branch which must continue to develop as the country does, and in which the best talent obtainable is none too good.

Reports from the railroad building camps are to the effect that Chicago canned meats are under the ban. Wholesale men report a total cessation of the demand for U. S. canned meats, and state that some railroad contractors report that many of their foreign employees refuse to be fed on tinned meats.

### Objects of Cultivation.

The great principle in cultivation is to prevent the formation of a crust. This is true, whether we are preparing for spring seeding, cultivating a hoe crop, or working a summer fallow. Aim to stir the surface promptly after every rain that packs the ground at all, and in a dry time after pretty nearly every rain, for then soil moisture is doubly or trebly precious. This has two primary effects. It conserves moisture and permits free circulation of air through the soil. In a wet season it is worth cultivating more or less for the latter purpose alone. It also serves to keep down weeds, but he who cultivates as much as is advisable to serve the aforementioned two purposes will seldom require to do much extra work on account of weeds. It is because so many of us neglect the important early cultivation which would kill the sprouting seeds, that so many rank weeds are seen in our corn fields, and so much care and laborious effort is necessary to root them out.

Why is cultivation necessary to conserve moisture and permit soil aeration? In primeval conditions nature covers the soil with a layer of coarse vegetable material; under this is humus (vegetable and animal matter, in varying stages of decomposition). This humus is by far the best water-holding constituent in soil composition. King found the following comparison of water-holding capacity in three kinds of soil, when they held as much moisture as they could after several days' drainage following heavy rains:

Sandy loam.....	3 inches.
Clay loam.....	3-5 "
Humus soil.....	5.0 "

The coarse layer of undecayed vegetation above acts as a mulch, or as a board partly sunk into the ground, protecting the soil moisture from the evaporating influences of sun and wind above. At the same time it affords ideal channels for the admission and gradual diffusion of atmospheric oxygen. Man comes along and finds it necessary to raise a large area of crops adapted to produce the maximum amount of human food. To this end he destroys nature's vegetation, and plows up the soil, inverting the layers and bringing the more purely mineral matter to the top. At the same time the humus supply is exhausted by sale of the crops and by frequent tillage, which has the effect of unduly hastening a soil process called nitrification, by which plant food is set free. Were all this unlocked fertility utilized it would not be so bad, but owing to the land being without crop for a part of most seasons, a considerable proportion of the soluble plant food is lost by leaching and washing rain-water. Thus not only does the land lose its protecting mulch of coarse vegetable matter, but also its humus content, the natural storehouse of moisture and plant food. The result is that the soil bakes, especially if it be of clay consistency, and settles together in such a way as to retard seriously the admission of air, without which no plant food can be made available. Indeed, in the absence of air, a reverse process called denitrification, may go on by which combined nitrogen is set free as a gas and lost to the air, whence it can be recovered only through the agency of legumes, such as clover or peas, and a few minor means. Many a water-logged soil is actually losing valuable plant food in this very way.

### CULTIVATION AN ARTIFICIAL SUBSTITUTE FOR NATURE'S PROVISIONS.

Clearly, man, having upset nature's provisions, should do something to substitute them. This can be done fairly effectively with the soil mulch. In order to make the most out of the land, it would be necessary to preserve such a mulch on all our crops, and experience proves that a harrowing or hoeing of grain helps materially to increase the yield. However the labor in these cases generally exceeds the value of the increase in crop returns partly because the grain crops make their principal growth in spring and early summer, when there is still a large amount of moisture in the soil, and when, therefore, the ground does not bake so hard as later on in the season. With the class called hoed crops the case is different. In the first place, these are adapted to grow at spaces which admit of easy and fairly rapid cultivation. In the second place they are enormous yielders, when provided with sufficient food and moisture; in the third place, they make their growth rather late in the season, when soil moisture has been already reduced by evaporation, which continues throughout their season of growth. Such crops must be summer-cultivated to conserve moisture for their use, to permit free aeration, and to keep down weeds which would otherwise rob both

plant food of mystery plant food University plowshares whole scientific condition, or, rain and bacter Besides 1 plant food solutions to dredged of to season.

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plant food and moisture. We hear a good deal of mysterious talk about "cultivating to set tree plant food," and even Prof. Roberts, of Cornell University, wrote once about the effect of "hot plowshares" in the soil, but the real logic of the whole science is that cultivation promotes physical conditions of aeration and moisture, favorable, or, rather, necessary, to nature's chemical and bacteriological processes.

Besides being necessary for the elaboration of plant food, moisture is the carrier of the food solutions to the leaves of the plant, whence hundreds of tons per acre are evaporated in a single season.

It is thus apparent how severe is the draft in a dry period, and how urgent the need of restoring the soil mulch promptly after even a light rain. By settling and dampening the soil mulch a light rain may do more harm than good, although a temporary benefit is seen in the freshening of the leaves, owing to the lessening of the rate of transpiration and evaporation while the shower is in progress, and for a short time afterwards.

#### WHAT CAPILLARITY IS.

Just here, perhaps, we should repeat once more a brief explanation of the natural law or force called capillarity. Capillarity is the attraction of soil particles for the moisture of contiguous ones. It works most powerfully in moderately moist soil, where one portion is moister than another. It is less active between moist and very dry soil, and much less active through a loose than through a firm soil. Capillarity may act in any direction, but on account of the fact that land ordinarily dries out from the surface, the normal movement of capillary moisture is upwards, i. e., opposite the direction of gravity. Throughout the summer this upward flow of capillary or film moisture—for it exists in the form of films surrounding the soil particles—is continually occurring, and by it the immense amount of water that has soaked into the subsoil during the dormant season is brought near the surface, where it fulfils its various functions in the plant and soil economy. By wise conservation of this subsoil moisture a fairly good crop can be grown even in a hot summer, though not a drop of rain were to fall during the growing season. In practice, however, no one counts on this severe drouth, but a wise farmer makes provision always for the driest season he is likely to have, and aims to conserve as much moisture as possible, by maintaining a very thorough dust mulch. The dust mulch acts as a blanket, similar to the mulch of loose leaves in the forest. The looser and drier and deeper the more effectual it is. Any settling together, or any rain which packs and moistens it, impairs its usefulness seriously, making it necessary to stir the soil again. It is a fine point as to when this should be done. If the cultivator is put through as soon as the ground will work, the resulting mulch is not so dry or loose as if the work had been deferred. On the other hand, in a clay soil the land will soon dry so that when cultivated it will break up into a cloddy surface. Such is an inefficient mulch. Moreover, until the mulch is restored a very rapid loss of moisture is going on, and the sooner the cultivating is done the sooner this is arrested and soil aeration again made free. Practice points to the wisdom of starting the cultivator as soon after each rain as the land will work without puddling and keeping it going at full speed until all the hoe-crop land has been covered. In a dry time, when every ton of moisture is at a premium, a stroke with the weeder will improve the mulch that may have settled after a too prompt cultivation.

By the kind of summer tillage indicated above, good crops of roots may be grown on the stiffest clay. In general, the heavier the land the greater the necessity of, and the corresponding returns from frequent summer cultivation. "Stir the soil after every rain" should be the motto, and while in a showery spell of weather this will be impracticable, the motto is still a good one, for the cultivators should be kept going at every opportunity, and, as a rule, any work done will be amply repaid in the increase of crop.

#### New Terminal Elevator Company.

The G. T. P. Terminal Elevator Company has incorporated at Ottawa, to build elevators at Fort William and Tassin on Georgian Bay. The capital stock is five millions in shares of one hundred dollars each. Montreal will be the head quarters, the incorporators are Chas. M. Hays, president G. T. P. Ry.; Wm. Wainwright, A. P. Stewart, Wm. H. Biggar, K. C., and Nicholas Bawlf, Winnipeg. The elevators are to have a capacity of 2½ million bushels each. They will be built of cement and steel and will be fireproof, the tank pattern being used.



#### Producing the Modern Steer.

In considering the finished modern steer the requirements of the butcher are the first consideration, and it was because the steer, Challenger, met these requirements in the greatest degree that he was made the grand champion at Chicago. This is very clearly brought out by the remark of the Scotch judge, Col. W. S. Ferguson, who stated, when asked why he selected the Nebraska steer as grand champion, that "his carcass will cut up with the least waste on the block." In these words he brought forward the leading characteristics of Challenger, and at the same time made prominent the chief requirements from the butcher's standpoint. Challenger was a marvelous steer in the smoothness and thickness of the covering over the back, rib, loin and hindquarters where the high price cuts are found. As has been said of him, "Such a back has rarely been carried into a show ring, so level and beautifully turned is it. He is well fleshed down his ribs, but his flanks and bottom lines are light. His quarters are full. As a finished bullock he can take a deal of beating, as a butcher's type, with almost total freedom from waste, with the weight on the back and light offal below, it may be doubted if our fat shows have ever given up his equal." It only needs a glance at the mounted representative as he stands before you to make these facts clear. In addition to this smoothness and thickness of flesh, he possesses extreme qualities as shown in a mellow and moderately thin hide and bone. The truth of the assertion of the judge was afterwards borne out by the fact that Challenger dressed 1,135 pounds of meat, or 65 per cent of his live weight. When shown in the ring by the University of Nebraska he weighed about 1,750 pounds. These facts and what you see before you bear out the statement that as a butcher's beef Challenger was supreme and on this account I think it advisable for everyone who wishes to excel in the production of high class steers to carry a clear impression of his type in their minds.

#### THE FEEDER'S POINT OF VIEW.

It would be well to consider how far this type of steer represented in Challenger is satisfactory from the feeder's standpoint. At the present time our beef cattle that are going to the market are chiefly represented by smooth early maturing yearlings, weighing twelve or thirteen hundred pounds, and the larger type of two or three-year-olds weighing fourteen hundred pounds and upwards. It seems that in all varieties of fat stock two classes are gradually taking definite shape. In the instance of sheep there is the 80-pound lamb taking preference for home consumption and the 130-pound wether for export. In the instance of swine there is the 250-pound barrow as one decided class and the 400-pound lard hog as another. The demand for these several classes depending almost altogether upon the circumstances of the market. The feeder who makes a success of producing the modern steer of lighter type secures natural fleshed calves, carries them through the winter on rough forage with a small amount of concentrates. They are kept on this until the grass is good beyond question in the spring and then grain is discontinued. When the new corn comes in they get it snapped and from that time on they are kept on the grain ration which is constantly increased until the steers are fat at 1,200 pounds or upwards. Such steers will always continue smooth and thick fleshed.

The modern type of steer as represented by Challenger can only be produced by having careful feeding from time of birth until the block is reached. It will not do to starve this steer at one time and flush him with feed at another for that means uneven fleshing with roughness and rolls. Consequently the modern steer under the hands of the feeder may be produced most satisfactorily when he comes from the ranch in thick flesh and robust condition, with the milk bloom yet on him. Such a steer going into blue grass pastures and following these into feed lots and grain fed continuously will as a yearling most likely meet the demands of the modern type in the feeders' point of view.

When Professor Smith first saw Challenger in the feed lot the excellence of his back and the thickness of his hind quarters at once impressed him, showing that this steer was naturally strong in these points before the extra feeding was started. The data I have at hand from Professor Smith shows that while Challenger was on feed at the University of Nebraska from May 6 to November 20, six and one-half months, he gained 550 pounds, or an average of two and three-fourths pounds daily. This is a high rate of gain, considering it was made to a large extent during the summer. This fact indicates that from the feeders' standpoint Challenger was also supreme, making an unusual combination of being both an exceptional steer from the butcher's and from the feeder's standpoint. Because of these reasons we may accept the form of the steer as being one which should be satisfactory to the breeder.

#### NATURAL FLESH THE BREEDER'S LEADING CONSIDERATION.

To produce a steer of this kind the breeder must carry in mind some qualities which are more essential than all others. In the selection of a bull, not only must the beef form be exemplified in all details, but we have to go a little further and be decided in demanding certain qualities. Among these the first that I would place in point of importance is that of NATURAL FLESH; by this I do not mean that a bull should be fat, for that is not at all a satisfactory condition for a breeder, but I do mean that he should carry a natural covering of firm flesh, no matter what his condition may be. Flesh is muscle or lean meat and cannot be fed on or off as rapidly as fat. It is natural flesh which gives firmness to the handling and a bull that has natural flesh is never completely out of form unless from severe illness. I have in mind two bulls that illustrate what I mean on this point; the one is a large framed bull that in the course of a 100 day feed with corn and other rapidly fattening foods may be made very smooth, but the handling on the back and over the ribs, while thick, is soft, when that bull is reduced in condition he becomes practically a bag of bones. In the next stall to this bull stands one that weighs just about as much, but his bone is somewhat lighter and is of a more compact and smoother type. His back and especially up over the loin is swathed in muscle and the hind quarter runs long and smooth. He handles very firm though the skin is mellow and loose. A 100 day feeding makes this bull smooth and plump over every part. His handling is elastic and the hide mellow and soft. When you reduce him in condition he does not lose any of his smoothness of form because muscle cannot be taken off in that way. This bull has natural flesh, while that of the other is altogether dependent on the corn crib. The calves from the bull with natural flesh come with backs that have a furrow down the center, because the muscles bulge out so on either side and over the rib and loin and down the hind quarter. The calves from the bull without natural flesh stand square and with good form, but they do not have the substance or smoothness of that of the other bull. For these reasons then I wish to emphasize the point that the breeder who desires to produce the modern steer of the highest quality must, in addition to getting good beef form in his bulls, see that they have thick and mellow natural flesh.

In addition to selecting sires with produce steers with natural flesh I have grown to be a firm believer that this natural flesh is cultivated and encouraged under conditions where grazing is a prominent part of the farming. Where young animals get an abundance of nutritious grass, enjoy healthful exercise in obtaining it, and out of doors at all seasons the conditions seem to me conducive to thickness of this natural flesh. It gives young animals a sappy, rugged and thick fleshed appearance which no amount of stall feeding is able to impart, especially if corn enters largely into the ration in contrast to the grass. This is more or less illustrated in the instance of the beef breeds, for the Hereford notably is characterized by natural flesh. The reputation of the Aberdeenshire Shorthorns for imparting thick flesh to thin fleshed sorts is to my mind traceable largely to the rational feeding system they have undergone. I believe this is applicable also to sheep. It would seem as if natural flesh is best put on with exercise just as a threshing machine has to be fed with the grain in motion. Let one who has been familiar with the wholesome management which may be given cattle and sheep and horses where good grass on a limestone foundation forms the basis of their support, undertake to grow and produce them under such conditions where natural grass is unknown and other crops have to be made to take its place, then the truth of this assertion will come to him with tremendous force.

Taking a broad view of the cattle industry one of the points needing most emphasis, that more steers of the type of Challenger may be produced, is the securing of natural flesh in the sires that we use, for this will give us the butcher's cuts and the smoothness that is needed. There will be less sharpness over the shoulders, fewer thin backs, and the tails will not stand high as they invariably do in the majority of our steers. With bulls of this type and the feeding of our steers from early maturity we are working towards the type which Challenger represents and it is the highest that there is.—JOHN A. CRAIG, to the Cattle Raisers' Association.

#### British Market for U. S. Meats.

The unsavory prominence given the American packing industry of late lends interest to a report of the U. S. department of commerce and labor just issued. According to this report, the United States exported during the eleven months ending May 31, meats and meat products to the value of \$180,000,000 an increase of sixty per cent. over the same period ten years ago. There were \$75,000,000 worth of bacon, ham, fresh and canned beef exported of which Great Britain took \$68,000,000 worth, and of the \$40,000,000 worth of live cattle she took \$36,750,000 worth. The Netherlands which are the chief dairy exporting countries took \$6,500,000 worth of oleo products out of a total of \$11,500,000 worth exported. The largest increase in exports in the ten years occurs in lard, salted and fresh pork and fresh beef. It will be interesting to make comparisons at the end of next year when the effects of the present exposure will be observed.

### Aberdeenshire Shorthorns.

Before taking up the most famous of all Scotch herds, the story of the life-work of Amos Cruickshank, the "grand old man," who, in cold, far-away Aberdeenshire, initiated a new era in the history of the Shorthorn world, we may briefly refer to a few minor herds, and in more detail to one worthy of special notice, that of S Campbell, of Kinellar, which, although of later foundation than Sittyton, was contemporaneous with it, and which not only brought deserved credit to its founder, but also was instrumental in bringing the Sittyton Shorthorns into favor and prominence, both in the old world and in the new. Fortunately, information is not lacking regarding the herd at Kinellar, where for the long period of 44 years Sylvester Campbell devoted himself, with no little success, to Shorthorn breeding. Like other leading northern herds, Kinellar had a Ury foundation, Mr. Campbell having bought at Captain Barclay's dispersion, in 1847, two heifers, Isabella and Susannah, both sired by the Pacha (7612), grandson of Mason of Chilton's Lady Sarah, the flower of the Ury herd. For Isabella Mr. Campbell paid 20 gs., and for Susannah only 9 gs., nevertheless the former proved the cheaper, for whereas the latter seems to have done no good, Isabella gave rise to the Clarets and Urys of Kinellar, among which were some of the best cattle in the herd. In 1854 he bought from Whitehead, of Little Methlick, a cow, Crocus, by Sir Arthur (12072), the granddaughter of a Pacha heifer, which had also been bought at the Ury dispersion sale. From Crocus three sprang the Minas, which were highly esteemed by Mr. Campbell himself, and which were, as a race, low-built, thick, fleshy cattle, exhibiting a great deal of character, and had an excellent show-yard record. Three years later, in 1857, another fine cow, Thalia, by Earl of Aberdeen (12800), was bought from Longmore, of Rettie, and from her are descended the Kinellar Rosebuds. A very important purchase, and one which was destined to greatly help the upbuilding of the herd, was that of Nonpareil XXIV., by Lord Sackville (13249), from Cruickshank, of Sittyton, in 1860. This tribe traces back to the cow Nonpareil, by Tathwell Studley (5401), a descendant of Comet, which belonged to Cartwright, of Studley, in Lincolnshire, from whom Amos Cruickshank had bought Nonpareil III., in 1844. In Mr. Campbell's hands the Nonpareils became a representative Scotch family, and were finally regarded as one of the very best in the herd. They were thick, low-set, beefy cattle, generally of rich red colors, and were well-known prize winners. Another cow of English origin which came to Kinellar about this time, and from which came a family now held in much repute, was Miss Ramsden, by Duke (3630). She was bred by Sir J. Ramsden, and had been brought to Scotland by Jopp, of Nether Boddam, from whom Mr. Campbell purchased her. The cow, Maid of Promise, from which originated the family that produced the best cow ever owned by Mr. Campbell, was bought from Benton, of Cattie, but was of pure Sittyton extraction. Her noted descendant, Maid of Promise VI., was breed champion at the Royal Northern in 1800, beating, among other well-known prize winners, D. C. Bruce's Highland Society champion, Cock o' the North (57072). It will be remembered that at Stirling, when Cock o' the North gained his championship, Mr. Bruce also came in first with Fitzlyon, his Aberdeen-Angus bull, thus heading the list among aged bulls for both Shorthorn and Aberdeen-Angus, a dual honor which has not, we believe, been held by any other breeder. From Jewess, a cow bought from Harvey, of Tillygreig, Mr. Campbell obtained Thessalonica, by Duke of Clarence (9040), a cow that gave rise to one of the most far-famed tribes of Kinellar origin, namely, the Golden Drops, a tribe that proved a potent factor in the dissemination of Scotch blood through Canada. Mr. George Isaac, a brother-in-law of Mr. Campbell's, who had emigrated to Canada, desiring to improve his own cattle stock, had sent out to him from the Kinellar herd two yearling heifers and a bull calf. Three years later he took out a second consignment of seven heifers and two yearling bulls. One of the heifers was Golden Drop II., and, writing of her, Sanders, of Chicago, says: "This was the first of the celebrated Golden Drop family brought to America, and the subsequent career of the excellent Kinellar tribe in the West contributed largely to building the Scotch Shorthorn fame on this side of the Atlantic." Another excellent cow of the same tribe was taken to America later by J. S. Thompson, of Ontario. This was Golden Drop I., by

Prince of Worcester (20597), out of Golden Drop, by Scarlet Velvet (16916), and she was there sold into one of the most noted herds of the West for over £200, where she added to the rising fame of the Aberdeenshire cattle in the new world. Mr. Davidson next took out from Kinellar one of her calves, Golden Drop IV., by Sir Christopher (22895), a red roan, from which C. W. Norton, of Iowa, bred by a Bates bull, a grand roan, Norton's Golden Drop, which passed into the hands of the great advocate of Scotch Shorthorns for America, Colonel W. A. Harris, of Linwood, and in his herd gave rise to the Linwood Golden Drops, the best females ever owned by Col. Harris, "Indeed," says Sanders, "the Linwood Golden Drops, with their beautiful finish, their wealth of flesh, substance and character, constituted, in the opinion of some of our best judges, the most superb family of Shorthorn cattle of their time in the United States." One of the Kinellar Wimples was sweepstakes bull at Toronto in 1890, and in Philadelphia one of the Isabellas gained the champion sweepstakes as the best animal, any age or breed. To this tribe also belonged Duthie of Collynie's First Choice (58950).

The earliest of the Kinellar stock bulls were bought at Sittyton—Mosstrooper (11827), The Garioch Boy (15382), Beeswing (12456), Scarlet Velvet (16916), and Diphthong (17681). Unfortunately, Mr. Campbell lost the Garioch Boy very soon after purchase, but otherwise each of the list proved an excellent investment, the last two named being particularly valuable factors in the establishment of the herd. Beeswing, by Matadore (11800), traced back on the maternal side to the old Phantassie stock, and was the sire

in a spirit of enterprise, decided to try an infusion of English blood, and, as in the history of the former herds, the experiment did not prove a success. From 1863 to 1877 the herd was headed by English bulls, mostly of Booth blood, and among them such noted animals as Prince of Worcester (20597), a Royal winner, Sir Christopher (22805), and Borough Member (33186). But without exception they did more harm than good in regard to flesh, although they perhaps helped to strengthen the milking propensities. None of the English sires proving a success, Mr. Campbell finally went back to Sittyton, and also used bulls of his own breeding, among which was Duke (28342), a bull that took first honors at the Northern Show three years running. Among the later bulls from the Sittyton herd were Vermont (47193), and Gravesend (46461), a bull that afterwards went to Collynie. From 1857 to 1876, before the Aberdeen joint sale had been initiated, the young bulls were annually sold at Kinellar, and, as in those days the exposers had themselves to purvey for their customers, it was usual for the extra table requisites to be lent by another breeder, on the understanding that when his sale took place the favor would be returned. In this matter, W. S. Marr, Sr., of Uppermill, and Sylvester Campbell were associated.

Early in 1891 Sylvester Campbell died, and the herd was dispersed on the 13th of October the same year. From its modest beginning with the two Pacha heifers, which had cost 29 gs., the herd had grown to nearly 100 valuable animals, the dispersion of which was one of the events of the Shorthorn world. Wm. Duthie was judge of the sale, Macdonald, Fraser, & Co., the auctioneers, and buyers from far and near were



Photo by G. R. HOARE, Bowden.

MAKING A BEGINNING ON A FARM NEAR BOWDEN, ALTA.

of some of Mr. Campbell's most useful cows. Scarlet Velvet was very closely related to Champion of England, the most impressive of all the Sittyton sires, their dams, being twin sisters. When on one of his visits to England, Mr. Cruickshank bought the cow, Verdant, by The Exchequer (9721), a granddaughter of Tranquil, by Captain Barclay's Billy (3151). At Sittyton, Verdant gave birth to twin heifer calves after Plantagenet (11906), Verdure and Virtue; the latter, the mother of Champion of England, the former the mother of Scarlet Velvet. Scarlet Velvet was a stylish red bull, and had a splendid show-yard career. In 1861 he carried first at the Mar Show, first at the Royal Northern, and second at the Highland Society Show at Perth; and in 1862 he was first at the Garioch Farmer Club, and carried the breed championship at the Royal Northern. Diphthong succeeded Scarlet Velvet, and kept up the reputation he had established. The great success of these bulls did not a little to bring the Sittyton cattle into prominence. These may be said to have been the palmy days of the Kinellar herd, for about this time Mr. Campbell, whose herd now, to a certain extent, rivalled that of Sittyton itself,

present in large numbers. Eighty-nine animals were exposed for sale, representing twenty families, and among the buyers were Lord Rosebury; Duthie, Collynie; Fletcher, of Rosehaugh; Green, Silsdon, York; Harrison, York; Lamb, Aubourn, Lincoln, etc., etc. The 27 cows offered sold at an average of £30, and the two-year-old heifers averaged £42. At the annual sales the averages had ranged from £31 to £43, good prices in those days. No infectious disease ever entered the herd, which was all along in a thoroughly healthy condition. They were thick-fleshed beefy cattle, and were never forced, the aim in the management of the herd having been the production of a type of cattle suited to the churlish climate. Sylvester Campbell was one of the few who made Shorthorn breeding pay. He was acknowledged to be an excellent judge, and he exhibited the national discretion, perseverance and steadiness of purpose in the management of the herd. He has been called the "guiding star of the Marr Agricultural Society," and as a man and neighbor he was held in high esteem. The members of his family have retained a keen interest in the breed of which their father was one of the early enthusiastic supporters.

The present tenant of Kinellar, also Sylvester Campbell, and his brother, George Campbell, of Harthill, both are judges, breeders and dealers. During the Canadian and North American boom the former exported 300 Shorthorns to Canada on commission, and since that time he has been one of Bailie Taylor's channels of supply for the Argentine. At the joint sale on the Friday of Shorthorn week, last autumn, he sold four, his average being £75 1s. 6d., the highest of the day. Another brother, Alexander, tenant of Deystone, the neighboring farm to Kinellar, has retained some of the old Kinellar strains, such as the Clarets, Nonpareils and Clementinas. His young stock being all sent abroad, and he being a modest man who does not seek publicity, his name is less well known than it deserves to be. Another well-known breeder and judge of Shorthorns, Alex. Watson, late of Auchronie, and now of Bruceland, is a son-in-law to the late Sylvester Campbell.—B., in the *Scottish Farmer*.

## FARM

### Methods of Corn Breeding.

Three methods of breeding corn are commonly practiced: the farmer's seed block system, the block or mating system, and the row system.

**The Farmer's Breeding Block.**—For a breeder, situated as is the ordinary farmer, a simple and inexpensive method must be followed. The improvement, of course, will not be marked as in the other methods, but this plan, if persis-

tently followed, will do much to improve the yield and quality of any corn. From the seed selected for planting pick out twenty or thirty of the choicest ears and plant them in a block by themselves on the south or west side of the field, where they will be removed at least a quarter of a mile from any other variety. These locations are to be preferred, as the prevailing winds come from these directions. If corn of another variety is near enough to cause damage, the choice ears may be planted in the middle of the regular field. Here they should receive close attention, as they are naturally placed at a disadvantage through being surrounded by, and more or less crossed with the ordinary field stock. If planted on the side of the field, it is best to plant in a block, as a number of rows on one side are almost sure to receive too little pollen for complete fertilization if planted in a long narrow strip. No special care need be given this plot in the way of manure or extra cultivation, as the conditions should be as nearly as possible those under which the corn is to be grown.

the kernels on a good ear to barrenness and production of nubbin-bearing stalks. This method enables one to make a better selection, both from the standpoint of ear and stalk, but it makes conditions more favorable for harvesting and storing his seed corn at the time and in the manner he considers will give best results. Since "like begets like," he has reason to believe his best seed ears will be found in his seed-block, because his best ears were planted there. At the proper time for husking he can make a careful selection, based, not only on the ear alone, but on the nature of the parent stalk as well. Naturally, he will choose the largest and best-developed mature ears, borne at a convenient height on desirable stalks. Not only will this system tend to increase the probability of more careful field selection, but it will do even more towards improving methods of storing. With a seed-ears block, a farmer will make a business of selecting his seed at the proper time, instead of depending on getting choice ears from his entire field. One thing at a time is all a man is capable of doing well, and in the rush of regular husking, seed ears are usually chosen on account of size, instead of paying due attention to the stalks bearing them, the character of the ground on which they were produced, the number of stalks in a hill, and other factors equally important which have a very direct bearing on the character of the ear produced.

**The Block System.**—In the block system, an ear possessing outstanding merit in one or more desirable characters is mated with an ear possessing other desirable features, but perhaps somewhat deficient in those points in which its mate excels. By mating these two ears, the

this method, ears possessing the desired characteristics in the highest degree, as determined by their conformity to the points which go to make up perfection in form, and also from the chemical composition, as determined by analysis, are planted in rows by themselves. Each ear is shelled separately, and its kernels are used to plant a row. A composite sample is made of the corn remaining from all the ears and this is used to plant several border rows around the block to protect the breeding ears from foreign pollen.

Before any pollen is shed, alternate rows are detasseled to prevent inbreeding. Barren stalks and suckers in all the rows are detasseled or removed to prevent their pollen fertilizing strong, vigorous silks. At harvest time, full field notes are taken of all detasseled rows. These rows are then husked and weighed separately, and the choicest ears from those rows showing the greatest number of desirable characters are saved for next year's breeding rows.

This system makes it possible to obtain the performance record of each individual ear, and this record forms the basis of the selection of future mother ears. While this method makes it possible to ascertain the exact reproductive power of each ear, it presents the usual possibility for self-pollination, and an unusual possibility for cross-pollination.

In an experiment extending over four years, at the University of Illinois, where alternate rows were detasseled, and the best ears from the highest-yielding rows in the tasseled and detasseled rows were planted successively, the average increase in yield for the four years was 10.6 bushels per acre in favor of the detasseled rows. Of course, the detasseled rows were cross-pollinated, while the tasseled rows became more and more imbred. These marked results in favor of cross-pollination led to the planning of an experiment to ensure the greatest amount of cross-breeding. Each row was planted with corn from a separate ear. The even-numbered rows were detasseled, and seed for the next year's breeding-plot was taken from the six best-yielding detasseled rows in each quarter, four ears being taken from each row. Of the four seed ears taken from each selected field row, two were used for sire seed and two for dam seed. A guide system for even years and a guide system for odd years has been worked out whereby the ears are so planted in the field that practically no inbreeding occurs. As yet no data have been secured on this experiment.

After the four choice ears have been selected from each of the best six rows in each quarter of the breeding block, the remaining good ears are planted in the multiplying plot. Here all weak and barren stalks are detasseled, as the seed for the commercial field is taken from the multiplying plot. All seed ears are registered, and the number and description of each year, together with the performance record, is carefully preserved. Since it has been demonstrated that the breeding of corn for specific purposes is both possible and practicable, a large number of breeders and commercial seed-houses have taken up the work with marked success. At Bloomington, Ill., the Funk Brothers have over 8,000 acres in improved strains of corn. They have devoted considerable attention to, and are making specialties of breeding corn, high in oil and high in protein, for general feeding; high in oil and low in protein for glucose factories; high protein, without changing the abnormal amount of oil to obtain a balanced ration, for fancy beef and bacon hogs; high protein, with low oil, for growing cattle and young stock.

This firm has its own chemist and a thoroughly-equipped chemical laboratory. Any corn breeder in the State of Illinois may have several samples of his corn analyzed by the Station free of charge, providing he carries on the breeding work as directed by the Station. The real work of breeding corn is, as yet, largely in the experimental stage. A few pioneers have, by their failures and by their successes, pointed out the way, but much yet remains to be done. Much of the so-called breeding of to-day cannot correctly be termed breeding. Much of the so-called pedigreed corn offered to the public is not really pedigreed corn. An absolute pedigree can be established on the dam side, but as near as we can come to the pedigree of the male side is that we are sure that it is of good blood, although the exact pedigree cannot be ascertained and recorded.

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EFFECTS OF SETTLERS FROM RENFREW CO., ONTARIO, UNLOADED AT HANLEY, SASK., APRIL 12TH.

breeder aims at combining the desirable qualities of both parents in the resulting progeny. In following this system, the odd-numbered rows are planted with the odd-numbered ears. At tasseling time the progeny of one ear is detasseled to prevent inbreeding, and the breeding ears for next year's crop are selected from the detasseled rows. While this system has its commendable features, it is open to a number of serious criticisms. The great amount of work entailed in planting by hand, and the labor of harvesting and weighing each row by itself, makes it almost impracticable for the average breeder, except on a very small scale for a foundation stock.

Another strong objection is the inability of the breeder to estimate correctly the effect of the soil conditions on the yield of the different plots, for no matter how uniform the field may be, experiments have proven that the soil has frequently more to do in determining yield than the quality of the seed sown. In the plot system the soil is a more potent factor in determining yield than it is in the row system, because it must of necessity, be small, and hence too often less representative of the whole field.

In addition to these disadvantages, the breeder must bear in mind that unless he has each plot completely isolated the progeny of the detasseled rows will not be wholly the result of crossing between the mated parents, but will, to a considerable extent, be the result of crossing from stalks in adjoining blocks.

**The Row System.**—When time and means are at the disposal of the breeder, best results are secured by adopting the row system. By

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**The Concrete Sidewalk.**

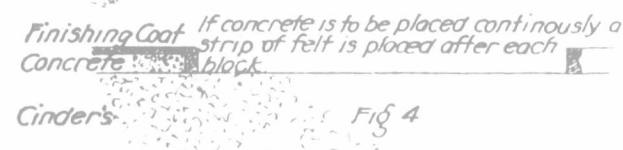
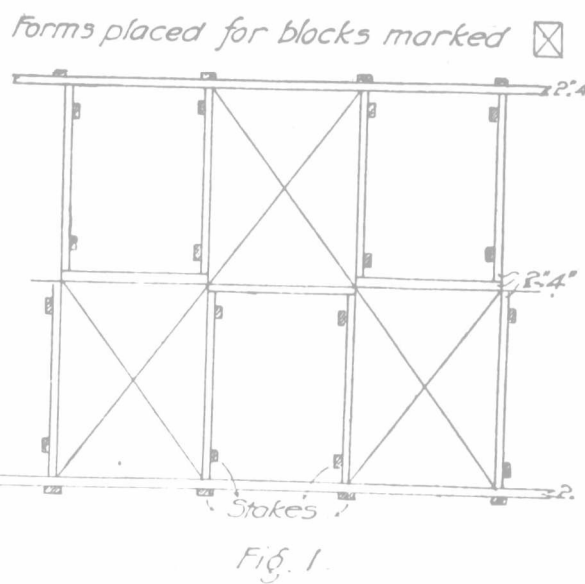
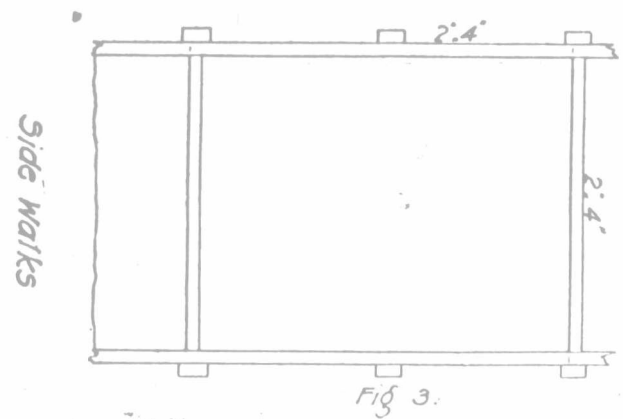
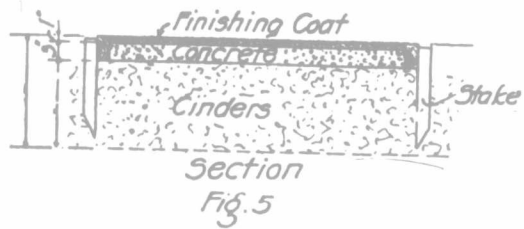
Many a farmer has decided to put down some sort of sidewalk from the house to the outbuildings and to the road and the choice of material with which to make a substantial and permanent walk has perplexed him. The high price and rapid decay of lumber renders that material unsuited to his purpose, and he is forced to turn his attention therefore to the material which will give him the wear and cleanly appearance of stone, and to obtain those desiderata cement has to be drawn upon. Nothing adds more to the appearance of the farmstead than clean, solid unbroken walks and we believe the following description of methods by which any farmer may construct his own walks will be appreciated:

"As much care should be taken in laying the foundation as the walk itself. Foundations should generally be six inches to twelve inches deep, depending upon the climate and character of the soil. In sections where there is a porous soil and a mild climate foundations are sometimes omitted entirely. If the soil is clayey, blind drain of coarse gravel or tile should be laid at the lowest point in the excavation, to carry off any water that might accumulate. Walks are frequently ruined by water freezing in the foundations and heaving them out of position.

Excavate to the sub-grade previously determined upon, three inches wider on each side than the proposed walk, and fill with broken stone,

The finishing coat should be one inch thick, of one part cement and one and one half parts clean coarse sand or crushed stone screenings. This coat should be spread on before the concrete has taken its set, and smoothed off with a screen or straight edge run over the 2x4 scantlings, the object being to thoroughly bind the finishing coat to the concrete base. If the bond between the finishing coat and the concrete is imperfect, the walk gives a hollow sound under the feet, and is liable to crack after being down one or two years. Smooth with a wooden float, and groove exactly over the joints between the concrete (Fig. No. 2), so as to bevel the edges of all blocks. Do not trowel the finishing coat too much, nor until it has begun to stiffen, as this tends to separate the concrete from the sand producing hair cracks, and giving a poor wearing surface. Keep the finished walks protected from dust, dirt, currents of air, and the hot sun during the process of setting, and further protect from the sun and traffic for three or four days, and keep moist by sprinkling. The covering may be whatever is most convenient—sand, straw, sawdust, grass, or boards.

Most walks are made the width of a single block, and should be constructed as shown in Fig. No. 3. In a walk the width of a single block, make every alternate block and then go back and fill in the blocks between. Fig. No. 4 shows cross section of same, and Fig. No. 5 is a lengthwise sectional view."



gravel or cinders to within four inches of the proposed finished surface, wetting well and tamping in layers, so that when complete it will be even and firm but porous. Place 2-inch by 4-inch scantlings (preferably dressed on inside and edge and perfectly straight) on top of the cinder foundation, the proper distance apart to form the inner and outer edges of the walk. The outside or curb strips must be one or two inches lower than the inner edge of the walk. This will give a slight incline to the finished surface, and allow the water to run off. A good rule to follow is to allow one fourth of an inch slope to every foot of width of walk. For wide walks lay off the space between the scantlings into equal sections not larger than six feet square, put 2x4-inch scantlings crosswise and in the center, as shown in Fig. No. 1. This will make every alternate space, shown in figure by diagonal line, the size desired. Fill these spaces with concrete to a depth of three inches (this depth should be four inches where there is more than ordinary traffic, or where the blocks are six feet square), one part cement, two parts clean coarse sand, and four to five parts broken stone or screened gravel, then tamp until water begins to show on top. On the same day, as soon as the concrete has set, remove crosswise and center scantlings, place a sheet of tar paper on the edges to separate them from all other squares (Fig. No. 1), and fill in the spaces thus left with three inches of concrete as before. Mark the scantlings to show where the joints come.

**The Coast Lumber Trade.**

The province of British Columbia may be said to have three great industries which overshadow all others carried on within her confines, viz., lumbering, mining and fishing. It is difficult to say which of these three will be predominant twenty years from now, but at the present time it must be acknowledged that that of lumbering holds the first place of importance, both as to the volume of business transacted and the number of people directly and indirectly employed.

The contribution of an industry, engaged in the manufacture of the natural resources of a country, to the general revenue, is often a fair criterion of its importance to the state. Judging the lumber industry of British Columbia on this basis, it is readily seen that its importance at the present juncture in our history is far above that of any of the others. During the fiscal year just closed we find that the department of finance drew no less a sum than \$486,516.46 from this industry. Of that \$70,228.17 was collected from rentals on leases and licenses on timber lands, while \$416,288.29 was obtained as royalty on the manufactured product. Contrast with this the metal mining industry contributed the sum of \$250,268.84 to the revenue of the province. The revenue from coal mining was \$64,682.45, making in all a total of \$353,681.20. The lumber industry contributed nearly double the revenue obtained from the tax on real estate; over two and a half times as much as that obtained from the tax on personal property; and nearly five times as much as that obtained from the tax on wild lands. In fact its importance is such that the government looks to it as its chief source of revenue.

It is a difficult matter to estimate the exact value

of timber lands in British Columbia, and it is still more difficult to say how much of this area contains timber, which is now, or will be in the future, of merchantable use. The average of timber under lease is about 1,500 square miles, and the total area of forest and woodland is put down by the Dominion statistician as 285,554 square miles. The greater portion of this is covered with small trees suitable only for local supply of fuel and timber. Everything considered British Columbia has a comparatively large area of timber land containing some of the finest timber in the world, but from estimates made by reliable cruisers it is not thought that it will last more than fifty years. It would, of course, stand the present rate of consumption for a much longer period, but it is safe to venture the assertion that at the end of fifteen years the cutting capacity of the mills in the province will have doubled and cutting then at the rate of two billion feet per year the supply will be comparatively short lived.

The principal limits, and the great bulk of the timber on the coast, are located on Vancouver Island, but the coast line, from the boundary line north for three hundred miles, also contains extensive timber areas, the forest line following the indents and river valleys and fringing the mountain sides. In the interior and Kootenay districts there are extensive forests of fir, cedar and spruce, but the timber is smaller and not of as good quality.

From the international boundary north to Knight's Inlet, both on the Island of Vancouver and the mainland coast, a distance of nearly 250 miles, the principal woods of economic importance are the Douglas fir (*Pseudo-tsuga Douglassii*) named after David Douglas, a noted botanist who explored New Caledonia in the early twenties of last century; the red cedars (*Thuja Gigantea*), the yellow cedar (*Thuja Excelsa*), white spruce (*Picea Sitchensis*), and the hemlock (*Tsuga Mertensiana*). The most abundant and most widely distributed in this area is the Douglas fir, and it is monster trees of this variety that have made the forests of British Columbia known the world over. Red cedar is second in importance and spruce and hemlock, although widely distributed in this area, are not found in extensive quantities. For a distance of fifty miles north of Knight's Inlet, following the coast line, the country is given up almost wholly to cedar with a sprinkling of spruce averaging about five per cent. From Takush Harbor, for fifty to seventy five miles north, is what is known as the spruce area and it is here that extensive limits have been taken up by pulp companies. The farther north, the smaller the trees become, until the Alaska boundary is reached, where the timber is small and of little commercial value.

The Douglas fir, often classed by the trade as Oregon pine, is the staple lumber of commerce. It has about the same specific gravity as oak, has great strength and has a wide range of usefulness, from making mouldings to making spars 120 feet long and squaring 30 to 36 inches. It is classed by some naturalists as a valuable pulp-making tree as well, although it is not generally recognized as such. The cedars, often of immense size, specimens sometimes being 18 feet in diameter on the stump, are the next in importance. It is out of this wood that the famous shingles of British Columbia are made. It is especially valuable for interior finishing, being rich in coloring and taking on a beautiful finish. The white spruce might be termed a first cousin to the Douglas fir and the many uses to which it may be put makes it even of more commercial value than the latter. It is utilized largely in making doors, finishing, salmon boxes, butter boxes and fruit cases of all kinds. It is par excellence, too, the wood for pulp manufacture, which some day is bound to be one of the important manufacturing industries of the province.

The hemlock is a common timber and up the coast is found in considerable quantities. It is used for the same purposes as the Douglas fir.

There are many other kinds of woods, such as the large maple (*Acer Macrophyllum*), crab-apple (*Pirus rivularis*), alder (*Alnus ruleria*), oak (*Quercus Garryana*) and others, but these are found in such small quantities that they are not looked upon as being of much commercial importance.

The timber lands of the province was originally held by the provincial government, which, in the early history of British Columbia, sold large areas at a certain price per acre. The crown grants for these carried the right to cut all timber thereon without the payment of a royalty to the government. There are other lands crown granted, on which the right to cut the timber without royalty was not granted. The timber on these lands is subject to a tax of 5 cents per thousand feet, when cut and manufactured. Timber lands held under these two systems are not, comparatively speaking, large in area, and the bulk of the forest under the jurisdiction of the province which has been alienated is held under either leases or licenses. Up to the year 1897, the privilege was given of acquiring large areas under leases at a certain rental per acre, running for a period of twenty one years. Under the existing extensive tracts of timber lands were taken up by the larger mill companies. Since the year named the above named system has been abolished and all lands now taken up must be secured under the license system, which grants an area of more than 640 acres to any one license. License holders pay a yearly rental of \$140 and a royalty of fifty cents per thousand,

the same as on leases. The royalty on these is subject to change by the legislature of the province. All timber cut on lands on which a royalty is due to the crown must be scaled by government scalers and with the exception of timber lands crown granted since 1887, the exportation of timber in an unmanufactured state is prohibited under penalty of seizure and confiscation.

When the Dominion government arranged with British Columbia to extend the Canadian Pacific Railway to the Pacific coast they acquired all lands within what is known as the railway belt, an area extending 20 miles north and south of the main line of the railway. All licenses to cut timber on these lands are disposed of by public competition. Parties tendering must state the sum per square mile which they will pay over and above ground rent and royalty, and a cheque must accompany the tender. The highest bonus will be accepted. The length of any berth must not exceed three times the breadth thereof. There lands at present carry a royalty of 50 cents per thousand, payable to the department of the interior.

Owing to the large average size of the lumber on the coast, logging operations are of a costly nature and much more powerful machinery is required than in the eastern parts of Canada and in the United States. As there is little or no snow in winter the heavy timber has to be dragged to the water over skid-roads or railways. In the earliest history of the industry logging was carried on almost entirely by ox-teams. Sometimes as many as twenty four oxen two abreast, were used to haul the heavy timber across cross-skids embedded in a roadway, as carefully made and as costly as that for the average railway. This system of logging was only applicable where the grade to the water was down hill. The ten and twelve horse team gradually superseded the ox-team and it in turn has given place almost entirely to the large road-engine which reaches by cable, an inch in diameter, as far as a mile to a mile and a half into the woods, takes hold of a string of logs coupled together and drags them over cross-skids to the water. Another smaller engine is used to haul the logs to this road, reaching out by cable to a distance of one thousand feet on each side of the road, if necessary. The road-engine will soon be replaced by the locomotive and log cars, a number of large plants of that nature being now in operation on the coast. This is made necessary from the fact that the greater portion of the timber situated close to the water has been logged off and logging by railway for distances of over two miles is found most profitable.

When the logs are put into the water they are made up into what are known as booms or rafts, and powerful tugs tow them to the mills, the tow covering a distance sometimes as great as 300 miles, the average tow being about 100 miles. A very large amount of capital is invested in the logging business, and it is one requiring a great deal of business engineering to make it a success.

Labor is costly, averaging about \$3.25 per day per man. Men engaged in this occupation are very restless, and as the labor source of supply is from 100 to 300 miles away from the camps it is often difficult to keep them operating to their full capacity.

The lumber milling business of the coast is confined almost entirely to the following places, viz., Vancouver, New Westminster, Victoria, Chemainus, Ladysmith and Nanaimo. Among the mills are found some of the largest and best equipped lumber manufacturing plants in the world. They range in capacity from 10,000 feet to 250,000 feet per day of ten hours. The shingle industry, a branch of lumber manufacturing, boasts of the largest mill cutting shingles in the world and the product of these mills is considered the highest grade of any manufactured. The yearly capacity of the lumber camps of the province has now reached the billion-foot mark, half of which can be cut by the coast mills and the other half in the mountain regions. This capacity could be nearly doubled if the mills were running night and day shifts. The capacity of the shingle mills has now reached nine hundred million and this yearly output can be also doubled by running two shifts. In fact, both lumber and shingle plants have increased their output during the last two years to an extent hardly warranted by the market. Although the market is widening every year it is safe to predict that mill-building will more than keep pace with it. In fifteen years doubtless, the present capacity will be doubled. A great deal of American capital has been invested in mills and timber limits within the last year and as the timber grows scarcer every year in some of the older states of the Union, capital which used to find investment in lumbering there will be sent to the Pacific coast and a large amount of it will find its way to British Columbia.

The securing of a profitable market for his product has been the great bugbear of the British Columbia coast lumberman. The local market for many years was very limited and in fact to-day would not be sufficient to keep one third of the plants running. Although extensive building operations have been carried on in Vancouver, Victoria and other places on the coast, mill-building has more than kept pace with them. A market outside of British Columbia has to be found for at least two thirds of the output and that market must be found in the central and eastern provinces by rail and in Australia, Japan, China and South Africa by water. As only two of the larger mills market a portion of their product by water, most of the mills must look to the east. The

prairie region is looked to, to take the bulk of the output of both lumber and shingles, although heavy shipments are made to Ontario, Quebec and the maritime provinces. The trade to the latter places consist largely of heavy timbers, car-building material and shingles. All the British Columbia output comes into keen competition with the eastern Canadian product, and that from the Southern States, most of which is allowed in duty free. The Northwest and Manitoba market is looked upon to take most of the rougher grades and some of the higher, such as siding, flooring and ceiling. The rougher grades come into competition with duty-free lumber from the United States and the railway haul averages about 1,200 miles before the product reaches this market. The high freight rate, therefore, cuts largely into the profits and it is owing to these handicaps that dividends in the lumber business in British Columbia have in the past been few and far between. The choice timber of the province is held by the mills now in operation and as these limits have increased in value the money invested in lumbering here has not been entirely unrewarded. The future, however, looks bright. The time is not far distant when three trans-continental railways will have reached the Pacific ocean. Already extensive railway building during the past year in the prairie provinces has given stimulus to lumbering in British Columbia. The mills have now plenty of orders to keep them running to the full capacity and it is expected that the trade will gradually increase. Within the next six years over \$600,000,000 will be spent in railway building in Canada. The Grand Trunk Pacific is estimated to cost over \$300,000,000, and the Canadian Northern, C. P. R. and other railways will have to build to keep pace with the general advancement. This immense amount of money will be almost altogether borrowed from the money markets of the world and will find its way into the pockets of the Canadian people. A great portion of it will find its way to British Columbia to buy railway material obtainable nowhere else in the Dominion, and this will give an impetus to the industry difficult to measure. Never in the history of Canada has the outlook been so bright for all branches of trade. Never has there been such an influx of immigration into the Dominion as during the last year, and that for the present year, 1906, promises to exceed the most sanguine expectations. The eyes of the world are on our great western empire lying between Lake Superior and the Pacific ocean. Lands which a few years ago were thought to be barren and inhospitable as an abode for man now respond to his call with bounteous harvests. Regions where once the bison trod and the red man pitched his tent, have, as if by magic, been transformed into fertile fields. Lands where once but the coyote's howl broke the stillness of the evening air, now resound with whistle of the locomotive, the ring of church bells, and the merry laugh of children. The circle of the advancing army who have gone in to reclaim this heritage is ever widening and the time is not far distant when that great country will contain one of the largest, most prosperous and most contented populations in the world. The traveler who passes through those vast regions which are yet to be reclaimed can and will say with the poet Bryant:

"These are the gardens of the desert, these  
The unshorn fields, boundless and beautiful,  
For which the speech of England has no name—  
The Prairies, I behold them for the first,  
And my heart swells, while the dilated sight  
Takes in the encircling vastness."

The lumberman of British Columbia looks down and sees this advancing army. He then casts his eyes over the forest and mineral wealth of his own grand province endowed with natural resources second to none in the world. He sees this great multitude now taking possession of our central empire must be housed. Their railways must be built and their cities erected. The greater portion of the lumber used in this work must come from this great western province. This vision has caused the lumbermen and people of British Columbia generally to take heart. Money invested in this industry here bids fair to be repaid and the general feeling is buoyant. The whole west is inter-dependent in the march of progress, and it is safe to assert that money invested in manufacturing the natural resources of British Columbia will in the future be remunerative to a degree not hitherto dreamed of.—T. F. PATERSON, B.S.A., in *Victoria B. C. Review*.

#### Believes in Building From the Ground Up.

EDITOR FARMER'S ADVOCATE:

I snatch a few moments from a busy season to comment on your article in June 6th issue entitled "Do not be stampeded into commercialism."

I quite agree with your advice to "be cautious" in the matter of undertaking any great business enterprise, but there are times when the further advice of "be courageous but not rash" might well be coupled with it and I feel that probably at no time might this advice be more appropriately given and acted upon in the matter of farmers' co-operative movements than at the present.

On every hand we are getting very conclusive evidence of the oppression, extortion and fraud that have been perpetrated by the various trusts, combines and monopolistic corporations and there only seems one practical way of meeting the difficulty and that

is by co-operation and municipal and government ownership. Government control (so called) is not enough as when private interests are at stake there are too often ready means found to make mere government control ineffective.

So far as the question under consideration is concerned, I may say that I have not learned the details of the scheme that the "western Canadian farmer" has worked out, nor do I know the capacity for business possessed by him or by those associated with him. Unfortunately it often happens that ability to originate a good idea and ability to carry the idea into practical execution are not combined in the same mind and it may be so in this case. I do not know.

But, at any rate, to make any such scheme a success it seems to me it will be necessary to control right from the country elevators right through to Liverpool very large quantities of grain and this means an investment of capital greater than I think it at all probable this gentleman and his company will be able to get together, and so I fear the scheme will not be the success its promoters hope for, even if it does not result in complete failure. Right here is where I think the government could step in and without working the least hardship to those already in the grain business. I understand that most, if not all, the terminal storage and shipping elevators are at present owned by the railroad companies. It is also hinted (of course there may be nothing in it) that there is an "understanding" between the railroad companies and the grain companies that does not work in the interest of the small or independent shipper.

If then the government owned and operated the terminal and shipping elevators instead of the railroad companies, all grain shipping interests could be handled at no greater cost than at present and with an equal chance to obtain justice.

Now for the farmers end of the scheme; all that would be necessary would be to multiply farmers' elevators and for purposes of the export trade, perhaps for all purposes, combine them under one management. Into this arrangement could be brought all private shippers in car lots, etc., from all over the country. This would give the managers or directors control of enough grain at all times to be able to make contracts for export, just as present exporters do and put them in position to get reasonable carrying rates from the various transportation companies, which at present the small shipper cannot do.

In conclusion let me say I am strongly in favor of co-operative principles, but hope to see them carried to their logical conclusion, viz., co-operation of the whole people through government ownership of all those things which are, or can be, made a means of extorting from the producer or consumer more than is just and right. Thanking you for your space and hoping to see the *ADVOCATE* take a very advanced position on the matter touched on in this letter.

Glendale.

G. H. BLACKWELL.

#### Agriculture in Germany.

According to the census 18,501,300 persons now live by agriculture in Germany. In the course of the last 20 years the area under cultivation of cereals and potatoes has changed very little; as regards wheat and barley it has remained practically the same. The staple breadstuff—rye—claimed in 1884 an area of 5,850,000 hectares, which increased to 6,040,000 hectares in 1894, and, after falling below 6,000,000 hectares in the following years, and passing it again in 1902, stood at 6,145,000 hectares in 1905, i.e., about 5 per cent. higher than in 1884. The area under oats increased from 3,780,000 hectares in 1884 to 4,190,000 hectares in 1904, equal to an increase of 11 per cent., and the area under potatoes from 2,910,000 to 3,290,000 hectares during the same period, or an increase of 13 per cent. During the two quinquennial periods of 1893-98 and 1899-1904 the area cultivated with wheat, rye, oats and barley increased on an average by 1.56 per cent., and the yield by 12.86 per cent. Calculating the average value of these four cereals at £6 10s. per ton, cultivators realised in the last five years about £18,000,000 more, excluding the valuable straw. It is true that the grain harvest alone does not afford an exact standard of the conditions of agriculture; but in other branches, too, agriculturists fared well on the whole in recent years. Prices for spirit, sugar, and starch were satisfactory, the potato and hay crops (except in 1904) were good, and the live stock is much more numerous than in the former period. With the exception of potatoes—a very important exception—the crop of 1905 was not particularly satisfactory; indeed, the average yield of rye, wheat, barley, and oats was considerably below that of the last two to five years. The potato crop, on the other hand, was plentiful; hay, clover, and lucerne very fair.—*Miller*

#### Area of B. C.

The area of British Columbia, including lakes and rivers as well as the land, is 395,000 square miles, which is greater than that of any other province of the Dominion. Quebec comes closest with a total area of 351,872 square miles, and Ontario has but 269,862.

**Cut-Worms : Habits and Life History.**

Throughout different parts of the country much damage has been done by cut-worms so that considerable interest has been aroused in the habits and nature of these insects. These are described below by Dr. Fletcher, the Dominion entomologist :

"In the spring, as soon as the seedlings appear above the ground, or annual plants are set out, many are eaten off at the surface by dull-colored caterpillars, from half an inch to an inch and a half in length, which come out at night and devour almost all kinds of young vegetation, cutting it off as described above, and often dragging part beneath the surface, where they lie hid during the day.

Cut-worms are the caterpillars of active, dull-colored moths belonging to the Noctuidae, or Owllet moths, of which there are upwards of four hundred different kinds in North America. These moths are much alike in shape and in the arrangement of the more noticeable markings, and are, for the most part, dull-brownish or grayish moths about 1½ inches across the spread wings, which hide by day like the larvæ, and fly only by night. The moths begin to appear about the middle of June, and fly till the end of the season. Most of the kinds are single-brooded, the caterpillars passing the winter half-grown, and doing most damage to vegetation in spring.

The caterpillars of the different kinds are, on the whole, very similar in appearance and habits, being smooth, greasy-looking caterpillars, of some dull shade of color similar to the ground in which they hide during the day. Their habits are almost always nocturnal; but when they occur in large numbers, they feed by day as well as by night, owing to the reduced food supply consequent upon their ravages.

The eggs from which cut-worms hatch are laid by some species in the autumn, and by others in the spring or summer. As a consequence, cut-worms of all sizes can be found in the spring: for these insects, according to the species, may pass the winter as a perfect moth, a chrysalis, a partially-grown caterpillar, or an egg. The ravages of the young caterpillars, which hatch in the summer and autumn, are seldom noticed then, on account of the abundant vegetation at those seasons. In spring, however, not only are the caterpillars much larger and capable of more mischief, but the land is then clear of all weeds and vegetation other than the crop, and when the cut-worms come from their winter retreats, there is nothing for them to eat but the farmer's early crops. Cut-worms are particularly troublesome in gardens, cutting off young cabbages, tomatoes, beans and annual bedding plants. When the caterpillars are full-fed, they burrow into the ground to a depth of a few inches and turn to brown chrysalis inside a smooth cell or a light cocoon.

Injuries by cut-worms in most seasons may be expected to stop by the end of June, but different species vary in the time they stop feeding, and

the knowledge as to the exact species which is destroying a crop is frequently of great service to a farmer, so that he may know when the caterpillars are full-grown and what their habits are, and thus know for certain when it will be safe for him to resow his land which has been ravaged by these insects. Some of the early-maturing species as the Black Army-worm (*Noctua fennica*), which frequently strips clover and pea fields early in the spring, stop feeding early enough for it to be safe for the farmer, in many instances, to apply no remedy whatever. The caterpillars, when full-fed, burrow into the ground, and the crop springs up again, frequently catching up and showing no diminution in the yield. Thus, a farmer who knows the habits of the insect, is saved from going to the trouble and expense of applying a remedy. Other species, however, mature so late in the season that it would be unsafe and unprofitable to resow the land without special treatment to destroy the cut-worms.

**REMEDIES.**

(1) Clean Farming. The keeping down of all weeds and the burning up of all haulms, stems of reaped crops and refuse, as early as possible in the autumn after crops are reaped, will destroy many eggs and prevent the deposition of others by presenting no suitable place for the moths to lay their eggs. The eggs are laid in autumn or spring, and such places are chosen by the moths as where there will be an abundance of food for the young caterpillars on hatching.

(2) Traps. Large numbers may be destroyed by placing between the rows of an infested crop, or at short distances apart on infested land, bundles of any succulent weed or other vegetation, which has been previously poisoned by dipping it, after tying in bundles, into a strong mixture of Paris green, one ounce in a pail of water. The cut-worms eat the poisoned plants, then bury themselves and die. In hot, dry weather these bundles should be put out after sundown, and a shingle may be placed on each to keep it from fading.

(3) Banding and Wrapping. (a) It will be found to well repay the trouble and expense to place a band of tin around each cabbage or other plant at the time of setting out. These may very easily be made by taking pieces of tin 6 inches long and 2½ wide and binding them around a spade or broom handle, so as to form short tubes. In placing them around a plant, the two ends can be sprung apart to admit the plant, and then the tube should be pressed about half an inch into the ground. I have found this a useful means of disposing of empty tomato and other cans. To prepare these easily, they need only be thrown into a bonfire, when the tops and bottoms fall off, and the sides become unsoldered. The central piece of tin can then be cut down the center with a pair of shears, and forms two tubes.

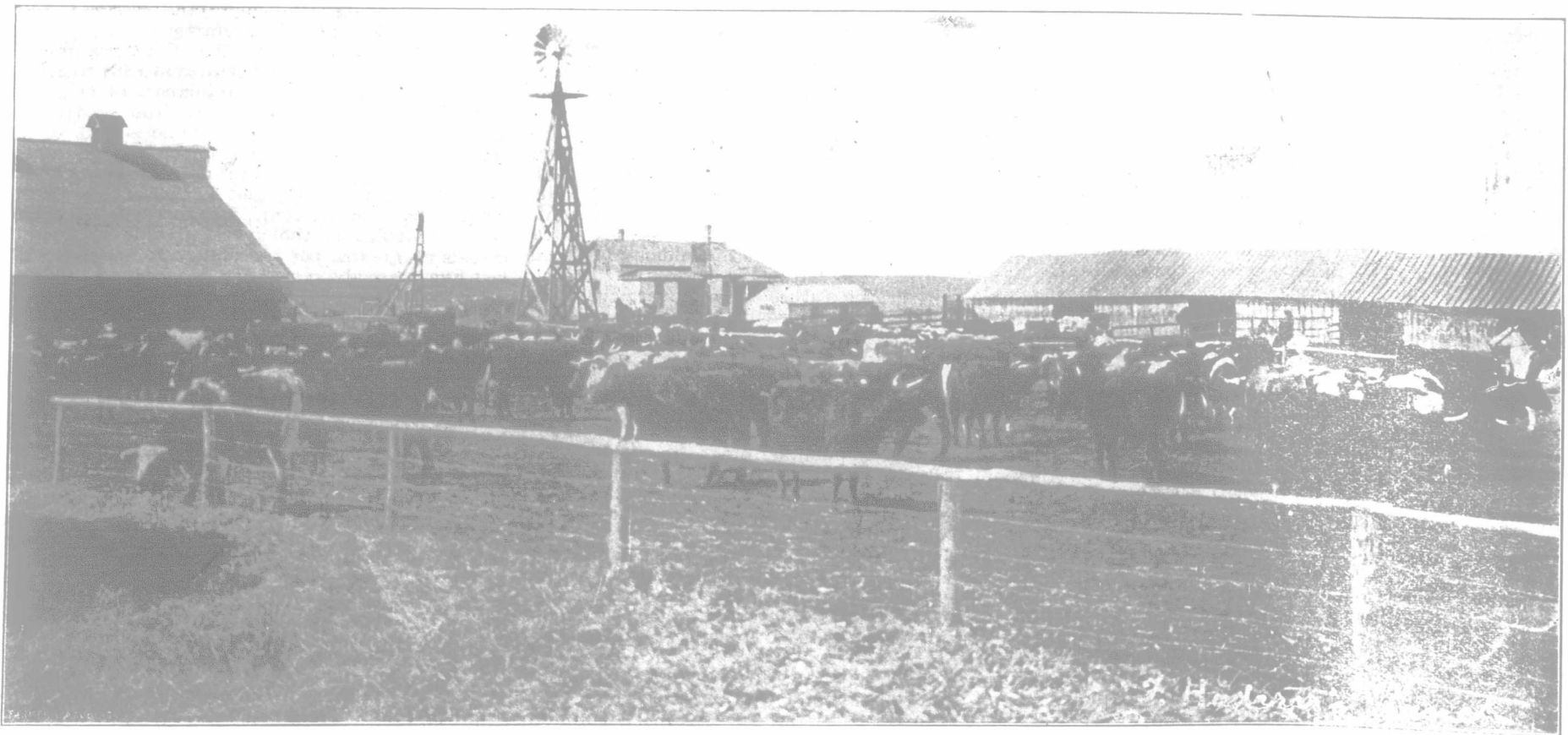
(b) Wrapping a piece of paper around the stems of plants when setting them out, will also save a great many.

Hand-picking, or digging out the cut-worm wherever a plant is seen to be cut off, should, of course, always be practised.

(4) Poisoned Bran Mash. The most remarkably effective remedy against cut-worms is the poisoned bran mash which has come into such wide use. This is made by mixing half a pound of Paris green with fifty pounds of slightly-moistened bran. In making this, it is best first to dampen some of the bran slightly with water containing a little sugar. After mixing thoroughly, add the Paris green by dusting it on the surface, and stirring all the time. We have found that when Paris green is added to perfectly dry bran, owing to its weight, it will sink to the bottom when stirred, in the same way that it does in water. Half a pound of Paris green is enough to poison fifty pounds of bran, although double this amount may be used. If the mixture is too wet, more dry bran should be stirred in, until the mixture will crumble easily and run through the fingers without adhering.

When required for garden use, all that is necessary is to sprinkle a little of the poisoned mixture by hand around such plants as are liable to attack. When crops are planted in drills or rows, a convenient way is to make the mixture rather dry, and then distribute it by means of a wheel seeder. In field practice, among such close-growing crops as standing grain, which are sometimes injured by the Red-backed cut-worm, the poisoned-bran remedy is also serviceable. The mixture can be distributed by means of a paddle or shingle, and can be thrown easily to a distance of twenty feet. When distributed in this way, there is much less danger of chickens and birds picking it up than if it is placed in lumps.

Danger. The question of danger from the use of poisoned bait is one which must be considered. It is frequently enquired about by correspondents, and some instances of the poisoning of poultry where it had been used, seemed to be justly attributable to their having eaten some of it. As a rule, there is little danger from this cause. The quantity used is so small that it is not noticed by poultry; and then, in gardens, poultry do so much harm to plants that they should never be admitted at the time of the year when cut-worms occur injuriously, and only at special times of the year, when there are no crops to injure. If, however, there should be a bad infestation by cut-worms, and there is no means of barring out or driving away the chickens, the owner of the crops must decide whether he will lose his crop or take special means of protecting his chickens. The experience of a great many people who have used this remedy, without taking any special precautions, is that injury to domestic animals is extremely rare; and, although I have been on the watch for any trouble of this sort for many years, I do not know of an instance when poultry have been poisoned, without doubt, by eating poisoned bran put out for cut-worms. However, there will be many occasions when plants in gardens may be protected by putting out the poisoned bran in



POPLAR CREEK VALLEY RANCH. PROPERTY OF F. HADERER, OLDS, ALTA.

**The Action of Certain Smut Preventives on the Vitality of Wheat.**

By Frank T. Shutt, M.A., F.I.C., Chemist, Dominion Experimental Farms before the Annual Convention of the Dominion Seed Growers' Association Ottawa.

In a paper presented to this Association at its meeting last year I brought together in a condensed and concise form the results we had obtained from experiments undertaken to ascertain the effect on the wheat of certain smut preventives and chiefly solutions of bluestone and formalin. These experiments extended over a period of 15 years, though the investigation was not carried on uninterruptedly. As the report containing this paper is still available\* it is unnecessary to repeat the data there given; it may be desirable, however, for a clearer understanding of the results now to be recorded that I should recite the general conclusions which appeared to be warranted from the work to that time. They are as follows:—

1. That the germination is retarded and the vitality of the wheat is more or less injuriously affected by the treatment for smut, whether the preventive used be bluestone or formalin.

2. That the extent or degree of this injury is determined, chiefly, by the following factors:

(a) The strength of the solution—the weaker the solution the less the injury.

(b) The period of the grain's immersion—the shorter the period the less the injury.

\*Report of the Second Annual Meeting of the Canadian Seed Growers' Association, L. H. Newman, Secretary, Canadian Building, Ottawa.

(c) The period elapsing between the treatment of the grain and its sowing—as a rule, the shorter the period the less the injury.

(d) The vigor or strength of the germ.

It is also possible that the character of the wheat in a measure determines the degree of injury to vitality, for there are indications that the softer, starchier wheats are more susceptible than those that are harder and more glutinous.

It must be stated that the evidence on certain of these points was not altogether satisfactory and conclusive. Our data, more particularly respecting varying strengths of formalin were not complete and those which we had required confirmation. Further, the employment of salt had been suggested in conjunction with the pickling solution, for the purpose of floating off light grain and weed seeds. In the absence of all data on this matter, it was important to learn how such a use might affect the vitality of the wheat. These considerations led us to undertake further tests during the past season, in accordance with the following schemes:—

Series 1. Bluestone solutions of the strength of 1 lb. to 8 gallons, and 1 lb. to 4 gallons, respectively, used with and without salt, and with the seed sown twenty-four hours and nine days after treatment.

Series 2. Formalin solutions of the strengths of 4½ ozs. to 10 gallons and 9 ozs. to 10 gallons, respectively, with and without salt, and with the seed sown twenty-four hours and nine days after treatment.

Series 3. Salt solution, of the strength of 1 lb. 5 ozs. to the gallon. Such a brine will float a potato, the strength recommended. The treated seed was tested for vitality, as in all the fore-

going experiments, twenty-four hours and nine days after immersion.

Series 4. In two instances, using the stronger solutions of bluestone and formalin, the seed was sown immediately after immersion, and therefore necessarily while still wet.

Series 5. The vitality of two wheats treated with formalin, 4½ ozs. to 10 gallons, in 1905, was ascertained.

The treatment generally in this season's work has consisted in immersion for five minutes, which as regards effect upon germination has been shown to be practically equivalent to thorough sprinkling. The grain was then spread out in a thin layer and allowed to dry thoroughly. As already stated the wheat in series 4 was not dried.

The germinative value of the treated grains was ascertained in soil, the tests being conducted in "flats" in the greenhouse. The first count was made one week after sowing, the second and last count, two weeks after sowing, at which time the number of strong and weak plants, respectively, was recorded.

The detailed results tabulated herewith.

RETARDATION OF GERMINATION.—Retardation of germination, which may be ascertained from the table by comparing the 1st with the 2nd count, is, as a rule, proportionate to the final effect of the preventive on the germ of the wheat. Those treatments which act most strongly in retarding germination are those which cause the greatest destruction of weakly germs, and consequently those which reduce to the greatest degree the percentage of vitality.

HIGH PERCENTAGE OF VITALITY ASSOCIATED WITH UNIFORMITY OF GERMINATION.—Two wheats were used in this investigation, Pringle's Champlain and Laurel—the latter being the softer

TREATMENT	PRINGLE'S CHAMPLAIN.								LAUREL.							
	Sown 24 Hours after Treatment				Sown 9 Days after Treatment.				Sown 24 hours after treatment.				Sown 9 days after treatment.			
	1st Count	2nd Count			1st Count	2nd Count			1st Count	2nd Count			1st Count	2nd Count		
		Strong	Weak	Total		Strong	Weak	Total		Strong	Weak	Total		Strong	Weak	Total
Untreated, .....	96	92	4	96	95	94	1	95	83	80	3	83	85	81	4	85
Copper sulphate, 1 lb. in 8 gallons.....	78	84	9	93	80	82	5	87	55	57	2	59	48	53	5	58
"    plus salt.....	79	82	6	88	84	82	3	85	52	53	2	55	65	57	9	66
( = 10 lbs. 12 ozs. per 8 gallons)																
Copper sulphate, 1 lb. in 4 gallons.....	69	76	6	82	58	68	6	74	30	37	9	46	30	34	10	44
"    plus salt.....	68	72	6	78	71	72	7	79	41	41	5	46	41	40	6	46
( = 4 lbs. 10 ozs. per 4 gallons)																
Formalin, 4½ ozs. in 10 gallons.....	80	81	1	82	80	74	7	81	49	43	10	53	60	53	10	63
"    plus salt.....	73	75	1	76	85	78	9	87	19	22	4	26	45	37	10	47
( = 12 lbs. 8 ozs. in 10 gallons)																
Formalin, 9 ozs. in 10 gallons.....	62	63	5	68	60	49	13	62	38	34	6	40	16	15	2	17
"    plus salt.....	64	63	3	66	46	44	7	51	23	23	5	28	9	7	3	10
( = 12 lbs. 8 ozs. per 10 gallons)																
Salt, 1 lb. 5 ozs. in 1 gallon.....	85	81	7	88	80	74	6	80	29	30	5	35	49	45	8	53



Farmers Advocate

A NORTHERN ALBERTA OAT CROP.

wheat. Pringle's Champlain not only had a higher but also a steadier or more certain percentage of vitality than Laurel. Thus, four simultaneous tests of the former (untreated) gave 97, 94, 95, and 95, while four similar tests of the latter (also untreated) gave 80, 91, 86, and 78. The greatest difference in the case of the Pringle's Champlain was only 3 per cent, while in that of Laurel it was 13.

**WHEAT WITH HIGH PERCENTAGE OF VITALITY SUFFERS LESS FROM TREATMENT THAN WHEAT WITH LOW GERMINATIVE POWER.**—Reviewing the action of the smut preventives as a whole, it will be observed that both bluestone and formalin exert a more injurious influence upon Laurel than upon Pringle's Champlain. Thus, for instance, bluestone solution 1 lb. to 4 gallons reduced the vitality of Pringle's Champlain 13 per cent., while in the case of the Laurel the reduction was 36 per cent. Similarly, for formalin 9 ozs. to 10 gallons, the reduction for Pringle's Champlain was 27 per cent., and for Laurel 42 per cent. These results go to show that a wheat with impaired vitality suffers from treatment to a greater degree than one with a high vitality.

From this, and past work, it also seems probable that soft wheats are more susceptible to the action of these smut preventives than hard wheats but the data at our command at the present would not allow me to state this as a fact.

#### BLUESTONE TREATMENT.

**Solution, 1 lb. in 8 gallons.**—This was the most satisfactory of all the fluids under trial as regards germination of the treated seed. When the grain is sown on the day following the treatment the injurious effect on wheat of high germinative quality is scarcely noticeable—it is very slight. As already noticed the action is much more noticeable in the case of the Laurel wheat, which may be due in part to weak germs or to the more ready penetration of the fluid, or possibly to both causes.

The continuous, or "after effect," of this solution is very slight, possibly not more than 5 per cent. if seeding is not longer delayed than 10 days.

**Solution, 1 lb. in 4 gallons.**—The action of this fluid is much more severe than the preceding, lowering the vitality of wheat of high germination 15 to 20 per cent., and of that of low germination 35 to 40 per cent. Germination of the Pringle's Champlain, it will be noticed, is further reduced when a period of, say, nine days is allowed to elapse before sowing.

#### FORMALIN TREATMENT.

**Solution, 4½ ozs. in 10 gallons.**—In its effect upon the wheat germ this solution does not differ greatly from that of bluestone 1 lb. in 8 gallons; however, the evidence, averaging the data from a number of trials, goes to show that the formalin solution is the more severe.

**Solution, 9 ozs. in 10 gallons.**—This solution acts most disastrously on the wheat germ, reduc-

ing the percentage of germination from 25 per cent to 60 per cent, and even more when the grain is sown but 24 hours after treatment.

**NO EFFECT ON VITALITY WHEN GRAIN IS SOWN IMMEDIATELY AFTER TREATMENT.**—Employing the two strongest solutions, copper sulphate 1 lb. to 4 gallons, and formalin 9 ozs. to 10 gallons, and immersing the grain for five minutes, no reduction in vitality was observed when the grain was sown immediately, i. e., while still wet.

**EFFECT OF SOAKING TREATED GRAIN.**—A limited number of experiments have been made to ascertain the effect of soaking for twenty-four hours before sowing grain that had been treated two months previously. From the results obtained it would appear that there is a distinct improvement in vitality in those which had been subjected to the two dilute solutions, viz., copper sulphate 1 lb. to 8 gallons, and formalin 4½ ozs. to 10 gallons. In other words, the continuous or after effect of these upon the germ had been decidedly neutralized or overcome. The same was also found true to a certain degree for grain treated with copper sulphate 1 lb. to 4 gallons, but there was no very marked improvement in the vitality of the grain subjected to formalin 9 ozs. to 10 gallons.

**EFFECT OF SALT SOLUTION, ALONE AND WITH COPPER SULPHATE AND FORMALIN.**—Brine of the strength of 1 lb. 5 ozs. per gallon was used. This solution will float a potato, and has been suggested, either alone or with copper sulphate or formalin, to float off weed seeds and light kernels. A five-minute immersion lowers the percentage of vitality to a slightly greater degree than copper sulphate 1 lb. to 4 gallons.

When used in conjunction with the two copper sulphate and formalin solutions, its general effect is to still further reduce the vitality of the grain, though notable exceptions will be observed on referring to the table of data. The most marked instances of formalin were in the Laurel wheat treated with formalin—a further illustration of the susceptibility of wheat with weak or low vitality to chemicals in general.

#### THE VITALITY OF WHEAT ONE YEAR AFTER TREATMENT.

Two wheats treated in 1905, the report of which was given in our first paper, were treated this year. The treatment had been formalin 4½ ozs. to 10 gallons. The percentage of vitality obtained from four trials ranged between 9 and 14, showing very markedly the continued effect of the treatment on the germ as mentioned last year.

To conclude this outline of the past season's investigation, it is undoubtedly safest to use either bluestone 1 lb. to 8 gallons or formalin 4½ ozs. to 10 gallons, than stronger solutions, and especially is this true if the vitality of the wheat is low or has been impaired.

A thorough sprinkling or five minutes immersion is, I think, sufficient to bring the solution

into contact with the smut spores; the wheat should then be dried and sown as soon as possible.

As to whether grain that is very smutty requires a stronger solution than one that is only slightly so, appears very doubtful to the writer. We are as yet in ignorance as to the exact strength of bluestone or formalin solutions to destroy the smut spore, but if, as is generally conceded, the two weaker solutions here worked with are effective with slightly smutty wheat, then it would seem that thoroughness of treatment is all that is necessary to make them equally effective for grain that contains a larger amount of smut.

#### Results of Different Methods of Cropping.

The chemist at the Minnesota University, Prof. Harry Snyder, who, by the way, is one of the most eminent authorities upon wheat growing, is the author of a very valuable bulletin just issued from the station.

It is in two parts, the first treating of fertilizer tests with wheat and corn and the second part the loss of nitrogen from soils. Since there is a vast area of land in western Canada similar to Minnesota soils and as our farming methods are very similar to Minnesota's we reprint from Part II of the bulletin referred to some of its more relevant statements:

"In former bulletins the influence of different methods of farming upon the nitrogen content of soils has been discussed and in the case of those that have been exclusively cultivated to grains it was found that large losses of nitrogen occur. In some of the experiments at the University Farm it was learned that the main loss of nitrogen is due to oxidation of the humus, of which nitrogen is one of the constituent elements, rather than to the removal of large amounts by the grain crops. A crop of wheat yielding 30 bushels per acre removes less than 40 pounds of nitrogen per year, but tests have shown that in twelve years of exclusive grain cultivation the loss of nitrogen in the case of rich soils has approximated 1600 lbs. per acre. Numerous analyses of soils that have been under cultivation for different periods have shown similar losses of nitrogen. In some cases the losses have been very large, while in others, where mixed farming was followed, they have been comparatively small.

In order to determine the extent to which losses of nitrogen occur from an average farm, experiments upon a number of typical farms in the state were undertaken in 1895. Samples of soils from representative fields were obtained and analyzed. Ten years later samples from the same fields were again taken and analyzed, and the extent to which losses of nitrogen had occurred was determined. The soils were originally sampled by young men who were then students of the Minnesota School of Agriculture; about ten years later other samples were taken by the same persons and from the same places and fields. It is believed that this gives a reasonable basis for making comparison as to the extent of the losses of nitrogen from these fields.

At Kennedy, Kittson County, a soil of unusually high fertility contained in 1895 .601 per cent of nitrogen. It is seldom that a soil is found with such a large amount, but, as pointed out in previous bulletins, the soils of the Red River Valley are excessively rich in nitrogen except in cases where they have been under long periods of cultivation. After ten years of exclusive grain farming, in which wheat was the main



AS THE FALL WHEAT GROWS IN ALBERTA.



crop produced, the land being one year in fallow, the soil contained .523 per cent of nitrogen, a loss during that time of 2,000 pounds per acre. The wheat crop during this ten year period removed less than 350 pounds. Hence the heavier losses have occurred through too rapid decay of the humus, of which nitrogen forms a part, and subsequent loss of the soluble nitrogen in the drain waters, and by the formation of volatile compounds of nitrogen. The soil still contains a large amount of nitrogen; in fact, ten times more than is found in some soils that are producing fair yields of wheat. The loss of nitrogen from this soil has not been sufficient as yet to appreciably affect its crop producing power.

At Childs, Wilkin County, in the central western part of the state, a sample of soil in 1895 contained .422 per cent of nitrogen, and ten years later .389 per cent. On this farm live stock has been kept and, in addition to wheat, corn and other crops have been grown. Once during the ten year period manure at the rate of 8 tons per acre was applied to the land. No clover or grass crops have been grown. It is to be noted that from this farm, where the soil is rich in nitrogen but contains less than the soil in the preceding experiment, the losses have been proportionally less, due in part to the different systems of soil treatment practised. A loss of .033 per cent of nitrogen in ten years is equivalent to a loss of nearly 1,000 pounds per acre. It is estimated that one-third of this has been removed by the grain crops and two-thirds have been lost in other ways. The large amount of nitrogen in this and the preceding soil occasionally makes itself manifest in unbalanced crop growth, the nitrogen becoming available in larger proportional amounts than the phosphoric acid and potash of the soil, and as a result the crop makes a rank growth of straw and a restricted yield of grain. On some of these rich soils it is often difficult to adjust a satisfactory rotation of crops, as the further addition of organic matter sometimes unfavorably affects the balance of the plant food. These soils are exceedingly rich in nitrogen and can, without seriously impairing the crop producing power, sustain further losses, but heavy losses should be prevented as they are unnecessary and will, if continued, make themselves felt in an impoverished condition of the soil. If more live stock were kept and mixed farming were more extensively followed, the losses of nitrogen would be much reduced.

At Hutchinson, McLeod County, in the central part of the state, soil in 1896 contained .286 per cent of nitrogen, and ten years later the same field showed .247 per cent. Wheat, oats, corn and barley have been the crops produced during this time. The land has received a dressing of farm manure, but no clover or grass crops have been grown. It is to be observed that, during the ten years, a loss from the soil of .039 per cent of nitrogen has taken place, amounting to nearly 1,200 pounds, a much larger loss than the amount required as food for the crops produced. It has been observed in former work that the heaviest losses of nitrogen occur in the case of soils which contain the largest amounts of nitrogen, and that the fermentation and decay of the humus is much slower in soils where the content of humus and nitrogen is comparatively small. It is rich soil that suffers heaviest losses. It is to be noted that, in the case of mixed grain farming as in this last example, even where manure is periodically returned to the land, if no grass crops are grown loss of nitrogen is continually taking place. The soil, however, is still rich in nitrogen and produces good crops of wheat, but if a rotation were followed in which clover formed an essential part, this loss of nitrogen would be checked.

A soil in the Chippewa River Valley, in the southwestern part of the state, in 1895 contained .363 per cent of nitrogen. Since that time it has produced wheat, oats and corn and received one light dressing of manure. At the end of ten years of cultivation the soil contained .24 per cent of nitrogen, a loss of .12 per cent. Notwithstanding this loss, the soil is still rich in nitrogen and the crop producing power has not been affected. Unless clover is grown the loss will, however, in a few years make itself felt materially in the reduced grain yields.

A soil at Lakeville, Dakot a County, contained in 1895 .31 per cent of nitrogen. During the subsequent

ten years wheat, oats, corn and clover were grown. The land was manured once during this period, at the rate of 20 tons of manure per acre. Mixed farming has been followed and only a small amount of grain has been sold from the farm. This system of farming has had a marked effect upon the nitrogen content of the soil, as, after ten years of cultivation, .309 per cent of nitrogen was found, practically the same amount as at the beginning. Live stock was the principal product sold from this farm, the income being derived from the sale of sheep, hogs and cattle. Practically all of the crops raised on the farm were fed to the live stock. The farm crops were supplemented by the purchase of a small amount of bran and shorts. Under this system of farming the yield of wheat has been increased and the last year that wheat was grown an average of 28 bushels per acre was secured. The rotation followed upon this land was wheat, seeded to clover; one year of meadow; followed by corn to which manure was applied; and then two grain crops following the corn. Because of the production of clover, practically no loss of nitrogen has occurred. Losses of phosphoric acid and potash have been very small. The effect of the farm manure upon the soil has more than offset the small amount of mineral matter lost in the live stock and farm products which have been sold. In fact it is largely the action of the farm manure upon the mineral matter of the soil, making it more active and available as plant food, that has resulted in increasing the crop producing power of the soil.

Since clover has been a prominent factor in building up the fertility of soils, it occupies a unique and important position among farm crops, and the conditions affecting its growth have naturally received a good deal of consideration from both scientists and practical farmers. Atmospheric nitrogen acquired by the action of the bacteria which are on the clover roots is the source of the increase of nitrogen in soils where clover has been grown.

In this state clover failures have been found to be due in most cases to poor seed, lack of proper preparation of the seed bed, or to lack of available phosphoric acid and potash in the soil. Poor seed has probably more often been the cause of failure of the crop than all other causes combined. As shown in a former bulletin, No. 34, of this Station, the soils of this state are chemically and physically well adapted to the production of clover. The prevalence of the nodules on the roots of clover and the negative results of the inoculation tests show that general inoculation of the soil is unnecessary in Minnesota for the production of clover to restore nitrogen to old grain soils.

SUMMARY.

The loss of nitrogen from four grain farms in ten years amounted to from three to five times more than was removed by the crops. This loss was due to the rapid decay of the humus and the liberation of the nitrogen, which forms an essential part of the humus. The losses of nitrogen from these grain farms were practically the same as from the experimental plots at the University Farm. The results of the tests on the small plots are in accord with the field tests in different parts of the state.

Where clover was grown, crops rotated, live stock kept, and farm manure used, an equilibrium as to the nitrogen content of the soil was maintained, the mineral plant food was kept in the most available condition and maximum yields were secured."

Rancher Boosts Alfalfa.

EDITOR FARMER'S ADVOCATE:

Replying to yours of recent date, I would say that to raise alfalfa successfully one must have land suitable for it. Alfalfa does best on a loose sandy soil. Land that will grow sage brush three feet high or higher is the best kind of land for alfalfa. It will not do well on wet soggy soil and will not grow well on sandy land that has a hard poor subsoil. I have also seen fairly good results on heavy gumbo soil with a loose sandy subsoil. If the roots of alfalfa go down to water the crop will be a failure, all talk to the contrary notwithstanding. I. D. O'Donald, the man who has probably made as much or more money than any one else in Montana raising alfalfa, says, to be a

successful alfalfa grower one must buy seed and that is a failure buy more seed, and I am of about the same opinion. I believe that the best results will be obtained if one buys the Turkestan variety and it is simply folly to sow alfalfa unless the ground is well prepared. Any one who can grow onions successfully can raise alfalfa, that is to say put your ground in shape to raise a crop of onions and it will be just right to sow alfalfa seed on.

As to time of seeding, that will all depend on the season. Alfalfa seed will sprout in three to five days if conditions are good. As to sowing with or without grain for myself I prefer to sow a light crop of oats with the alfalfa seed.

I would advise any one sowing alfalfa to sow enough timothy with it to make about half a stand, as it will give better results mixed.

Probably I should say that my experience has all been with irrigated fields. We have a nice crop now growing on our ranch near the boundary 65 miles south of Maple Creek, the land along this creek is ideal alfalfa soil.

H. J. BADGER.

Soil Conditions and Crop Improvement.

EXCERPTS FROM A PAPER PREPARED BY PROF. R. HARCOURT, CHEMIST, ONTARIO AGRICULTURAL COLLEGE, FOR THE ANNUAL MEETING OF THE CANADIAN SEED GROWERS' ASSOCIATION, OTTAWA, JUNE 27 AND 28, 1906.

In plant life, as well as in animal life, the biological law that "like will produce like," holds good. It is not possible for a poor, ill-shaped scrub animal to produce a well developed animal of good conformation, nor is it possible for a poorly developed seed of low vitality to produce seed of the very highest quality.

A clear conception of the fact that an infant plant like an infant animal, requires warmth, air, sunshine, and an abundance of easily-absorbed food, will greatly aid in understanding the conditions under which it will make the best growth.

Air in the soil in which crops are growing is as essential to the life of the plants as the air in the stable is to the life of the animals housed. This ventilation of the soil is needed to supply oxygen required in germinating the seed and to permit the roots to live, for they, as well as the leaves must breathe. It is also required to supply free nitrogen for the use of the free-nitrogen-fixing germs, and to remove the excess of carbon dioxide which is set free in the soil.

A continuous supply of all the essential elements of plant growth is absolutely necessary, for, if one constituent is present in insufficient quantity, no matter what amount of the other nutriment may be available, the plant cannot be fully developed. Consequently, just as a chain is only as strong as its weakest link, so the crop-producing power of a soil is limited by the essential nutrient present in relatively the smallest quantity. Each of these essential food substances has its own particular work to do, work which cannot be done by any other material.

Plants, like animals, differ very much in their requirements and in their ability to secure that which they need. Cereal crops contain much less nitrogen than either leguminous or root crops, but they have more difficulty in securing it than the legumes. The autumn-sown cereals have both deeper roots and longer period of growth than those sown in the spring, and consequently are better able than the latter to supply themselves with the necessary ash constituents. The spring tillage for barley and oats aids nitrification in the soil; therefore, these crops have less difficulty in securing nitrogen. Barley, however, has a very short period of growth and is shallow rooted, and cannot rustle for its food to the same extent as oats.

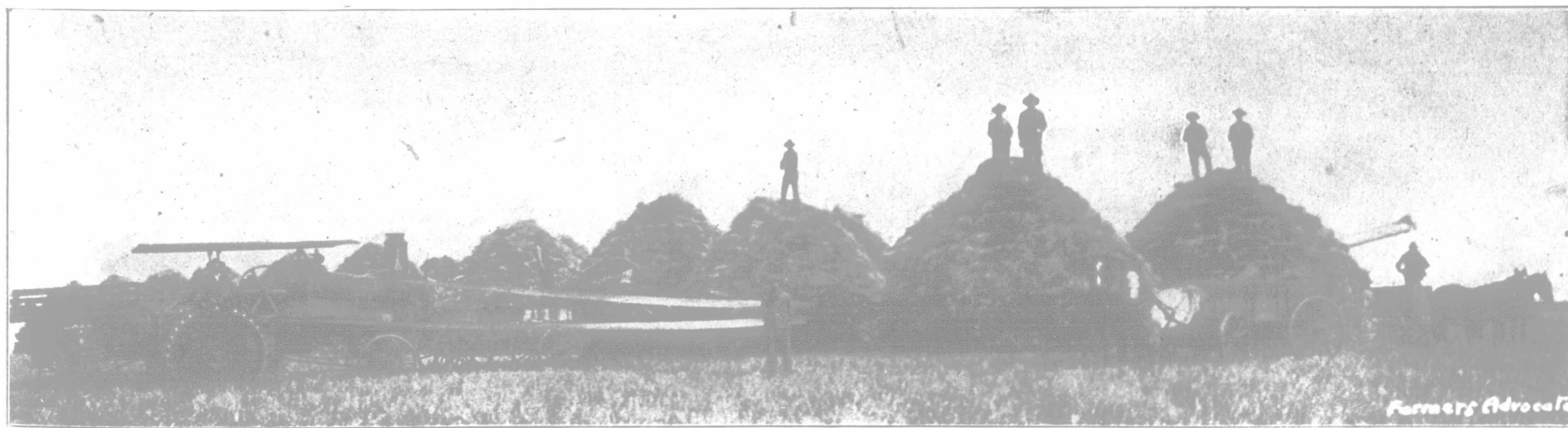


Photo by Talbot Bros.

ONE MILE FROM WETASKIWIN, ALTA.—PATERSON BROS.' OUTFIT.

Corn is not only spring sown, but has a much longer period of growth than the other cereals, and will thus have command of the nitrates produced during the whole summer. It has a fairly good root development, but may not always secure all the potash and phosphoric acid required for the production of a large yield of grain.

The striking characteristics of all the leguminous crops is the large amount of nitrogen, potash and lime found in them. However, although they require fully twice as much nitrogen as the cereals, because of the power they have of making use of the free nitrogen of the atmosphere they have comparatively little difficulty in securing the required amount. On the other hand, they have difficulty in collecting potash, as apparently they have not the capacity for feeding on the silicates enjoyed by the cereals; consequently, it may be found that these crops sometimes suffer for want of this constituent on the same soil that cereals would find an abundance.

In one sense it may be correct to speak of the soil as a reservoir of plant food, to be drawn on for the growth of successive crops, but it is more nearly correct to regard the soil as a busy, complex manufacturing establishment, in which all the various parts must work together under proper conditions to bring this store of plant food into a soluble form, or into a condition in which it will be available as food for crops. On virgin soils it is possible to grow, even with indifferent cultivation, a number of good crops; but the supply of soluble food must soon become exhausted if the proper combination of air, moisture, germ life, decaying vegetable matter, etc., are not all working together to break down the insoluble part of the soil, to supply the demands of the crops and the unavoidable losses caused by cultivation.

It is well to bear in mind that a productive soil contains millions of minute organisms, or in other words, that it contains life, and therefore, must have moisture, air and warmth, just the same as animal life, wherever it exists, and that one of the main objects of cultivation is to ensure this.

The presence of air in the soil is essential for the development of the roots of plants, for the oxidation of certain compounds, and for the life of millions of organisms engaged in the breaking down of the organic matter in the soil.

Good drainage, to draw the water out of the inter-spaces and allow free access of air; the presence of abundance of humus, and all the benefits occurring therefrom; thorough cultivation to open up the soil, check evaporation, destroy weeds, etc.,—tend to ensure thorough aeration of the soil, plenty of moisture, and a continuous supply of soluble plant food.

A Dominion legislator who also sports M.D. queried the V.D.G. recently—What distinction do you make between *epizootic* and *epidemic*? *Demos* means people, and *zoon* means an animal. *Epidemic* would be a disease affecting people and *epizootic* a disease affecting animals.

#### Edmonton Summer Fair.

Edmonton Exhibition was held in the capital city from July 1st to the 4th. This is the first show of the season, an indication of the trend of events during the coming summer and therefore is of special interest to the student of agricultural progress. Edmonton

fair has much to commend it; the grounds are ideal, being level and clumped with well grown trees, which furnish shelter to man and beast. The accommodation for stock is good, although further improvements will have to be made before another year. Then, too, the people of Edmonton are loyal to their show, loyal to an extent that should put life into the heart of any director or official. The stores in the twin towns closed at twelve o'clock during the four days and men, women and children turned out to support the fair management.

But there is another side to the shield. The gamblers were on deck again. Despite the lessons of last year they were allowed to work their little games and the suckers still continued to swarm like flies around a jam pot. Of course the directors awoke and the dives were closed—some of them were—but the small boy and the grown man continued to try his luck at the wheel of misfortune and pay out precious coin of the realm, in order to find out how little he could get for it, until the last day of the fair and then it was "closed shop." A number of cheap fakes were in evidence—palmistry, shooting galleries, bloodhounds and pictures—all for one purpose, to show that the fool and his money are soon parted.

One gleam of light there was. The Provincial Department of Agriculture had on the grounds an exhibit of weeds and weed seeds, and from early morning until late in the evening, Arch. Mitchell stood at his post and told the visitors the names and habits of the worst weeds of the Province. Judging from the number who availed themselves of the chance and the keen interest shown the people are awake to the importance of the work. A. W. Foley of the poultry department was also present to give illustrations of trap nests, feeding crates and of the different methods of dressing poultry, but arrangements could not be completed in time and a good thing was missed. This will be at the other fairs. Messrs. Marker, Pierson, and Munroe of the dairy divisions gave demonstrations in milk testing and separator work and Miss Edith Charlton interested the ladies in the mysteries of domestic science.

The live stock features of the exhibition were stronger than usual. The increasing importance of the show is year by year drawing a larger number of exhibitors from outside points, and those in the surrounding districts are strengthening their flocks and herds. Horses were good. John A. Turner was the leading exhibitor. In aged stallions "Consul" went to the head of the list and the Stoney Plain Clydesdale Co. and the Spruce Grove Shire Breeding Co. followed after. Turner got the remaining money in the stallion classes and Fraser and Freeman were first for brood mare with foal by side. She was an animal of more bone and substance than Turner's entry though the latter certainly possessed quality and the colt at her side showed that she had breeding worth as well. Fraser and Freeman had the winning harness team and Turner took the ribbons in the other classes.

The following is the prize list in the agricultural class.

Brood mare with foal by side: 1st, W. Johnston; 2nd, Ludwig Schoepp; 3rd, Petter Gable; 4th, D. P. Varneau.

Filly or gelding, three years old: 1st, E. W. Organ; 2nd, W. J. Garke; 3rd, Chas Henderson.

Filly or gelding, two years old: 1st, Simon Witmore; 2nd, James Kelly; 3rd, Andrew Tingley; 4th, Peter Gable.

Filly or gelding, one year old: 1st, Thomas Briggs; 2nd, James Kelly.

Foal of 1906: 1st, Schoepp; 2nd, Johnston; 3rd, A. J. Trounson; 4th, Gable.

Mare and two of her progeny, owned by exhibitor (silver medal) 1st, Frank Gibson.

There was quite a string of roadsters entered from the surrounding country and a few from outside points. J. L. Lyons won first for aged stallions and Paris of Red Deer got first and second in two-year-olds. E. K. Strathy of Lacombe had a fine gelding and the first for team went to a matched pair owned by C. J. Roberts. The entries in Hackney were not numerous, T. McMillan of Lineham, and J. C. Johnston being the only exhibitors. The championship in light horses was won by Mr. N. E. McAbee of Golden B. C.

A strong string of Shorthorns was the feature of the cattle show. Geo. Little from Manitoba brought a bunch with a number of good winning cows and R. K. Bennet from Rushford Ranch Calgary added interest to the contest in more than one class. In aged bulls Bennet's "Trout Creek Hero" was the winner with Geo. Little's entry second. The call for two-year-olds brought out the unbeaten "Crimson General" and McGill also had the second prize animal in the same class. Wm. Golley was the lucky man in the fight for first among the yearlings. A very smooth and evenly turned chap the winner in the calf class of the year before did the trick. The animal has developed well from the last year and although he looks just a trifle too upstanding at present, gives promise of making something useful. J. A. Turner, McGill and Little followed suit in the order named. In bull calves Little was first, Bennet second with a very smoothly turned chap much younger than the winner of the red, Bennet was also third in this class. "Loise" owned by Little scored first for aged cows. She is a squarely built level cow of straight parallel lines. "Rose of Glen Dale" owned by the same man won out in the three-year-olds. In both these classes Bennet was a close second; "Alexandra" in the four-year-olds and "Carnation 6th (Imp)" in three-year-olds are good company in any ring. Bennet had the best heifer under two years of age and Little, Bennet and McGill stood in the order named for the herd prize. The keenest contest of the day was between Bennet's "Trout Creek Hero" and "Crimson General" for the honor of the championship. "Trout Creek" is eight years old yet bears his years well. Few bulls have weathered the show ring better than the old favorite. "Crimson General" is in the pink of condition and the bloom of youth and finally the latter won although the judge spent considerable time and gave serious consideration to the work. "Trout Creek" turned the scales in the next class winning first for best bull and two of his get.

Jas. Tough was the only exhibitor for Herefords. He had some fine animals but lack of competition spoiled the show from every standpoint. Wake up, Hereford men, you were not slow at the Calgary Spring Show, why not try the Edmonton Exhibition?

In dairy classes W. F. Cameron of Strathcona was the only exhibitor of Jerseys. With stock imported from Dentonia and bred from the best, he too would have welcomed competition. The work of judging was performed with the best of satisfaction by C. M. McRae of the Dominion Department of Agriculture, in cattle; W. F. Kydd of Simcoe Co., for the horse classes and Dr. A. G. Hopkins of the FARMER'S ADVOCATE for sheep and swine.

#### SHEEP.

The arrangement of the prize list for this particular division of the live stock does not give one a fair idea of the sheep exhibit which contained quite a large entry list and some very good ovine specimens. The division into long and short wools is hardly commensurate with the importance of Edmonton's show, or with the quality of the stock shown. The judge was also placed in a quandary owing to some

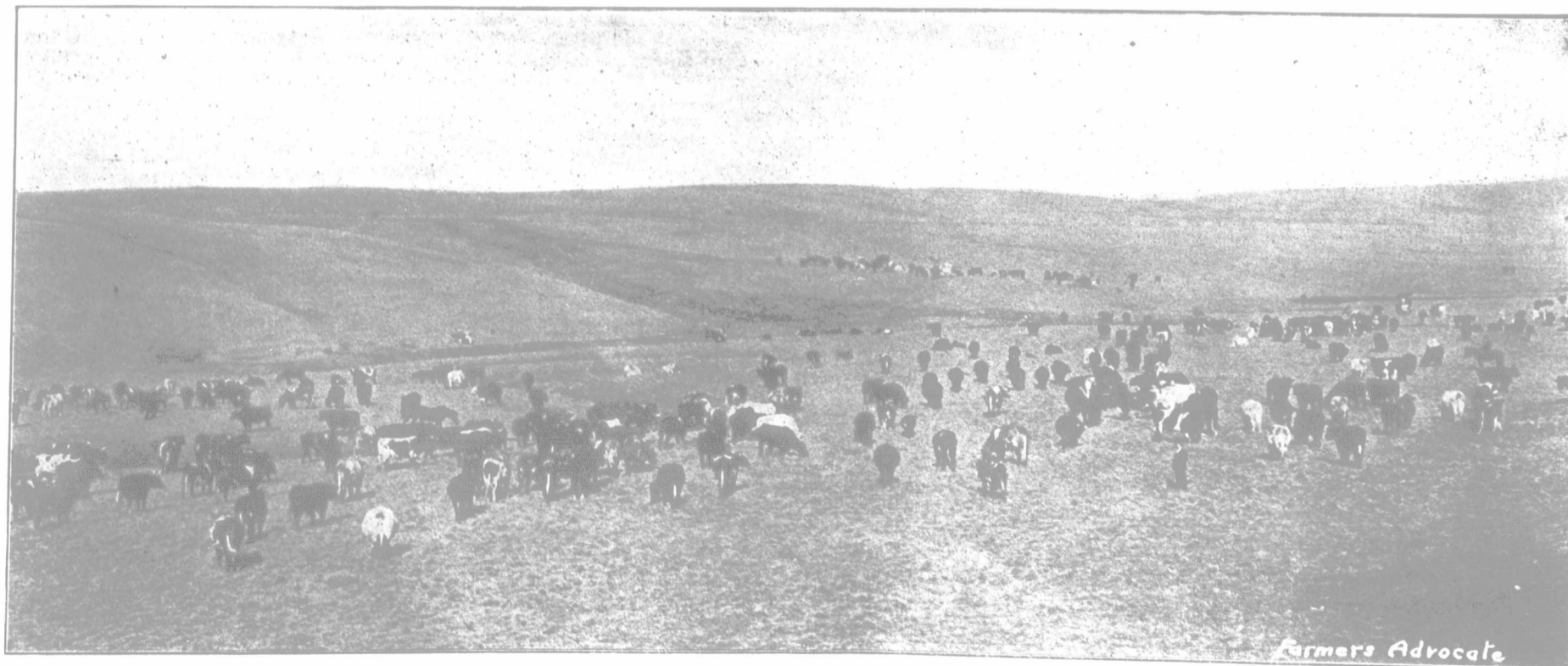


Photo by A. C. Jacobs, Carstairs, Alta.

A LUSTY CONTENTED BUNCH

Farmers Advocate

sheepmen attempting to show grade sheep in the male sections. An improvement would be to make sections for purebreds, say for Leicesters in the Long Wools, and one section for any other variety; then in Medium Wools, sections for Shropshires, and for Oxfords and another section for any other variety should be provided. No provision need be made for Short Wools under which would be listed the Merinos. There seems to be considerable interest taken in sheep, and a class is needed for grade flocks but with purebred rams at the head. The fair board is

stall and has been tried for years. Both the above systems are installed at the C. E. F., Ottawa. The prevalence of tuberculosis in so many herds is we firmly believe due entirely to two things—first, the introduction of an infective animal, second, the lack of proper ventilation in the stables in which it occurs. In the human being, there are other causes in addition, such as overwork, lack of nutritious food and exposure, three causes to which the class of cattle most

profitably to keep the animals free from exposure to draughts, but at the same time with a plentiful supply of pure air. The system which I have discovered is practically automatic, it works exactly on the principle of a stove, taking into consideration that the source of the heat consists of the animal emanations only and the first necessity is a chimney. As the air in the stable becomes foul it becomes warm and it ascends to the ceiling where it is taken off by the chimney. Now, the ordinary architect who has been employed in the construction of dwelling houses will tell you that foul air is heavier than pure air and that, to ventilate properly, the latter should be taken off at the floor. He is quite right, foul air is heavier than pure air in that case, because you have artificial heat, and the foul air will fall to the floor if a plentiful supply of pure warm air is introduced into the room. But in the stable you have no artificial heat and consequently as the air gets foul it gets warm and rises, and it passes out through this chimney. A partial vacuum is created in the stable by the air going out, and nature, as we all know, abhors a vacuum. If you have no other opening in the stable as is too often the case a certain amount of hot air will pass out through the ventilator, and then for a certain time, there will be a beating down of cold air to take its place below which creates a disagreeable down draught not only unhealthy but opposed to the sound principle of ventilation, that the outlet must be always an outlet, and an inlet must be always an inlet. If at any time an inlet becomes an outlet or an outlet becomes an inlet your ventilation is out of order and it is not to be relied on. Having our flow of foul air started through the chimney we want to provide a means to bring in pure air to take its place. That is done by a series of what might be termed 'U' pipes, in the old country these pipes are used extensively for various purposes but they are hard to get in this country, and their place is very well taken by a wooden box. We will suppose by way of illustration that A is the wall of the stable and B the foundation, C is the floor level, and D is the box that goes down, from the outside, and comes up on the inside, the deeper the better because there is less tendency to be influenced by wind pressure, therefore less tendency to draught and the air is slightly warmed as it goes through the soil. On the outside in this country where the snow has to be reckoned with it is often advisable to bring the box up against the wall, putting a little board on the top, and leaving the inside open, E at a certain distance up, so that the air can get between the building and the box. As the foul air is taken off from the inside by the chimney, the pure air is sucked in through these pipes which should, in their combined diameter, be a little larger than that of the chimney, so as to make the process more gradual at the intakes than it is at the outlet. By this method the air is sucked in, there are no draughts, the wind has no effect and the process is really automatic. The opening in the floor is protected by iron grating which may be countersunk and left movable to admit of cleansing the pipe. We will have the objection taken by some gentlemen



A FARM IN THE LAST MOUNTAIN VALLEY, SASK.

quite liberal in prize money and are fortunate in their energetic director Thos. Daly. The Long Wools were grades and were not remarkable for quality, being off the grass and with long tails. There was a different story to tell in the Medium Wools (the Oxfords and Shropshires), the Balgreggan shepherd brought out typical specimens of the breed in nice bloom and while in some cases, the opposition entries were good in conformation, the fitting of the winners was sufficient to place them in the lead. In Oxfords, Boyd, Lacombe, had some good sheep but not as highly fitted as his more successful competitor.

SWINE.

As is to be expected in a section of a province so well suited to mixed farming, dairying and swine raising, there was a pretty good exhibit of swine, more especially of the bacon breeds, Berkshires, Tamworths and Yorkshires; the interest had been stimulated by the generous prizes offered in the various classes. Some of the rulings of a year ago were reversed, the judges adhering to the bacon type, whereas the previous year there had been considerable leaning to the short thick hog, with results that showed all down through the classes. In spite of this some very good individuals were shown, the competition being keenest among the Berkshire men. Berkshires, boars over a year, went to P. Hekko's (Clover Bar) Prince 12060, second to J. P. Morkin's (St. Albert) Clover Lodge Pat 14297; in section 2 Morkin had it to himself with Neepawa Corporal 15077, one of McGill's breeding. Hekko again got to the front with Lady Togo a smooth sow, beating her competitors especially in muscling along the back and spring of rib, Clover Bar Ruberta (W. F. Stevens) being second, third going to Morkin on Clover Lodge Queen. Morkin got the red in sow under a year with a smooth pig. In brood sows with litters, Stevens got first and second with the year old sows Penelope 15992, and Portia 15993 respectively, Morkin getting third with a Clover Lodge matron; boar and three of get Hekko annexed, Morkin being second, the male breed sweepstakes also went to Prince, the female to Morkin's Neepawa Jessie. Yorkshires were not a stiff class although some good animals were shown. Tough having the sections to himself. Chester Whites were nothing extraordinary, Seaman (Strathcona) being alone. The Tamworth section was strong in males, furnishing the interbreed champion for the silver medal of the Alberta Swine Breeders' Association, in Quebec's Better Times 3649, his son Myfellow 4409 being forced to be content with second place, Seaman (Strathcona) being the only exhibitor down through the sections. In the C. N. R. specials for six bacon hogs, Tough was first and third with some Yorkshires, and D. Brox, Sprucebank, getting second with some cross bred. Tough also won first for the best three bacon hogs, purebred.

Ventilation as a Preventive of Disease.

Our readers will remember that some time ago this paper published an illustrated description of the Grisdale system for stable ventilation. Being fully seized of the importance of fresh air for live stock, especially horses and cattle, which too often we regret to say in the majority of farmer's stables suffer for lack of a regular supply of fresh air and windows, we publish the Rutherford system, which is very simple, inexpensive to in-

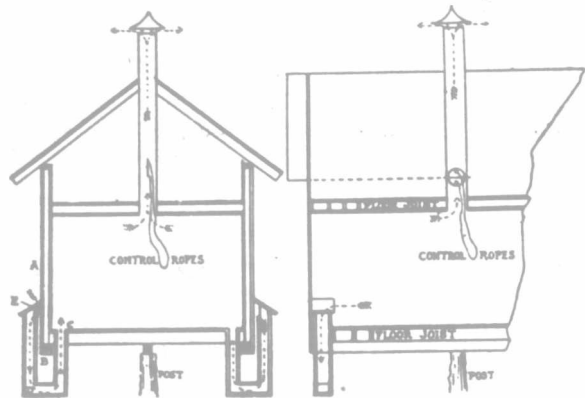
affected are never submitted. It is, therefore, a comparatively easy matter to stamp out such a disease as tuberculosis in bovines, if people will only be less afraid of fresh air, which in many farmers seems to cause as much terror as soap and water to a street gamin:

"A great many dairymen and a great many cattle feeders, think that unless they can keep the stable to 60° or 70° in any weather they are going to be heavy losers, the dairymen in the flow of milk obtained and the cattle men in the flesh forming proclivities of the animal. Well, this room here is a very large and a very lofty room, and it is very much better constructed than the ordinary stable; that is to say there are fewer ordinary apertures, unintentional apertures, than would be found in the average stable. I would like to ask any member of this committee, Mr. Chairman, what sort of an atmosphere he would be breathing if he formed one of a sufficient number of men put into this room on a winter day when the thermometer was in the neighborhood of zero, without artificial heat of any kind, to maintain the temperature of this room at 70°. Now, that is exactly what is happening in the ordinary stable. It is nothing unusual when the thermometer is away below zero, to find stables without any artificial heat whatever, at a temperature of 70°. The animals in that stable are breathing and rebreathing an atmosphere absolutely indescribable. That is what is going on, and the object of that experiment to which I have already referred, is to show that it is possible



HOME OF F. FRASER, P.M., GLENORA, MAN.

that you may reduce the temperature of the stable too much. Well, that is quite true in very cold weather, and that worried me for a while at first, until I struck the idea of the back damper in the stove pipe and I put a damper in my chimney, controlled by cords brought down at the side. Suppose you have a stable with forty animals in it, and you want to turn out thirty-five of them and leave five in. With



RUTHERFORD SYSTEM OF VENTILATION.

only five animals you do not require the air in the stable to be changed with anything like the same rapidity as you would for forty animals. You then partially close your damper, and the air does not go out so fast, and it does not come in so fast. If you are leaving one animal in the stable and it is intended for forty, it does not require any particular change of air, and close the damper altogether, and the remarkable thing and the best feature about this system of ventilation is that whenever you close the damper you automatically stop the intakes. That is exactly on the same principle as the kitchen stove, when you turn back the damper in the pipe you will find that there is no draught in front at all. You can tell in a moment when the damper is closed, you can hold your hand over the intakes, and find that they are closed also. In the United States, in England, and in Scotland especially, where people are generally more intelligent than elsewhere in regard to such matters, I have seen long rows of little doors, moved by a lever which it took a strong man to manipulate, in order to shut off intakes below. The builder never thought of simply shutting the one above but that is all that is required to stop this system of ventilation from working.

## HORSE

Fly nets for the fly days.

\* \* \*

Geo. Pepper's string of fancy leather, high jumping hunter and saddle horses will be seen at the Winnipeg exhibition.

\* \* \*

In some sections of the show the judge will pass right by one of your best exhibits and in another he will hand you out a prize, then you surely don't think that judge doesn't know what he is about.

\* \* \*

The foal is getting bigger and the grass shorter, see to it that the mare's milk does not fail too quickly

\* \* \*

The stock a horse leaves may be a disappointment to his owners but it is not often the case with a horse having a long and authentic pedigree.

\* \* \*

Glanders are still to be found in many districts there will have to be some strenuous work, careful disinfecting of stables before this disease is entirely stamped out.

\* \* \*

Unbroken range horses are being taken east, and eastern work horses are being brought west. Is it because we have no time to break horses?

### Mange in Horses.

Unfortunately the various forms of skin diseases show in their inception general symptoms which mislead people or disarm suspicion. In horses two forms of skin disease are often confounded, whereas the relative importance of these diseases makes it imperative that their true nature should be understood at the beginning. It may be taken for granted that mange is due to a parasite and is extremely contagious, once that fact is thoroughly appreciated some advance has been made towards its suppression. This disease has unfortunately become more or less prevalent in some sections of Canada, due largely to the fact that its contagiousness, and therefore, serious nature was not fully appreciated.

#### THREE FORMS OF MANGE.

1. The most common form of mange insect is psoroptes, which chiefly invades those parts that are covered with "horse-hairs," and consequently infest the mane and tail, from which they may spread to the space between the branches of the lower jaw, the breast and thighs. As they live in colonies, their seat of attack may at first be within narrow limits, which gradually extends outwards. In this way, the invaded portions of skin become united, until a considerable surface is implicated. Owing to the more settled habits of these parasites, this kind of mange is not so contagious as the second (sarcoptic) form. The punctures made on the skin by these insects give rise to an eruption of small pimples, which at first are the nature of blisters. When these blisters burst or are broken by friction a discharge of serum and pus issues from them and keeps the affected parts in a moist condition, which serves to distinguish this kind of mange from sarcoptic mange. The parasites live on the

Consequently, by the time a pimple forms at the inoculated spot, the egg-bearing parasite has left it, and cannot be found if a search be made for her in the pimple, vesicle, or scab. In a white-skinned human subject (affected by itch), the position of the characteristic gallery is marked on the skin by a red line, which somewhat resembles the scratch of a pin; but it is not visible in the skin of a horse, owing to the thickness of the scarf-skin of that animal. If a pin be pushed into the gallery, the parasite can be removed at the point of the pin. The male parasites (which form only about a twentieth of the entire number), the unimpregnated females, and the larvae reside among the crusts on the skin. Although the disease may be fully established on some portions of the skin, which will consequently become thickened, thrown into folds, and bald; it may be in its first stages on other parts, upon which the grain-like eminences made by the newly formed crusts, can be felt among the hairs of the coat. The disease takes from one to two months to become fully established. Rubbing the affected surface, and manifestation of pleasure when the mangy spots are scratched with the fingers, are prominent features of the complaint.

3. The insects of the third form of mange are called symbiotes. Their invasions are confined practically to the legs, and extend very slowly from one part to another. They commence their attack at the back of the pastern, and work upwards; but rarely go higher than the knee and hock, and are seldom found except on coarse, hairy-legged animals. They affect the hind limbs oftener than the fore, and those of young horses more frequently than those of old ones. Strange to say, they manifest their presence as a rule only during winter; the probable

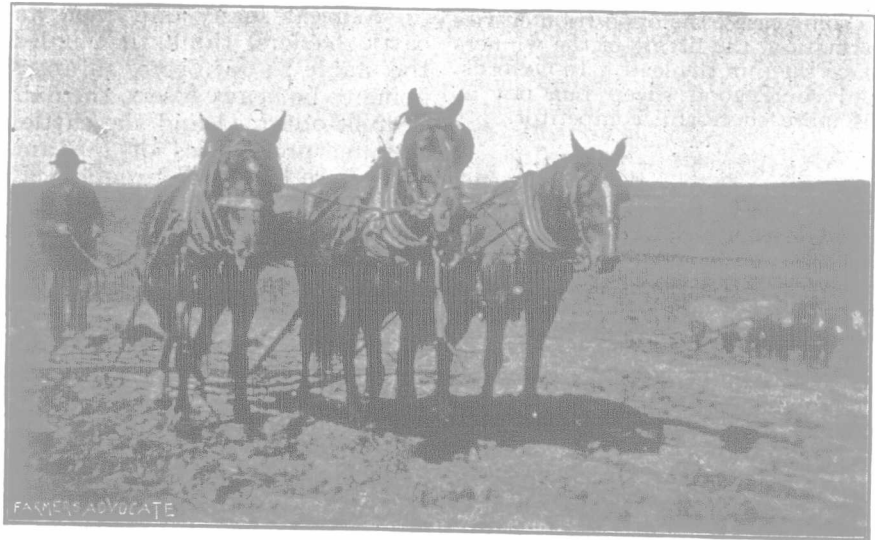


Photo by W. Way, Okotoks. THE PASSING OF THE RANGE.

surface of the skin and under the crusts which are formed by the drying up of the fluid from the pimples and by the scaling off of the scarf-skin. Owing to the irritation caused by the wounds made by the insects and by the animal rubbing himself, the skin becomes thickened, hardened, wrinkled, devoid of hair, and more or less covered with sores.

2. The insects (sarcoptes, itch parasite of man belongs to same class) of the second form of mange generally commence their attack on or near the withers, from which they spread over the neck and trunk. Their punctures cause an eruption of small pimples which become filled with serum that soon dries up and forms crusts over the pimples. On this account, when the affected skin, during the first stage of the disease, is felt by the fingers, it presents to the touch a number of granular eminences. If one of the crusts is scratched off, it will leave on the skin a raw spot about the eighth of an inch in diameter. As the serum contained in the pimples dries up quickly, the skin in this form of mange will present a dry appearance.

The scarf-skin scales off more or less, and the hair falls out. In the later stage of the complaint, the skin becomes thickened, rough and wrinkled. Vertical wrinkling of the skin, neck, shoulders, and sides is always present in advanced cases of sarcoptic mange. Each pimple is the result of a pregnant female parasite penetrating the scarf-skin, and irritating the underlying sensitive tissues with her venomous saliva. She then burrows underneath the scarf-skin and away from her point of entrance to a distance of about half an inch, so as to form a tunnel or gallery, in which she lays her eggs as she goes along.

reason of this being, as explained by Neumann, that the excretions from the skin during the summer are sufficient for their nourishment. Possibly for a similar reason, namely, that the skin is more active during work than during repose, the horse suffers more from their attentions at the latter time, than at the former. The symptoms are: itching, the formation of crusts, cracks and sores, thickening of the skin, and falling out of the hair. When the pasterns are affected, the symptoms may resemble those of grease or grapes. "At the commencement of the attack, the only important symptom which attracts attention, is the habit which the mangy horse has when he is at rest, of abruptly striking the ground with a hind foot for hours at intervals and especially during the night. Some horses kick. All scratch and bite the fetlock." (Friedberger and Frohner).

#### ERUPTION.

The nature of the eruption is due to the venomous bites of the insects and to friction in the efforts made by the suffering animal to relieve itself from the itching by scratching or rubbing itself.

The second form is the most contagious; the parasites of the first form may live under favorable circumstances two months, of the second form one month. The eggs take from two to ten days to hatch, and remain fertile for a month.

#### TREATMENT NEEDED.

Mange, especially of the first two forms, does not run on to spontaneous recovery hence vigorous measures are necessary for its suppression. The second form has a very bad effect on the health in some cases resulting fatally, owing to the debility caused by the continual bloodsucking

and irritation of the parasites. In order to find the insect it is necessary to scrape the surface of the skin of the affected spots with a knife and examine with a small magnifying (50 diameters) glass in the warm sun. The second form is apt to be mistaken for skin trouble due to poultry lice.

TREATMENT.

Clipping of the coat is almost essential, wash the affected parts thoroughly using the ordinary carbolic soap and a brush, or use soft soap and warm water in which is an ounce of soda carbonate to the quart. Afterwards apply any of the coal tar dips as advertised; continue the treatment every two or three days for two weeks. Disinfect the stable stalls, etc. with hot lime wash, containing either one ounce of crude carbolic to the gallon or corrosive sublimate half an ounce to the gallon of lime wash. Wash all the harness used in warm dip solution.

Light Horses: Origin and Characteristics.

THE THOROUGHBRED.

There is probably no word or term so much used and so often misused in connection with live stock as the word "Thoroughbred." It is used to express purity of breeding in the different classes of cattle, sheep, swine, dogs, cats, poultry, etc. We read and hear of thoroughbred Shorthorn and other breeds of cattle, thoroughbred sheep dogs, chickens, etc. It is all wrong. The simple statement that a cow is a Shorthorn, a Devon, a Holstein, etc., or that a sheep is a Southdown, etc., implies that the animal is registered or eligible to registration in its respective stud book or register. When its purity of breeding needs to be emphasized, it should be stated that the animal is a purebred Shorthorn, etc. The word Thoroughbred can be correctly applied only to one class of animal—the horse under discussion in this article,

the purebred descendant of the English race-horse, one that is registered or eligible to registration in the English Stud Book.

The Thoroughbred is especially a British production. At a very early period the attention of the rulers of Great Britain was earnestly directed to the work of improving the breeds of horses of that kingdom. These horses were deficient in size, and the earliest efforts were directed towards improvement in that particular by the importation of horses from Normandy, Flanders and Germany.

The idea of improvement commenced with the conquest of the islands by the Saxons; but it was many years before there appears to have been any clearly-defined or well-settled purpose, the object at one time appearing to be an increase in size, by the importation of heavy horses, and again, to give gracefulness of action and beauty of form by the introduction of what is known as "Oriental blood," that of the Arab, the Turk and the Barb.

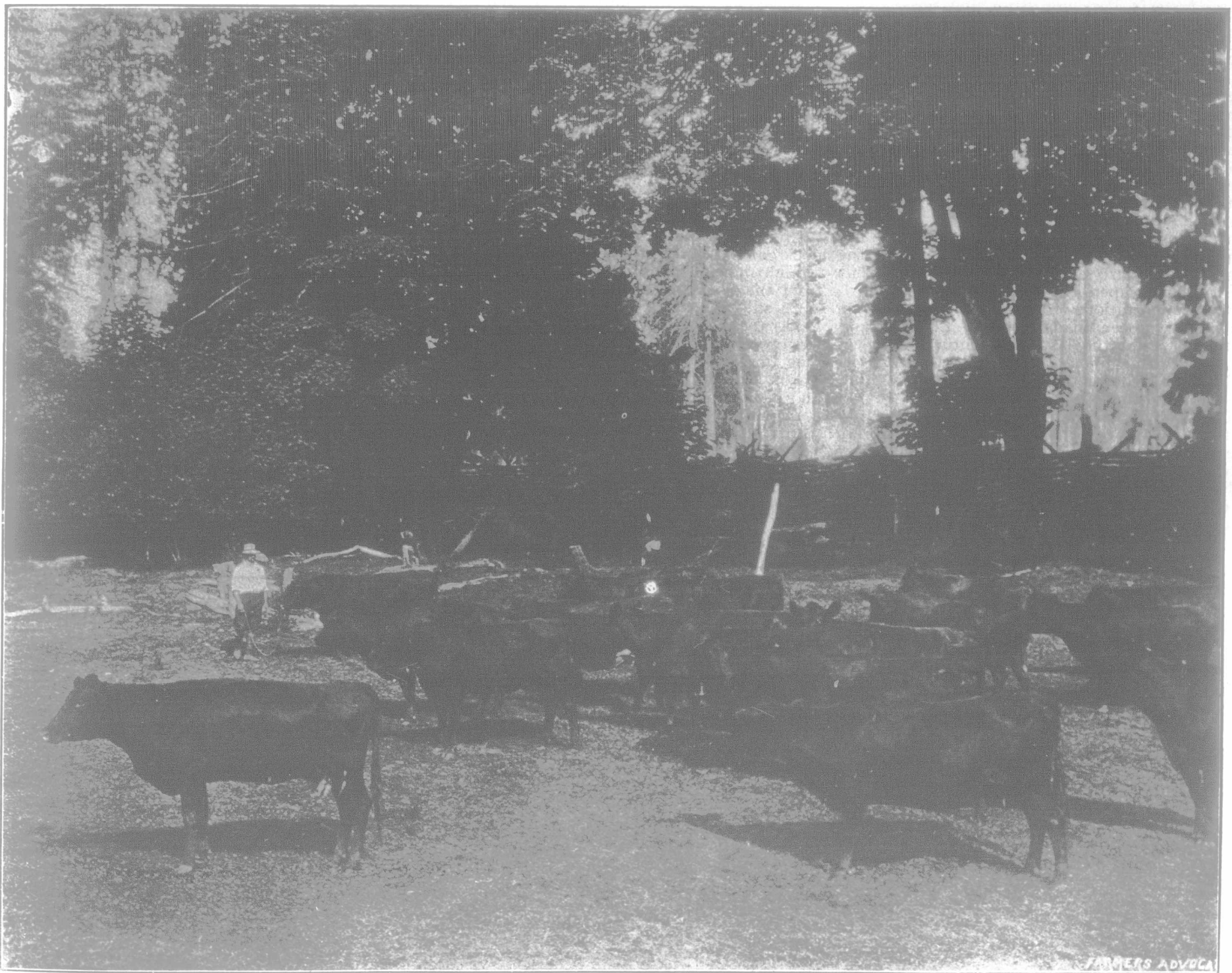
For several years preceding the reign of King Charles II., horse-racing appears to have been rapidly growing in favor as an amusement and recreation among the English people, and from that time until the present, contests for supremacy upon the turf have stirred the British heart as no other sport has ever done.

To the constant growth and great popularity of this sport, which for more than 200 years has been regarded as the national amusement of the country, are we indebted for persistence in a course of breeding which has given us the race of horses so prominently distinguished throughout the world for speed and endurance upon the race-course, and which, on account of the great care taken in their breeding, and their consequent purity of lineage, have attained more marked individuality and greater prepotency than any other breed, and are called "Thoroughbred."

The foundation upon which this well-established breed was built was a somewhat promiscuous

mingling of the native horses of Great Britain, first with the larger horses of Europe, especially of Flanders, Normandy and Germany, and subsequently with the lighter, more agile and graceful horses of Spain, which were almost identical with the Barbs. Frequent importations were also made from Egypt, Morocco and Tunis, also from Arabia and various parts of Turkey, until this Oriental blood, to a marked extent, permeated most of the stock of Great Britain, excepting that bred especially for agricultural purposes. So thoroughly had the passion for turf sports, or horse-racing, taken possession of the English people, as early as the reign of King Charles II., that ability to run and win a race was regarded as the principal test of merit in horses, and those most successful on the turf were most highly prized for breeding purposes. From that time to the present the selection of breeding stock has been constantly made with this as a primary object.

In the last half of the seventeenth century, breeding for speed and endurance upon the race-course began to be conducted upon a somewhat definite plan. The records of turf performances were carefully kept, special attention was paid to the pedigrees of horses designed for the turf, and an aristocracy of blood came to be recognized in the horses of England. Charles II. sent his "Master of the Horse" to the Levant for the purpose of purchasing horses with which he proposed to found a breeding stud. His purchase comprised three famous Turkish stallions and some mares that, in the equine literature of the day, were called "Royal Mares," and these mares are by many supposed to be the foundation of the Thoroughbred. This is, however, not strictly correct, as there were several other mares introduced from the Orient, and the produce of many mares not descended from nor related to the "Royal Mares" have distinguished themselves on the turf, and are recognized as Thoroughbred.



ON R. E. BARKLEY'S RANCH, WESTHOLME, B.C.

ENDED 1866

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About the middle of the eighteenth century the publication of the "English Racing Calendar" was commenced. In this the names and performances of all horses that participated in the regular races were published, and in a very few years it became the custom to give, also, the name of the sire in each case. This publication has been continued, with little change in form or matter, to the present day, and the record of performances and the names of performers therein contained furnished the basis of the English Stud Book.

A collection containing the pedigrees of all distinguished horses that could be obtained was published in 1786. Subsequent to this, attempts at a compilation of pedigrees from the racing calendar and other sources was made, but it was not until 1791 that the English Stud Book took its present form.

The standard of admission to the first volume of the Stud book appears to have been simply creditable performance upon the turf, as shown in the "Racing Calendar," it being taken for granted that no horse could be a creditable performer that was not well bred. The first volume, compiled upon this basis, has furnished the foundation of all subsequent ones, and few mares have been admitted to registry that do not trace on both sides, without admixture, to an ancestry that is recorded in the first volume, or to subsequent importations of Oriental blood.

It is the general opinion of the best-informed English turfmen that the Oriental stallions which contributed most largely to the formation of the English Thoroughbred were Place's White Turk, the Byerly Turk, Lister's Turk, the Barley Arabian, Curwen's Barb, Lord Carlisle's Turk, the Godolphin Arabian, the Leeds Arabian, Honeywood's White Arabian, Combe's Gray Arabian, Bell's Gray Arabian, D'Arcy's Turk, Selaby Turk the Ancaster Turk, Compton's Barb, the Toulouse Barb, Stanyan's Arabian, Louther's Barb, Taffolet Barb, Hatton's Gray Barb, Honeywood's Arab, Sedley Barb, and Wellesley's Arabian. Of these, Lister's Turk got Brisk and Suske; Darley's Arabian got Flying Childers; Carlisle's Turk got the Bald Galloway, and Godolphin Arabian got Blank, Regulus and Code.

The "Royal Mares" were imported Barbs. Of these Oriental sires it is generally admitted that the Godolphin Arabian, imported about 180 years ago, is the last that has proven of any benefit to the English stock, and, while this blending of the blood of the Orient furnished the foundation, there cannot be any doubt that the care and skill of the English breeders in selecting and coupling with the stoutest, best and fastest for successive generations, has been a more potent factor in the formation of the breed as it now exists than the Arabian and Barb blood to which tradition has ascribed its superiority.

Many importations of the choicest blood of the Orient have been made both to England and America within the last half century, and yet scarcely a name among them can be found in the pedigree of a horse that has distinguished himself upon the turf.

The Arabian horses possess undoubted beauty of form and grace of action, but are inferior in size to the average Thoroughbred, and their produce from the best mares have been failures both in the stud and on the race-track. In every instance where the speed and endurance of our Thoroughbreds have been tested side by

side with the Arabian, they have proved superior. Hence, recent crosses of Oriental blood, while they do not exclude from the Stud Book, are not looked upon with favor by the best breeders of England or America. The Thoroughbred of to-day is greatly superior to his Oriental ancestor in size, speed, endurance and other useful qualities, excepting, possibly, beauty and docility.

The Thoroughbred, having been bred for so many generations with especial reference to speed, we are not surprised that he has acquired characteristics of form and temper that in most cases render him undesirable for the uses of every day life. He has been bred to race, and the form best adapted for speed, and the mental qualities which most certainly ensure the pluck, courage, energy and determination so essential to success in a hard-fought race, have been the qualities aimed at by breeders, and the standard by which selections have been made.

Such a course of breeding has made him rather too lithe and light of form, and too nervous, excitable and impetuous for ordinary business purposes, but in speed, endurance and resolution he surpasses all other breeds, and there is scarcely a race of horses in existence, except draft horses but many be improved by an occasional infusion of his blood. This fact is almost universally recognized, and nearly all countries have for many years regarded the "English Thoroughbred" or "Blood Horse," as the basis of all subsequent improvements.

#### CHARACTERISTICS OF THE THOROUGHBRED.

In general appearance, he is full of quality, without the flash appearance and action of many breeds of harness horses. There is an absence of bulkiness. His bones, muscles and tendons are strong and very compact; not so massive, but harder and of finer quality than in other breeds.

Head.—Rather small; ears fine and pointed, with lively movements, tips approaching each other when pointed forward; cranium prominent; forehead broad and flat; eyes prominent, large, bold, but not vicious in expression; nostrils large and flexible; lips firm, muzzle small and tapering; muscles of cheeks small and hard; jaws wide apart at angles.

Neck.—Clean-cut and rangy; crest well developed and whipcordy, but not so heavy as in other breeds; head neatly attached to neck, but not too fine at throat. Except in very fat stallions, there should be a well-marked depression where the neck ceases and withers commence.

Withers and Back.—Withers well developed, high and fine, and sloping gradually to the back; back straight and rather short; loins broad and strong.

Croup.—Rather long, and slightly sloping; dock coming out high up, fairly well clothed with straight hair of fine quality, and carried well out from the body, and straight.

Chest.—Somewhat cone-shaped, broad base behind, apex between the shoulders, where he is narrower in proportion than other breeds; ribs long and well sprung, deep from above downwards, especially at the girth; breast muscles hard and projecting prominently forward.

Shoulder.—Quite oblique from above downwards and forwards; muscles hard and well developed, but not bulky.

Forearm.—Long and strong, with muscles extending well down the limb.

Knee.—Straight, clean and large in all directions.

Knee to Foot.—Cannon short, broad, clean and flat; ligament and tendons prominent and well defined, an absence of long hair; fetlock joint large and strong; pasterns rather long, and of medium obliquity. Limb must not have too much of a pinched or tied-in appearance below the knee.

Foot.—Rather small and round, strong wall, sole slightly concave; frog well developed; heel broad, strong, and not deep. Must stand without turning toes either inwards or outwards.

Haunch, or Upper Thigh.—Broad, strong and muscular; all muscles well defined; thick through hams.

Stifle.—Strong and clean.

Caskin, or Lower Thigh.—Long and strong, with muscles well defined, and extending well down towards hock.

Hock.—Deep and strong in all directions; clean and angular, posterior border straight, point well defined.

Hock to Foot.—Same as knee to foot, but bone wider and flatter than fore cannon, and not pinched below hock.

Foot.—Same as fore foot, but rather narrower and longer, and he stands with toes turned slightly outwards.

Color.—Bay, brown, chestnut, black or gray, with reasonable modifications. Reasonable white markings not objectionable.

Skin.—Soft, mellow, loose; hair fine, straight, and silky.

Temperament.—Mild, not vicious, energetic, inclined to be impetuous, not too nervous.

Action.—Prompt, free, elastic, good walker, free shoulder action, not too much knee or hock action, but going rather close to the ground, especially in the canter or gallop. Must not paddle or roll fore feet, or go close enough behind to interfere, neither may he go wide behind.

Weight.—Say, 1,000 to 1,300 pounds.

Height.—Say, 15½ to 16½ hands.

"WHIP."

#### A Disease of Horses New to Canadians.

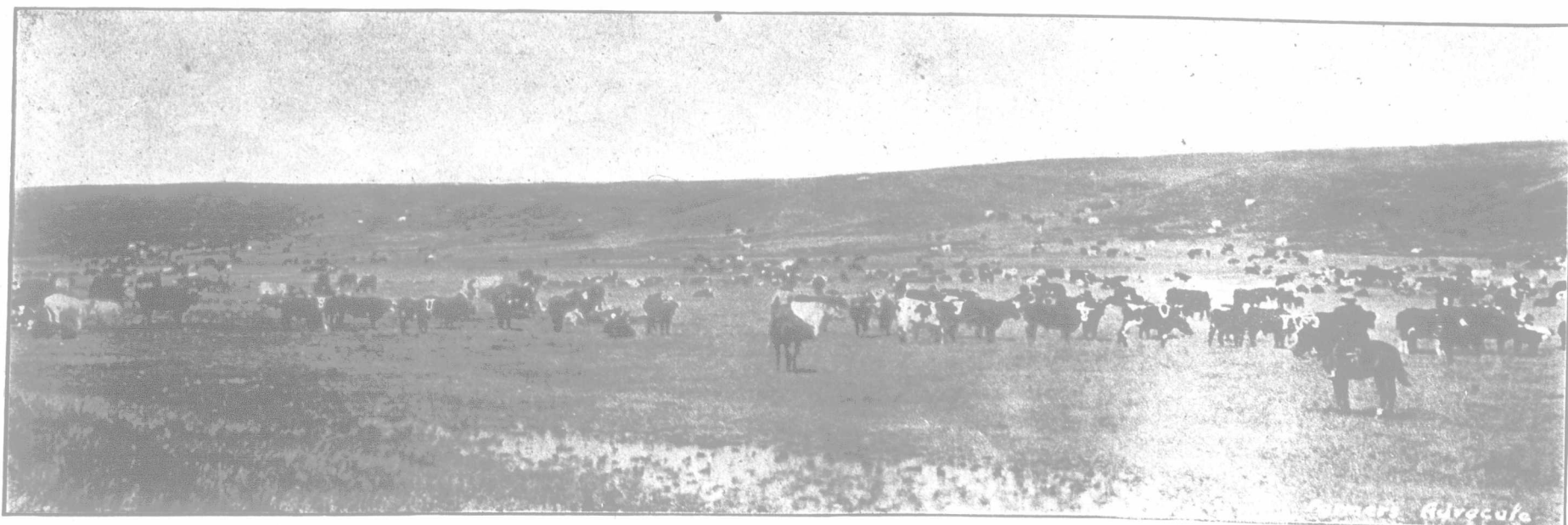
##### EPIZOOTIC LYMPHANGITIS.

It is doubtful if this disease is known to Canadians outside of the veterinary profession, and to them through their scientific periodicals. This disease has been prevalent in the south of Ireland but has been suppressed. A western veterinarian recently enquired regarding the history and symptoms of this disease. The *Farmers' Gazette* has the following in a recent issue:

"The disease is both contagious and eruptive, and is due to a specific organism known as cryptococcus farciminosus. The following description is by a veterinary authority attached to the Board of Agriculture:

"The characteristic symptom of the disease consists of a swollen condition of the lymphatics of the skin on the inside of the hind legs, but the same condition may also be present on the side of the neck or on the body. In most cases small nodules, which vary in size from a pea to a hazel nut, will be found, which eventually burst and discharge a small quantity of a purulent fluid containing an organism, the cryptococcus, which is the cause of the disease. The organism under the microscope appears as an ovoid body, with a double contoured envelope and highly fractile contents."

From the clinical symptoms, the same authority adds, epizootic lymphangitis may easily be mistaken for farcy, a form of glanders; but the detection under the microscope of the cryptococcus, which is the cause of the disease in the discharge from some of the ulcers,



IN THE CATTLEMAN'S LAND, PINE COULEE, ALTA.

will serve to differentiate the disease, or the Mallein test may be applied. The late Professor Nocard affirmed the Mallein test was the only method by which one disease could be distinguished from the other.

A general account of the symptoms characterises the disease as follows:

"The eruption appears on the legs, the neck, the head, or any part of the body. Usually it starts near a wound through which the microbe has entered the tissues, but the ulcers often do not appear for months after the wound has healed. The lymph vessels in the skin stand out prominently, and small hard nodules about the size of a hazel nut appear on their course. These nodules supurate and discharge a thick yellowish pus. Proud flesh grows from the wounds, the lymph vessels around become inflamed and the eruption gradually extends. A thick, yellow scab may form over a patch of ulcers. The neighboring glands are swollen and hard. The ulcers heal with difficulty, even under treatment, and they may break out again after an apparent cure has been effected. The ulcers may appear inside the nostrils but this is not so common as in the case of glanders. In epizootic lymphangitis the glands under the jaw may also be enlarged as in the former disease, and a discharge may appear at one or both nostrils. If taken in the early stages this disease is curable, but after an advanced stage is reached treatment is hopeless. In the latter case the animals emaciate and may die of exhaustion. The disease is distinguished from farcy (glanders) by the presence of the cryptococcus in the pus, and failure of the Mallein test to produce a reaction. Both glanders and epizootic lymphangitis may be present in the same animal. On post mortem examination one usually sees little beyond what is seen during life, but occasionally abscesses are found in the internal organs."

## DAIRY

### Cowtesting for Farmers.

One of the best movements ever instituted is that by the Dominion Department of Agriculture for the purpose of aiding the farmer to find the profitable cows in his herd and help him discard the cow-boarders or unprofitable ones. Dairy Commissioner Ruddick has issued the following lucid instructions for cow-

testing which we take pleasure in presenting to our readers, who may be desirous of improving the quality of their herds and who wish to turn previous losses into profits:

#### INSTRUCTIONS FOR TESTING INDIVIDUAL COWS, WITH SOME NOTES ON THE USE OF THE BABCOCK MILK TESTER.

"Cow-testing associations are being organized, and it is hoped that many cows will be tested at the cheese factories and creameries, but it is quite practicable for any farmer to do the work himself if he cannot have it done in any other way.

To weigh and sample the milk for testing, the following outfit is required:—

	Probable Cost.
A straight spring scale (fig. 1), capacity 40 pounds .....	\$1.25
(A circular spring scale (fig. 2), costing about \$3 is more convenient.)	
A sample bottle for each cow (fig. 3) ..	5 to 10c. each
A sample dipper (fig. 4) .....	10c. each
A box for holding samples (fig. 5) .....	75c. each
1 package of 500 preservative tablets ..	75c.

One of the blank record forms should be posted in the stable, on a board with a pencil attached, in a convenient and well lighted place; the spring scale should be suspended close by.

The weight of milk may be taken and recorded in the morning and evening of three days during the month at intervals of ten days (for instance, January 10th, 20th and 30th), and the totals of these six weights multiplied by ten will give quite closely the total yield of milk for thirty days.

#### TAKING SAMPLES.

Immediately after weighing each cow's milk, pour it into another pail, and while the milk is still in motion take one dip of milk with the small dipper provided for the purpose and pour it into the sample bottle, which bears the number corresponding to the cow. This will make six dips of milk in each bottle during the month, from the six different milkings of each cow. The cap should be kept well screwed on the bottle, to prevent evaporation.

**Caution.**—Keep the box containing the test samples undisturbed in a cool place and always safely locked to prevent access of children or other inquisitive persons, as the preservative to be used in the milk is generally a DEADLY POISON.

Mix the milk in the test bottles every time a fresh sample is added, by giving the bottle a rotary motion.

One preservative tablet should be placed in each sample bottle before the first sample of milk is taken.

If six milkings a month are to be recorded as herein advised, the percentage of fat in the composite sample may be ascertained after the sixth sample is taken, and the yield of butter fat readily calculated. To obtain the approximate yield of butter, add one-sixth the quantity of fat. Thus if the six weighings during the thirty days are 16, 15½, 16, 14½, 15 and 15 pounds respectively, the total of 92 multiplied by 10 will give 920 pounds of milk, which, testing 3.6 will yield 33.1 fat, or if one-sixth be added, a total yield of 38.6 pounds of butter for the month.

#### TESTING THE COMPOSITE SAMPLE.

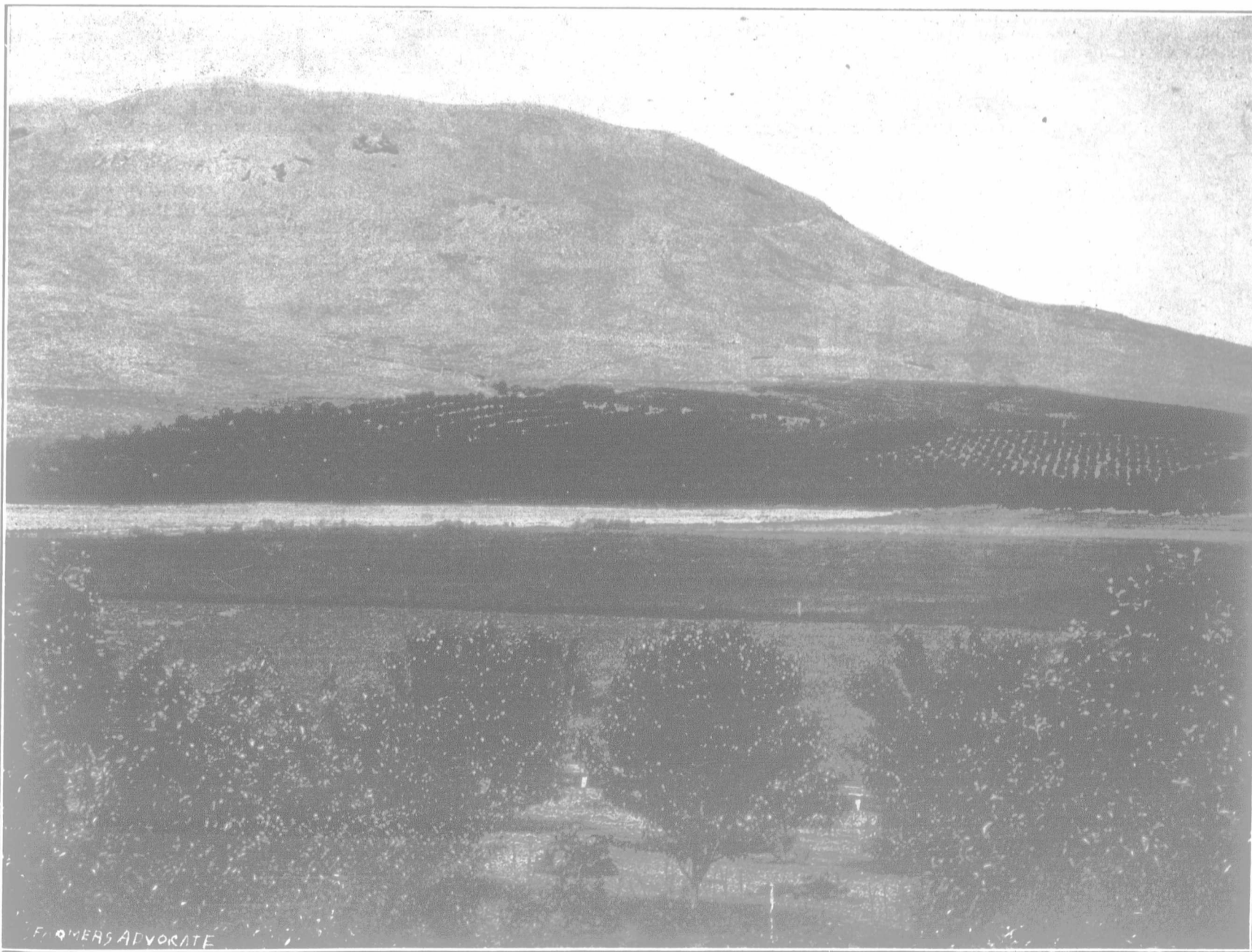
Up to the present time no simpler or more accurate method of testing for fat has been devised than the well-known Babcock milk tester. With a little practice there is no reason why the careful farmer (or some methodical member of the household) should not do his own testing satisfactorily.

A two-bottle machine is the smallest made, and costs about \$4.50. Other sizes are for 4, 6, 8, 10, 12 and 24 bottles. Where steam is available the steam turbine tester will be found the most convenient and satisfactory. About 45 pounds steam pressure is required to operate a turbine tester.

It is advisable to mix any cream that may have risen on the composite sample, by pouring the milk carefully two or three times from one bottle to another. Do not shake it, or partial churning may result. The test is worse than useless, quite misleading in fact, unless the cream is thoroughly mixed with the milk, and the sample taken is a fair average of the milk to be tested. Some samples may require to be warmed in hot water to about 110 degrees F. in order to loosen the cream which has become attached to the sides of the bottle. Should a sample be sour and thick, add a small quantity of powdered lye, mixing it in thoroughly till the curd is dissolved and the milk become fluid again.

With a 17.6 c.c. pipette take a small sample of the thoroughly mixed milk, by sucking it up slightly above the mark on the upper part of the stem. Place the forefinger quickly on the top of the pipette to retain the milk, and hold the pipette in an upright position.

Allow the excess of milk to slowly drip out, by allowing a little air to enter under the finger, until the surface of the milk stands exactly at the level of the mark or ring on the neck of the pipette. Place the lower end of the pipette in the neck of the test bottle, not too far in, release the pressure and allow the milk to flow down the side of the neck. By holding both



ORCHARDS NEAR VERNON, B.C.

## INDIVIDUAL COW RECORDS.

For 30 days ending.....

Name .....

P. O. ....

Province .....

DESCRIPTION OF COWS.					3 DAYS WEIGHINGS OF MILK.			Total Pounds of Milk Calculated	BUTTER FAT.	
NAME.	BREED.	No.	Age	Date of Last Calf	M	E	Per Cent		Total Pounds.	
		1			M	E				
		2			M	E				
		3			M	E				
		4			M	E				
		5			M	E				
		6			M	E				
		7			M	E				
		8			M	E				

pipette and bottle slightly inclined, the air will be allowed to escape without bubbling and causing loss of milk. Blow the remaining drop from the pipette into the bottle. Before adding the acid, bring the milk to a temperature of 60 degrees F.

## ADDING THE ACID.

Procure good commercial sulphuric acid, having a specific gravity of 1.82 or 1.83. Keep the acid bottle tightly closed with a glass or rubber stopper. If an acid burette or other measuring device is not used, the acid may be poured from a small mouthed earthen or glass pitcher into the 17.5 c.c. acid measure, which is usually supplied with the machine.

surface of the milk. The acid and milk will form two distinct layers, with the acid at the bottom, showing a slight brownish coloration where they touch. Have the acid also at 60 degrees F.

The milk and acid may be mixed by giving the bottles a careful rotary motion. This must be very cautiously done to avoid shaking any curd into the neck. Continue shaking until all the clots are completely dissolved. Be careful to have the mixing thoroughly done.

## WHIRLING.

When the milk and acid are thoroughly mixed, place the bottle in the machine so arranged as to balance it. If an odd number of samples are to be tested,

Hot water, preferably rain water or condensed steam, at a temperature of 135 degrees F. must now be added to each bottle. Hard water may be used if about 10 c.c. of sulphuric acid is added to each gallon. A convenient method is to use a piece of rubber tubing, provided with a pinch cock and a glass tip like an eye dropper, leading from the hot water vessel placed slightly higher than the machine. Add enough water to bring the mixture up to the base of the neck and whirl for one minute. Then carefully add more water to about the 8 or 9 per cent mark on the neck of the test bottle and whirl for another minute. The fat should be quite clear and golden in color when the test is finished. If the fat is very light colored and there are specks of curd, use a trifle more acid, as it is probably weak. If the fat appears burnt or cloudy, use slightly less acid, and see that the temperatures of milk and acid are not too high.

## READING THE TEST.

Hold the bottle level with the eye and perfectly upright. With a pair of dividers measure the extreme limits of the fat column: place one point on the zero

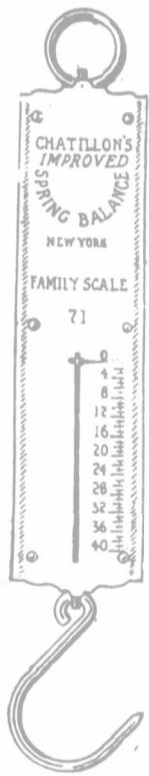
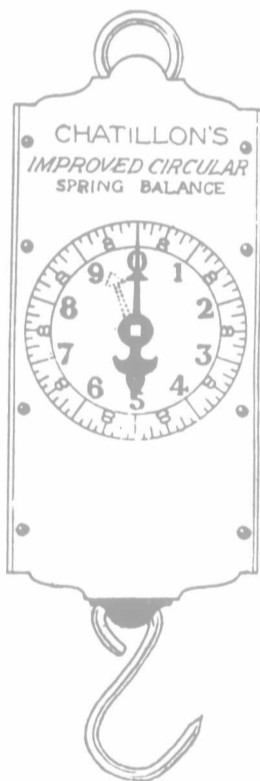


FIG. 1.

\*These scales, to weigh 30 or 60 pounds, are made with a loose pointer which by means of a thumb screw on the center may be set anywhere on the dial, thus taking the tare of a milk pail.



\*FIG. 2.



FIG. 3.

This bottle has a screw metal cap and a rubber washer.

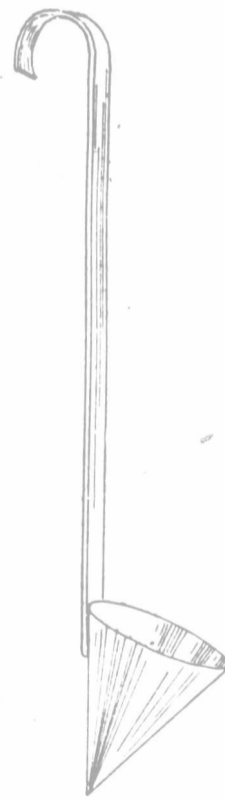


FIG. 4.

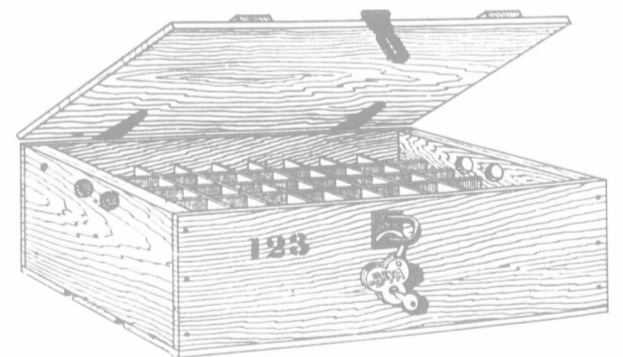


FIG. 5.

Each bottle shall have a label pasted on it bearing a number or name for each cow. Two coatings of white shellac over the label will prevent it soaking off when the bottles are washed. These articles with the following form for recording the weights of milk, make up the outfit required.

mark, when the mark on the scale touched by the other point will indicate the percentage of fat.

Each large space on the graduated neck numbered 1, 2, etc., up to 12, represents one per cent of fat. Each small division represents two-tenths of one per cent. Thus, if reading without dividers and the top of the fat column is at 7.2 with the bottom at 3.3 the sample tested contains 3.9 per cent of fat. If there are many readings to take, keep the fat melted by placing the bottles in water at 130 degrees F. reaching to the top of the fat.

The bottles should be emptied before the fat solidifies, and always kept perfectly clean. A suitable brush may be used for cleaning the necks. Hot water and soap should be used to clean the lower part of the bottles.

Great care should be exercised in handling sulphuric acid (oil of vitriol), as it is intensely corrosive and will burn the skin or clothing quickly should it come in contact with either. Any stray drops should be wiped up immediately, using plenty of water. It is a good plan to have a supply of household ammonia handy, which will help to counteract any burning of skin or clothes, if applied immediately.

Holding the test bottle containing the milk at a moderate slant, pour the 17.5 c.c. of acid in very carefully, allowing it to flow slowly down the side of the neck, and on no account to drop straight on to the

an extra bottle filled with water may be placed in the machine to make it run smoothly. Precaution must be taken to keep the fat melted, but do not let the temperature run above 130 degrees F. Hot water may be put in the body of the tester to keep the samples warm.

The bottles should be whirled for five minutes at the speed indicated on the machine. This will vary from 700 revolutions per minute for a machine twenty inches in diameter up to 1,200, for machines of smaller diameter.



GENERAL.

It has been suggested in these pages as well as in other literature on the subject published by the Dairy Commissioner's Branch, that the weight of each cow's milk should be recorded on three days only during every month. We believe that a larger number of farmers will be induced to take up the work on this basis, than if more frequent weighings were proposed. At the same time we believe most fully that the owner of a herd will be well paid for making daily records. By noting daily fluctuations in the weight of milk, the matter is forced on his attention and a study of the

perature kept best, both when in storage and after removal from storage. Butter made from cream received sweet, kept well while stored at the two lower temperatures, and also after removal from storage, giving results wholly satisfactory. Butter made from cream received sour, also kept well at the lower temperatures, but deteriorated rapidly after removal from storage, giving, on the whole, results which were very unsatisfactory. The conclusion is, that light salting and low temperatures, and the use of cream received at the creamery in a sweet condition give much the best results for storage butter.

isting conditions may be seen by the class and compared with work and conditions that are fully modern. Particular attention is being given to cleanliness and low temperatures and a supply of dairy thermometers, tested for accuracy, is carried by the instructor and will be distributed to those desiring one at a nominal cost. The meetings will extend over a period of six weeks or two months, and should attendance during the busy season warrant it further meetings will be arranged.

Horticulture and Forestry

Fruit Growing in British Columbia.

Fruit-growing in British Columbia, like the climatic and soil conditions in its various districts, is so diversified in character and of such importance that it is hardly possible to do the industry anything like justice in the space at our command, and when the reader has perused this article to the end, he must bear in mind that there still remains much to be said on the subject.

A historical sketch would no doubt be of interest to many, but the wants of intending settlers or investors would be better served by a general outline of the present conditions and prospects of the industry.

Although it is less than sixteen years since the first full carload of fruit was shipped out of British Columbia, progress has been fairly rapid and people are beginning to realize something of its possibilities as a fruit-growing province.

In the season of 1904, the fruit crop of British Columbia was valued at \$600,000, and the area under cultivation estimated at 14,000 acres.

In 1905 the area under fruit had been increased to 20,000 acres, and the total revenue derived therefrom was nearly one million dollars. In the same year something like \$500,000 was expended in the purchase and improvement of fruit lands, and the average price received for grade No. 1 apples from October 1, 1905, to March 31, 1906, was \$1.27 per 40-lb. box, f. o. b. shipping point. The early varieties started out at \$1 net, and during the latter part of February and March as high as \$2 per box was being paid for strictly No. 1 in carload lots. The average price of other fruits for the season of 1905 were: Pears, \$1.38 per 40-lb. box; prunes and plums, 75 cents per 20-lb. box; peaches, \$1.15 per 20-lb. box; strawberries, \$2.30 per 24 basket crate; raspberries, \$2.19 per 24 basket crate; blackberries, \$2.40 per 24 basket crate; gooseberries, 5½ cents per lb.; crab apples, 2½ cents per lb.; tomatoes, 5½ cents per lb.; currants, 7 cents per lb.; cherries, 9 cents per lb.

Outside of the quantities consumed in our own cities the chief market for British Columbia fruit is the prairie provinces east of the Rocky mountains; a market which will always demand the best that the fruit-grower can produce and in ever-increasing quantities, so that British Columbia need have no fear, no matter how rapidly the industry develops, of an over-production of good, clean commercial varieties. The province is most favorably situated, in being contiguous to the vast plains to the east, where fruit-growing on a commercial basis is not likely ever to be a success. That territory is bound to increase rapidly in population and the consumption of fruit will be enormous. It is a curious fact that the average family on the prairies of the Northwest consumes more fruit than do those of British Columbia and it is quite natural also to expect that as the farmers of the prairies succeed within a comparatively few years in laying by sufficient to keep them in comfort for the rest of their lives, they should look

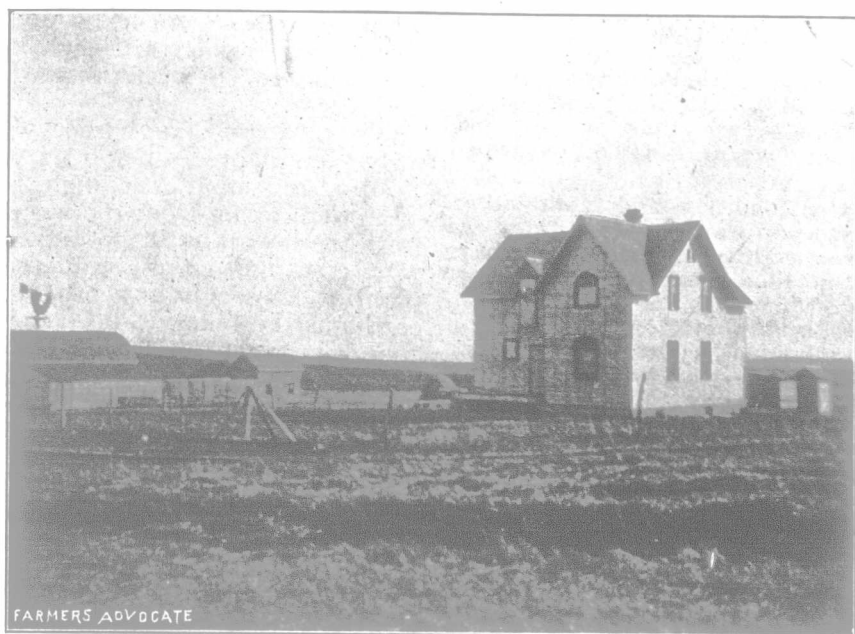


Photo by Way.

HOME OF A. B. SNIDER, OKOTOKS, ALTA.

causes naturally follows. Those who take an intelligent interest in the work on the three days a month basis will soon see the advantage of more frequent weighing. It does not follow that the milk need be sampled for testing every time when it is weighed daily.

It will be of no use to the owner of a herd to simply weigh and test the milk of his cows. Intelligent action must follow in the breeding and selection of animals. The feeding question must also be studied carefully, and it is in this connection that daily weighings will be of great service. Farmers should not invest in purebred cattle unless they are satisfied that there is performance with pedigree, and that behind each animal there is a line of ancestry with good milking records to their credit."

Butter Storage Experiments.

Some extensive experiments in the making and storage of butter have recently been concluded by the Dairy Division of Bureau of Animal Industry, United States Department of Agriculture, in an effort to solve some of the difficulties encountered in the butter trade. A bulletin containing a report of the experiments has just been issued by the Department.

Last summer about 6,000 lbs. of butter were made in Kansas and Iowa, by C. E. Gray, a dairy expert of the Department of Agriculture, and placed in cold storage in Chicago, where it remained until this spring. This butter was examined and scored at intervals by Prof. G. L. McKay, the head of the Dairy school of the Iowa State College, and Mr. P. H. Kieffer, Assistant Dairy Commissioner of Iowa. Some interesting things were revealed by these tests, and while some of the old ideas were sustained, others were practically reversed.

Some of the questions as to which these tests were expected to give results were, first, the effect of pasteurization; second, the amount of salt to be used; third, temperature of storage rooms; fourth, the use of cans hermetically sealed for storing butter; fifth, the keeping quality of good compared with poor butter; sixth, the action of air in contact with butter in storage.

The butter was made from five lots of cream, three of which were sour when received at the creamery and two sweet. From each lot of cream two lots of butter were made, one pasteurized and the other unpasteurized, and part of each lot of butter was lightly salted, and part heavily salted. The butter was packed in tubs and cans, some of the cans being only partly filled, so as to test the effect of air. It was then stored at temperatures minus 10 degrees, plus 10 degrees plus 32 degrees F., and at variable temperatures, part of each lot being stored at each temperature. The butter remained in storage about eight months.

The results showed that butter containing low percentages of salt kept better than butter of the same lot containing higher percentages of salt. Butter in full cans and tubs at the lower temperatures scored about the same. At the higher temperature, there was a slight difference in favor of cans. Butter in full cans kept better than that in cans only partially full. On the whole, butter held at the lowest tem-

Travelling Dairy in Saskatchewan.

The Dairy branch of the Department of Agriculture Saskatchewan, have completed arrangements for the first travelling dairy work in the province and the first class commenced on July 3rd. The work this season will be conducted mostly throughout the foreign settlements and the instruction is being given by a qualified dairyman, who is assisted by an interpreter. The classes are being held at central country points at the homes of farmers, who have a good supply of water and where a quantity of milk can be had for practical purposes. The instructor carries a full equipment of modern appliances for separating milk, cooling cream, making, working, salting, finishing and packing butter. Practical work is being done each day in all these lines in a large open tent provided for the purpose, and the work explained through the interpreter as it progresses. A three day class is being held at each place and the milking of the cows and the best methods of caring for the milk and cream will be done under the supervision of the instructor each evening at the farm where the classes are being held. In addition to this the instructor will be able, on account of the classes being held on the farm, to advise and point out where farm dairy methods can be improved with respect to stabling cows, proper milking places, where separating should be done and the cream subsequently cared for and kept. It is with the view of getting at the very foundation and most important part of the dairy work, viz., the handling of milk and cream on the farm, that the farm home has been selected as a meeting place where ex-



MR. J. E. BELHUMEUR'S HOME ON THE SOUTH SASKATCHEWAN, 57 MILES FROM MOOSE JAW.

to British Columbia with its congenial climate, magnificent scenery and tremendous unexplored and undeveloped natural resources as a place in which to spend their declining years.

There is little need for this province to spend money in trying to induce immigrants from other countries to come here and settle. The best immigration work that British Columbia can do is to develop the fruit-growing industry and to send large quantities of first-class fruit properly grown, harvested, packed and shipped into the Northwest; this will judiciously advertise the province and bring our own people here as soon as they become tired of the more rigorous climate of the prairies.

The geological formations and climatic conditions render it necessary to divide the fruit-growing area of the province into nine general divisions.

No. 1 might be called the southwestern coast district, which includes the southern half of Vancouver Island, adjacent islands, and what is usually called the lower mainland. Here the production of small fruits may be said to be more successful, and consequently more profitable, than that of the tree fruits. Nevertheless, there are a number of very excellent varieties of apples, pears, plums, prunes and cherries which grow to perfection in this district, besides many different varieties of nuts, and, in especially favored spots, peaches, grapes, nectarines, apricots and other tender fruits.

In most parts of this district the mild character of the climate and the excessive moisture during the winter season are very favorable to the development of fungus diseases, and it is therefore necessary to practice persistent and systematic spraying of the orchards, clean cultivation of the soil, and a thorough system of under-drainage in order to get the most profitable results.

District No. 2 includes the valleys of the upper Fraser, the main Thompson, the North Thompson, the Nicola and Bonaparte rivers. Here there are practically none of the above-named difficulties to contend with, but the question of water to irrigate the lands is one requiring serious consideration, as without an abundant supply of water in the dry belt it is impossible to be sure of a crop every year. The prospective fruit grower, however, does not have to contend with the heavy forests along the Thompson river that have to be encountered on the coast. The fruits grown are of the very highest quality and include all the varieties mentioned in connection with district No. 1.

The largest quantities of grapes shipped annually from any one point in the province are produced near the junction of the Fraser and the Thompson rivers.

District No. 3 may be briefly described as the valleys of the Similkameen and its tributaries, portions of which are perhaps the most tropical in climatic conditions of any part of British Columbia, and most favorable locations for the cultivation of grapes, peaches, and other delicate fruits, wherever sufficient water for irrigation purposes is available.

No. 4 includes the districts surrounding Adams, Shuswap and Maple lakes and the valley of the Spallumcheen river. Here the natural rainfall is sufficient and splendid apples, pears, plums and cherries are successfully grown. The climatic conditions in this district, resemble very much those of southern Ontario, and a fruitgrower with fixed ideas from the latter province might be more successful in this district than he would on irrigated lands. The timber is, generally speaking, light and the land rich.

No. 5 is the great Okanagan valley, stretching from Larkin southward to the international boundary. The vicinity of Kelowna in this valley contains the largest area of fruit lands of any one place in the province. Peaches are now being shipped in large quantities from the Okanagan, and all other northern fruits are successfully grown by the irrigation system. Improved modern methods are in general use by the growers in this district and the industry is perhaps more advanced than in any other part of British Columbia.

No. 6 is usually called the Boundary or Kettle River country and though the smallest of all the districts named, the quality of the land is excellent and the climatic conditions all that could be desired. Where a sufficient water supply is obtainable there is no trouble in producing fruit of the highest quality.

No. 7 is west Kootenay, an enormous fruit-growing district, where only a little progress has been made on the southern portion, but sufficient to indicate the possibilities and the superior quality of the fruit which may be raised along those lakes and streams. The neighborhood of Nelson and Kaslo has accomplished wonders in the last few years, but the shores of the Arrow lakes are practically untouched by the hand of the fruit grower, and the valley of the Columbia, from the Big Bend south to Arrowhead, affords opportunities little dreamed of by many of those in search of fruit lands. In the greater part of this district, irrigation is only necessary in the very dry seasons.

District No. 8 is the country known as East Kootenay and is separated from No. 7 by the Dogtooth range of mountains. It is traversed by the Upper Kootenay river from Thunder Hill southward to Phillips range on the international boundary, and from Thunder Hill northward by the Upper Columbia

river, to the big bend. In the southern portion of this district there are immense stretches of thinly-wooded lands suitable for fruit-growing purposes, and the valley of the Upper Columbia has many choice locations for the enterprising fruit-grower. The lack of transportation facilities is a great hindrance to the development of the fruit lands of the Upper Columbia.

District No. 9 comprises the coast region from Jervis Inlet to Skeena river. There is little known of its capabilities, but undoubtedly it has a few surprises in store for the future. Though in small quantities as yet, apples, peaches and grapes have been successfully grown on the Skeena. The first apple trees were planted at Hazelton in the spring of 1901 and fruited in the fall of 1904.

For a considerable distance inland, from the west coast, there are a number of valleys and plateaus, which are well adapted to growing many of the hardier varieties, though fewer in number than those capable of being developed in the first-named district.

Notwithstanding the conditions and adaptabilities which may be in a general way characteristic of the large districts above mentioned, there are always peculiarities of soil and climate, soil moisture, atmospheric currents, etc., which must be taken into consideration, and intelligently utilized in a common sense way by the individual settler when choosing varieties to plant or deciding on methods of cultivation.

That the supply of water from mountain streams for irrigation purposes is limited, should always be borne in mind and in those portions of the province where irrigation is necessary, the prospective settler or investor should be exceedingly careful that a proper supply of water is available, and that he secures a legal right to use it, when purchasing fruit lands. There are many of the so-called dry districts where the soil moisture, with proper cultivation, is quite sufficient to produce a full crop in an ordinary year, but there comes periodically, the extraordinary year when, without any artificial supply of water at hand at the critical time, the whole crop may be lost. In the arid districts it must be seen to that the right to a sufficient supply of irrigation water is obtained, whether needed every year or not.

There are immense fertile tablelands along the Thompson, Columbia, Kootenay and Similkameen rivers and the Kamloops, Okanagan, Upper and Lower Arrow and Kootenay Lakes, which can not be irrigated from the available mountain streams, but it may safely be predicted that some day in the not distant future, a genius will arise who will contrive to invent a comparatively cheap method of pumping the water from these large reservoirs up to the higher levels, and who then will venture to estimate the quantity of rare and luscious fruits which this province may be capable of producing, or the gratitude that future generations will lavish on the memory of the man who shall make the cultivation of these beautiful plateaus possible? Then will the glittering Okanagan Lake become a magnificent water highway, through the midst of densely populated stretches of orchard lands. On either shore will be one continuous line of superb villa homes, and all up and down those scenic galleries of luxurious gardens will dwell the kings and queens of husbandry in the happy performance of the first duties allotted to mankind.

By establishing high standards and the practice of high ideals, both in the quality of their products and business methods of fruit growers of British Columbia should have a large share in building up the commercial character of the province which, like the golden beams of the summer twilight, shall shed its benign influence eastward over the great Dominion of Canada.—MAXWELL SMITH in *B. C. Review*.

### A Valuable Bulletin.

Some time ago a very valuable bulletin No. 47, was prepared by Dr. Saunders, upon information furnished by Mr. Bedford of the Brandon Experimental Farm and Mr. McKay of the Indian Experimental Farm. It gives the results of tests made on the farms during the past fifteen years to determine what ornamental trees and shrubs are sufficiently hardy to stand this climate. We have yet a few for distribution.

The results of Mr. Bedford's planting, as now seen, clearly show that for a wind break the native spruce (*Picea alba*) stands first, and the Manitoba maple (*Acer negundo*) second. For lower wind brake, six to eight feet high, nothing can equal the Siberian pea tree, (*Caragana arborescens*).

We have two fine spruce wind brakes which have been planted ten and six years, and are now twenty and nine feet high respectively. The trees were taken from the woods south of Sewel, from the lower, moist ground, in the spring, just when the new growth was showing. In transplanting these, or any other tree, the greatest care must be taken to keep the roots wet all the time. If the fine rootlets get dry the tree will probably die. Eighty-five per cent of those brought from the woods by Mr. Bedford have lived. When planted they need a thorough soaking and occasional soakings during the summer. I use the word "soaking" advisedly as pails of water are needed for each tree that all the roots may be well watered.

All trees need cultivation for several years. Six years ago Mr. Bedford planted a hedge of spruce, one half of which has been cultivated continuously while the other half has had no cultivation. The ground was all in the same good condition when planted. Now the trees in the cultivated half are at least three times as large as the others and much finer in appearance.

Two rows of Manitoba maples planted about two feet apart in the rows, rows four feet apart, and cultivated for three or four years, will grow rapidly into a high and compact wind brake, and will be handsome. Any wind brake should be fully three hundred feet from buildings in order that the snow bank formed by them may be kept where it will not trouble.

But the caragana makes by far the most handsome hedge and a most excellent wind brake. The Experimental Farms have done a valuable service by introducing this very hardy and beautiful shrub. The seeds sown in rows in a nursery plot, in the spring, will almost all grow and may be planted where needed in a year or two, or small trees may be obtained in small quantities from the Experimental Farms free, or in larger quantities from the nurserymen. The hedges will become more compact if kept clipped on sides and top. Each year it will become higher and broader and denser. We have one which is not only beautiful, but is so compact that a snow flake gets lost trying to get through. It is fully six feet thick and nine feet high, and has been growing some ten years.

This caragana is handsome when planted singly on a lawn, but some other varieties, especially the caragana pendula or caragana pygmaea, are softer and more graceful in appearance.



FRANK RICHLER'S DISTRICT, KOOTENAY, B. C.

These, however, are much more difficult to propagate and of slower growth.

Experimental Farm,  
Brandon, Man. N. WOLVERTON.

**Some Interesting Forestry Facts.**

Forestry is one of the new sciences, and is one with which Canadians must soon become more familiar. As a practical science it has been adopted in many European countries and is fast gaining ground in the United States. It means the systematic management of the wood crop to eliminate waste, to protect against fire and to foster the reproduction and growth of trees. In the July number of the *American Magazine* Julian Willard Helburn writes interestingly of forestry and the characteristics of trees from which we take the following excerpts:

"Southern lumbermen take great delight in a story of certain scientific gentlemen who were sent by the Government at Washington to study the growth and uses of the bald cypress, at a time when cypress lumber was comparatively new to the market. They went direct to a large camp, presented credentials to the superintendent, and watched with minute care the processes of cutting the timber and floating it down stream.

Cypress is a light, spongy wood that grows in swamps and absorbs water readily. The scientific gentlemen requested the superintendent to throw some logs into the river separate from the main rafts, and followed their progress down stream in a boat. After floating south for some distance, the logs with one accord sank. Much surprised, the scientific gentlemen returned and followed another consignment. The phenomenon was repeated: at a certain distance from the camp all the logs sank. The men from Washington, being very scientific, did not think to question the unlettered superintendent about the power of cypress to become water-logged, but after numerous observations and much comparing of notes reported to their Department the startling discovery that cypress floated north of a certain parallel of latitude, and south of it invariably sank. Of the cause they were not yet certain, but hazarded the suggestion that it might lie in the rotary motion of the earth, increasing in speed as the logs approached the equator until it was powerful enough to draw them under.

If there is any germ of truth underlying the yarn it pertains to a past epoch, for the United States Forest Service to-day is a body of men as practical as they are scientific.

Forestry is a strictly practical science. It has nothing to do with abstract theory or landscape gardening. Young as it is in this country, it has quite shattered the conception that once prevailed of it here as an amiable hobby of persons desirous of preserving scenery and wild game. It measures its results solely in dollars and cents.

The forester's ideal tree is a glorified telegraph pole with leaves on its arms: one long, straight piece of lumber and as little else as possible. His sole aims are wood and water, the protection of our important streams and the continuance of the lumber supply in the face of a threatened wood famine. The protective forest, the safeguard of the surrounding country, is a subject in itself: it is with some aspects of the productive forest, the source of the wood crop, that this article is concerned.

Habitually, we associate the forest with the idea of peace. Its stillness, its majestic strength and extent, its extreme slowness of growth and change, make it seem the "foster-child of silence and slow time." In reality, it is the scene of the fiercest and most relentless struggle in nature. The warfare of the trees lasts

for centuries without a moment's let-up. It makes a fatal weapon of the most trivial advantage or accident, and tallies a hundred victims for every survivor. Every tree that reaches maturity is hero of a dozen duels and veteran of a continuous free fight.

As an organism, the tree stands on its head. Its roots, through which it takes its frugal diet of water and mineral salts, are its mouth; its leaves are its stomach and lungs. The water and its dissolved minerals are pumped to the leaves, which absorb carbonic acid gas from the air, break it up, exhale its oxygen, and combine its carbon with the water into the organic compounds of which the tree is formed. These are distributed in the sap to the various growing parts of the tree, twigs, bark, sapwood and roots, and built up into cells.

The gastric juices of the tree, that carry on in the leaves the complete processes of turning water and carbon into wood, cleansing the surrounding air of carbon dioxide and restocking it with oxygen, are two. One is chlorophyll, the green compound that gives the leaves their color; the other is sunlight. The tree can digest only when the sunlight plays on its leaves; its whole life and growth depend on it. Trees die of exposure, they are killed by parasites and pests, but the only disease to which they are constitutionally liable is dyspepsia. If any chance cuts the sunlight from their leaves, they starve to death in the midst of plenty. The death rate from this cause is appalling. The infant mortality alone is about 99 per cent.

The struggle for existence in the forest is usually the struggle for light. Sometimes there is not enough water or nourishment to go around, and the struggle for these complicates the struggle for light. The result is usually a forest of peculiar type, the "open forest," like that of the Rocky Mountains, where water is scarce, or of parts of the South, where the soil is poor, so that one tree drains the resources of many yards of ground. The trees stand far apart, without underbrush, as if in a park. The ordinary close forest has plenty of food and water; its character and composition depend entirely on the outcome of the struggle for light.

Now the forest is a community. Competition in it is fearfully keen, but the citizens pay taxes. They unite to maintain the water supply and the street-cleaning system, the militia and the public schools. To translate: by standing together they protect one another against high wind, one of their worst enemies. They shade the ground and keep it moist, cool and rich, not merely for the benefit of their own roots, but for the protection and nourishment of their delicate young. The young seedlings are as sensitive to heat and drouth as to darkness and excessive moisture, and even when the parent trees, around and between which they spring up, give them just the right amount of shade and coolness they grow very slowly at first, often only an inch or two a year for four or five years. To meet the ravages of dyspepsia trees are very fecund, and if only a small proportion of their seeds germinate, the crop of seedlings will probably spring up only a few inches apart. After a few years of slow growth their crowns begin to meet, and the ground at their feet, now completely shaded, becomes much cooler and moister than before. At once they begin to grow rapidly, and the struggle for light is on in earnest. The lower branches, shaded by the interlacing upper ones, die of indigestion, and all the nourishment from the roots goes to help the crowns which are racing for life. As the saplings grow, there is not enough space or light for all, and the one that grows fastest in height and spread rises above its neighbors, overshadows them, kills them of dyspepsia, and takes their room. The process is repeated again and again (for there may be hundreds of saplings on the space needed by a single mature tree) with the precision of a tennis tournament, the victors in each round meeting in the next, until four big saplings,

those which happened on the best soil, or were least disturbed by insects, or showed the greatest innate power of growth, with vigorous crowns and stems already stripped clean by "natural pruning," the shading off of the lower branches, are left to fight it out in the semi-finals.

Eventually one of these will kill the others as the price of its own life, but the struggle eases up a little, while the trees make their greatest gains in height and diameter. Finally the trees which have succeeded in reaching maturity attain a height beyond which they cannot go. The mysterious machinery that pumps the sap from roots to leaves is taxed to its limit. The power of this machinery not only depends on the species, being greatest in the 500-foot giant eucalypti of Australia and our own 400-foot sequoias, but seems to vary arbitrarily with individuals, one tree of a kind towering over the rest just as one boy in a family grows taller than his brothers.

Immediately the limit of height is reached the struggle becomes fierce again. The crowns, heretofore conical, become flat and cannot expose as many leaves to the light as before. Symptoms of dyspepsia set in, and to save themselves the trees must spread sidewise for more light, again crowding one another, overshadowing and killing the weakest members. Here nature reveals one of her simplest and most ingenious devices. Not till they reach this stage do the trees become prolific seeders, so that almost all the seedlings of the new generation are the offspring of the strongest and fittest of the old.

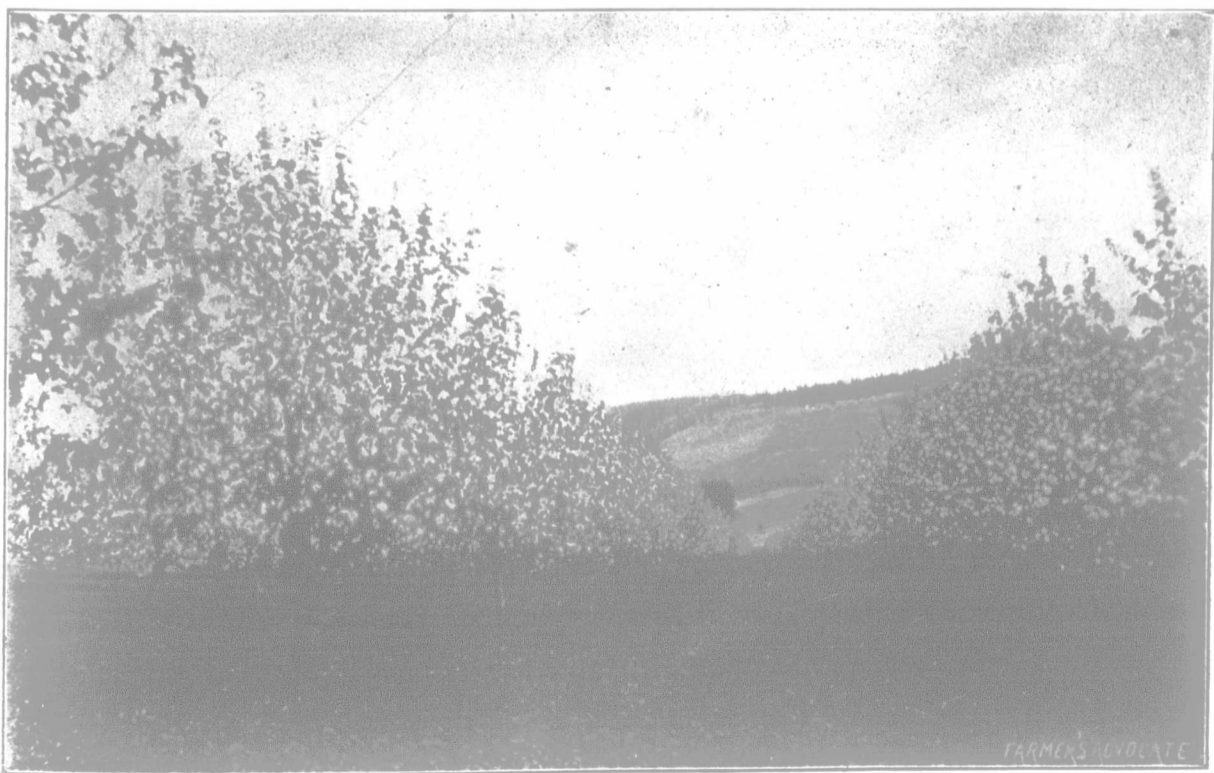
The struggle is now over. Already the younger generations are well up between the isolated veterans of the old. The tree which survives the last, sidewise struggle, if it escapes the enemies of the forest, fire, wind, insects and the ax, dies at last of old age and decay. Only the giant sequoias, three thousand years old and sound as ever, are immune from decay. They seem to be immortal.

Of course, trees don't grow naturally in neatly timed generations. In the virgin forest, trees of all ages grow together in grand confusion, carrying on the struggle for light with half a dozen kinds of weapons. The walnut, for instance, and the poplar, win out by sheer speed—they grow almost visibly. The hemlock, on the other hand, and the spruce, very poor sprinters win out by endurance. They can survive any amount of dyspepsia, and wait fifty or a hundred years, overshadowed and stunted, for their taller neighbors to meet the tall tree's fate and make room for them. Many trees find standing room by their willingness to use ground that the others avoid. The bald cypress and the ash grow in swamps, where ordinary seedlings would drown; the juniper in the open, where other seedlings would be frizzled by the direct sun. The bull pine and the nut pine prosper where any other tree would die of thirst, and the Engelmann spruce and the Alpine larch monopolize the highest mountain slopes, where they alone can stand the bitterness of the weather. The least difference in the surroundings makes one tree's weapon more available than another's, and so changes the character of the forest. In the Southern swamps, wherever the ground rises so much as a foot above the water, the cypress, which lords the rest of the region, must give way to the pines. The northern slope of a hill may be monopolized by a swift-growing, delicate tree that needs coolness and moisture, while the southern is given over to a much slower species that can stand great heat in summer as well as frosts in spring and fall.

The various character of our great forests—we have five, not counting our semi-tropical flora—is the result of the conditions in which they have arisen and the different weapons that conditions have favored. Four of the five forests are composed of conifers, and one of broadleaves. The conifers—pines, firs, cedars and so on—are what we used to call evergreens; and the broadleaves—oaks, birches, elms—what we called deciduous trees. Forestry has changed the names because certain of the pine family, like the larches, are deciduous, and certain of the oak family, like the live-oaks, evergreen.

West of the Plains the broadleaved trees cut hardly any figure, either in size or number, among the great conifers. The Rocky Mountain forest runs out from the Sierras to the edge of the Plains, clothing the slopes of the innumerable ranges wherever the altitude and rainfall will permit. Beginning at 3,000 to 8,000 feet above sea level and climbing to timber line at 10,000, it is snapped off at either end with almost abrupt precision, forming a clearly marked stripe of somber green between the yellow-brown of the open country and the purple and white of the peaks. Its overlords are the bull pines, big shapely trees, their heavy shafts yellow on the south, black on the north. Living on the least possible rainfall—fifteen inches during the growing season—they stand far apart so that each may have plenty of soil to drain, rising unencumbered from the mountain bunch-grass—"like picnic groves," one tenderfoot put it. Above them, on the cool slopes where the snowbanks lie in the hollows all summer, are the Engelmann spruces, smaller, thicker trees, with a furry, well-clad air. And where even the bull pine would die of heat and thirst two little out-liers, the nut pine in Arizona and the red juniper farther north, bob up in twos and threes and patches on the very edges of the desert.

It is almost impossible for one who has seen only the Eastern or Rocky Mountain forests to imagine the woods of the Pacific Coast. Pictures of the Big Trees are as common as postage stamps, but the most wonderful thing about the Big Trees is that they are scarcely bigger than the rest of the forest. The Paci-



APPLE TREES, COLDSTREAM RANCH, VERNON, B. C.

fic Coast bears only a tenth of our woodland, but nearly half our timber. An average acre in the Rocky Mountain forest yields one to two thousand board feet of lumber, in the Southern forest three to four thousand, in the Northern forest four to six thousand. An average acre on the Pacific Coast yields fifteen to twenty thousand. Telescope the Southern and Rocky Mountain forests, toss the Northern on top of them and stuff the Central Broadleaf into the chinks and, acre for acre, the Pacific forest will outweigh them all. Leaving out the Big Trees, of which there are only a few groves, its monarchs, the redwoods in California, the Douglas spruce in the north, grow commonly to three hundred feet or more. Plant a well-grown redwood in Fifth Avenue and a good average Douglas in Broadway, and they would interlace their crowns over the Flatiron Building. A single redwood often yields a hundred thousand board feet of lumber—as much as twenty to forty acres of Eastern forest.

The redwood forest is open and park-like, with little brush, but the woods of the Northwest are as impenetrable as those of the Northwest—on a thrice larger scale. All the trees grow to immense height and diameter, but the Douglas spruce, which is the Douglas fir, which is the yellow fir, which is the red fir, which is the "Oregon pine" of which the masts of cup yachts are made, and which is really neither spruce nor fir nor pine but a species of its own, is lord of them all; the most picturesque as well as the most valuable tree of the densest forest in the world.

The chief difference between the old-style lumberman and the forester is that the one regards his forest as a speculation, the other as an investment. The one wants the quickest, the other the largest and steadiest return for his money. The old method is to fell all the big sound trees of a desirable species in a forest, without regard to their surroundings; withdrawing the necessary shelter from a crop of seedlings in one place, killing others in the fall and removal of the timber; here felling all the seed-trees, so that there will be no reproduction, there clearing the way for a worthless species that will promptly choke out the valuable ones; cutting the best sections from the fallen timber, and leaving the tops and boughs and parts of the trunks to dry and rot and clutter the forest floor with highly inflammable rubbish. Those parts of the timbered forest that do not degenerate into mere brush grow a thin second crop of very inferior lumber, and sooner or later the inevitable spark, dropped by the locomotive or the camper or the lumberman himself, finds its way into the dry refuse, and what is left of a thousand acres or a thousand miles, as may be, of woodland goes up in flame.

Old-style lumbering started in incontinently with the ax. Conservative lumbering begins with a working plan, which is a compromise between the forest and the market. For every tract of lumber the nature and habits of the forest and the distance and requirements of the market present a new problem: the forester must devise and follow a forest policy that will combine the largest returns and smallest expenses with the greatest productiveness of his forest.

For his knowledge of the history and habits of his timber he is indebted mainly to the way in which trees grow. If you drive a nail into a young sapling at a point four feet above the ground, and return when the sapling is a fifty-foot tree, you will find the nail still four feet from the ground. The tree does not stretch: it adds to its height. The only parts of it that grow

in length are the yearling twigs; the annual gain in height and spread is precisely the length to which the new twigs, put out in the spring as buds, have attained when the frosts come. After their first year they are fixed, and grow only in thickness. The new wood is now laid on in a thin layer between the old wood and the bark, over the whole tree. That which is added in the spring, when the sap is running, is built of thin-walled, open cells; the summer wood, put on when the sap needs less passageway, is much closer and darker. Each annual ring of new wood, consisting of a light and a dark stripe, is distinct from the others.

With this slight basis, the forester reads the history of a tree in great detail. After taking out a few "borings" to the center of the tree at different heights and counting the rings on them, he may spin you such a yarn as this:

"This tree is 150 years old—(150 rings at the base). During its first five years it grew only seven inches (145 rings, seven inches from the base). Evidently it then began to touch crowns with other saplings, for it took a spurt and put on fifteen inches a year steadily till it was 40 years old (40 rings, 44½ feet above ground). It was not growing as fast as its neighbors, however, for at this point it began to be overshadowed, and its growth declined for the next ten years to as little as four inches a year (45 rings at 48 feet and 50 at 50 feet). Just in time to save its life, something happened to its big neighbors, presumably a wind-storm—let's see, that would be 1806—and it resumed a steady growth of about six inches a year, having passed its fastest growing time. Its growth in thickness doesn't seem to have varied much: about an inch every three years; but it grew faster and faster in volume, of course, as its height increased: a little over a cubic foot a year in its prime of life, I should judge. About thirty years ago it reached maturity and stopped growing in height (30 rings at the top of the main stem), and now it is approaching old age (the last rings are pretty thin). Hold on a minute; here's a false ring—twenty—forty—sixty years back. Two very thin rings—see? instead of one thick one. Means that something interrupted the growing season—probably a late frost. Let's ask the oldest inhabitant."

And the chances are ten to one the oldest inhabitant remembers the hard spring of 1860 and has heard tales of the great wind in 1806.

A few such studies of typical trees and an estimate of the average stand per acre give the forester his data; which trees are best adapted to the local conditions, which grow the fastest, which can endure enough shade to grow successfully under the others, when each species reaches maturity, and above all the period of life at which each species grows fastest in volume, the stage at which it makes most lumber per annum. Then he turns to his market. If he has but a single valuable tree and the market for its lumber in large sizes is steady, his problem is simple: to discourage other varieties, and to cut all of his marketable species as soon as they have reached, or nearly reached, the end of their stage of greatest volume-growth, always leaving a small percentage as seed-trees, and always piling and burning his refuse. He may begin with an improvement—cutting, removing trees that are dead or dying of dyspepsia, and giving their room to the successful trees. If this pays for itself in cordwood and rails, as it often does, he will repeat it every few years. Or, if his marketable trees are scattered, he may leave standing large numbers of

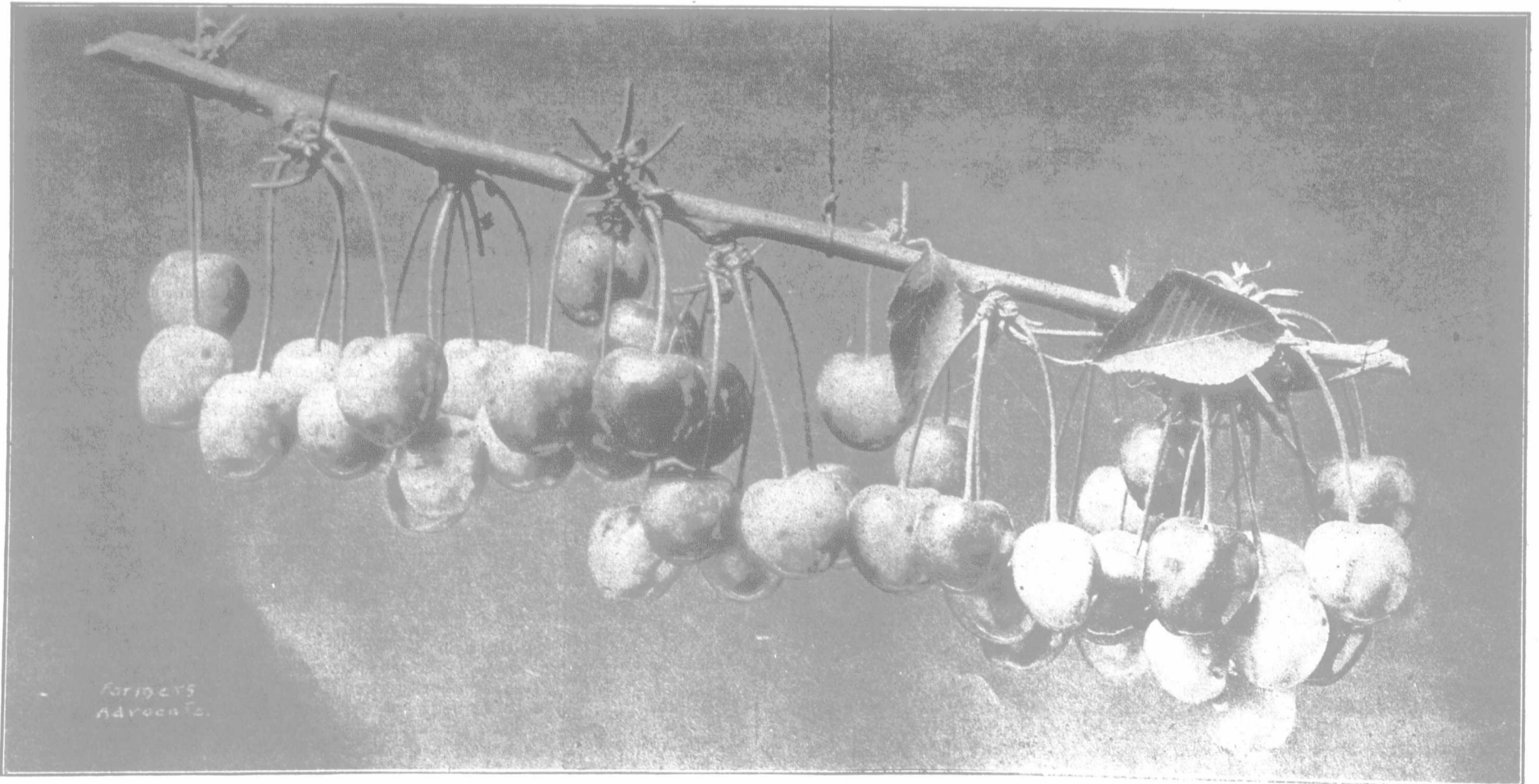
an absolutely worthless species, partly to protect the seedlings, partly to crowd the valuable trees, for too little crowding is almost as dangerous as is too much. If the sunlight penetrates below the crowns to the lower trunks, they will branch, and branches mean knots, and knots mean bad lumber. For quality as well as quantity, the forester wants his trees as close together as their health will permit.

If his forest is spruce in the Northeast he will probably find it more profitable to cut for pulp for the paper-mills than for lumber, and perhaps to cut his trees younger than he would for lumber, since tops and boughs make as good pulp as trunks. If his forest is spruce and white pine mixed, he may be able to grow small spruces for pulp (the spruce is almost proof against dyspepsia), under big white pines for lumber, and get a double profit, producing an impromptu "two-story forest" like those carefully developed in European forestry.

Or his forest may be too far from the timber markets to compete with more accessible tracts, and his only chance to supply ties to the nearby railway. Any wood does for ties, so he will cut all he can spare at first and then encourage his fastest-growing variety. If he has any broadleaf trees or redwoods, he will promptly cut most of them close to the ground, and wait for sprouts. The stumps of the redwood and most of the broadleaves send up shoots which, nourished by the disproportionately large root system, grow much faster than the original trunks. They never grow very large, but those of some species are big enough for ties at thirty years.

In every forest conservative lumbering is a different process, but always with the one end in view: to harvest an even annual crop if the product is valuable enough to pay good interest on the investment; if not to clear off the available timber in such fashion that the forest will profit rather than suffer by its removal and then to return as soon as the new crop has reached marketable size and repeat the performance; to encourage, where possible, the most valuable trees and keep them growing as close together as safety permits, so that the stand on each acre may be a large one of clean, straight lumber and may produce a new marketable crop at the shortest possible interval.

Once his scheme of conservative lumbering is fairly working, the forester's chief concern is to protect his property from its natural enemies. Against wind and drought and frost, of course, he can do nothing. Against destructive lumbering and the grazing of sheep, which nibble and trample the seedlings, a force of a few rangers will suffice. The great danger is fire. The chief task of the rangers is to prevent it, for though it sometimes is started by lightning and more often by sparks from engines, it is usually due to carelessness with camp-fires and brush-fires and cigarettes. Once started, it may burn underground or along the ground, feeding chiefly on the "duff" or humus, the thick forest carpet of decaying vegetable matter. The underground fire is a treacherous enemy; it may smolder for weeks without even a sign of smoke, but does little damage till it emerges as a ground fire. Then, if the season be autumn and the woods dry, it may do a vast deal of harm, destroying seedlings, weakening sapplings, scarring the larger timber and consuming the vegetable mold without which the next crop of seedlings cannot get a start. If the fire has good headway it can only be stopped by a ditch cut across its path through the humus to the mineral soil below, and the first protection of a forest against



BRITISH COLUMBIA CHERRIES.

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fire is usually a system of such ditches, known as fire lanes. In hilly country, they follow the tops of the ridges, where the fire, which burns naturally uphill, is sure to be weakest: in flat country they are laid out like streets, at convenient intervals. Even the fire lane will not stop a bad fire, but it always serves as a base of operations, from which a back-fire may be started, against the wind, in the path of the oncoming flames. When the two fires meet, both go out for lack of fuel.

Sometimes in the resinous coniferous forests, a ground fire, fanned by a powerful wind, will become hot enough to climb the trunks of the trees and run through their tops. When this happens, there is no way of fighting it. The only protection against a top-fire is to run, and to run like blazes. It is a convulsion of nature, against which man is as powerless as against an earthquake. It moves as fast as the wind behind it, and nothing can stop it but a change in the wind, turning it back over its own devastated track, or a broad river across its path. One such fire in Michigan in the early 70's swept a lane forty miles wide from Lake Michigan to Lake Huron, killing several hundred people and destroying seven thousand square miles of the finest forest in the country. The Peshtigo (Wisconsin) fire, of 1871, destroyed two thousand square miles of timber and more than half as many lives. In New Brunswick, in 1825, a fire swept a path 25 miles wide and 80 miles long down the Miramichi River in nine hours, killing everything in its path. Even the fish in the river were boiled.

But such catastrophes, even under the reckless old régime, were mercifully few, and in a well-kept forest, properly logged, with rangers to attack ground fires the moment they are discovered, the danger is minimized.

So much for the work of the forester. Now how about this rumored extermination of our forests that he feels called on to prevent? It is not an easy thing for the layman to conceive. We have all stood on a hilltop and looked over an expanse of forest vast enough, apparently, to keep the whole civilized world in lumber until kingdom come. And over a third of our enormous territory is covered with just such forests. But our history tells a different tale. When the first settlers landed, the area now comprised in our boundaries was distributed something like this:

Forest, 62 per cent; brush land, 8 per cent; open country, 30 per cent. At present 18 per cent of our territory is under cultivation. Of this one-third, 6 per cent, has been reclaimed from the open country and two-thirds, 12 per cent, from the forest, so that, allowing for the legitimate demands of agriculture, we should expect the present distribution of surface to be: farm land, 18 per cent; forest, 50 per cent; open country, 24 per cent; brush land, 8 per cent. As a matter of fact, it is, roughly: farm land, 18 per cent; forest, 35 per cent; open country, 24 per cent; brush land, 23 per cent. Nearly a third of our nominally remaining forest, that is, has become brush land; nearly a sixth of our entire area thrown on the brush-pile. Practically every acre of this is chargeable to one account: lumbering. Perhaps two-thirds of it, 10 per cent, has been actually cleared with the ax, and the remaining 5 per cent destroyed by fires, due almost wholly to our fatal methods of lumbering.

## POULTRY

### A New England Poultry Farm.

Theoretical poultry-farming seems to have a peculiar fascination, and perhaps more theory, with less practice, has been written about poultry keeping than any other industry.

It is refreshing to be able to visit a poultry plant that is run by a practical, up-to-date man. Of all such plants I ever visited, the poultry farm—or ranch, as it is called in Connecticut—of Mr. Tillinghast, of Vernon, is the most practical. A few of the ideas in operation in his plant might be of interest to your readers.

By way of introduction, I might say that Mr. Tillinghast is a keen intelligent Yankee, a man who for the last twenty years or more has been a poultryman. I don't suppose there has been in that time a hen theory that Mr. Tillinghast has not tried. He has had breeds from the Cochin to the Bantam; houses from the house heated by a furnace to the open front, houses hundreds of feet long, houses only large enough for one pen; yarded runs and free range, incubators and brooders of every description; he has fed hot mashes and cold mashes, dry mashes and wet mashes, dry-grain ration and no grain at all; he has fed four and five times a day, and he has fed once a week; watered twice a day, and not at all; he has cleaned his houses once a day and he has left them two years without cleaning them. In fact, there doesn't seem to be any extreme that Mr. Tillinghast has not experimented with, so the methods followed at present should have no little experimental value.

Though these extremes have been tried Mr. Tillinghast is not an extremeist, but a practical

man who make, th most money with the least possible outlay, and from his farm he is making an income that many business men might envy.

His ranch contains about 100 acres, and is divided by roads into three sections, one section, at the home, of about 20 acres, which is his rearing ranch; one across the road of about the same size, his Brown Leghorn ranch; and the other, of about



IN THE VALLEY OF THE RED DEER RIVER, ALTA.

60 acres, the White Leghorn ranch. His business is supplying fresh eggs to the Boston and other markets. He does not keep "open shop," nor does he allow visitors to roam at will over his ranch. In fact he has signs up, plainly stating that anything, especially men and dogs, found trespassing will be shot on sight, and that he means a good deal of it is evidenced by the fact that on no consideration would he allow me on the plant until a certain day, necessitating my stopping in the State two days longer than I intended. Still, when one sees how careless the average visitor is about gates, doors, etc., one cannot blame this manager for doing what many practical poultrymen wish they could do.

One of the first things that strikes you as you start out on the rearing ranch is the number of expensive, continuous hen houses that are empty—houses that must have cost \$5 or \$6 for every hen they would accommodate. It doesn't pay him, he says, to use them now, and he is going to tear them down. His incubator house is all above ground; in it are about twenty five large machines. The ordinary incubator lamp is discarded, and in its place is the "Tillinghast" lamp. As these lamps are used altogether both with incubators and with brooders, a description might be in place here. An ordinary pudding dish that holds three or four quarts is taken, and over it is turned a tin pie plate, just large enough to fit into the dish where the dish extends into the flange. Two holes are made in this plate, one in the center, into which the burner is soldered, and one near the edge for the reception of the oil. The plate is then turned over the dish and two

drops of solder dropped on at each side to hold in position. A special burner is used, without a chimney. The advantages of this lamp are two fold, cheapness and size, it requiring to be filled only about once a week. His brooders are made much after the pattern of the first brooder made by Mr. Hare, and used at the Poultry Stations—a box with a zinc top, under which is the lamp, and over which is the hover. On this box there is only a board high enough to keep the chicks in, and no top, so they have an abundance of fresh air. These brooders are placed in colony houses, which in turn are placed in the orchard of small fruits.

As soon as the chicks are a few days old they are fed out of a small hopper, into which is put screening wheat. In this wheat is a slight mixture of flax, buckwheat, cracked corn and other seeds.

The care, even with very young chicks, is comparatively light, as the lamps and hoppers need refilling only once a week. The chicks are kept here until the small fruits are getting ripe, when the cockerels are taken out and all but the best sold as broilers. The pullets are removed to the laying ranch where they grow up with other hens.

Going to the White Leghorn ranch, which is Mr. Tillinghast's peculiar pride, you find sixty acres without an inside fence. About 2,000 laying hens are housed in colony houses, 50 to 100 to each house. The houses are 10 feet by 20 feet, with roosts at the west end, and the windows in the south side. The house is made of single sheeting, battened, and costs less than 50 cents per hen. Along the north wall is a row of nests. On the left of the door is a hopper, into which the feed is put once a week. This hopper is simply an old box, made so the grain will feed into a trough out of which the hens eat. A small hopper holds a supply of meat, meal, grit and oyster shell. There are no fountains or dishes for water; a small spring creek running through the farm supplies the hens with fresh water. In the winter, when the snow prevents the hens getting to the water, they eat snow. All houses are situated so that a horse and wagon passes each in a single trip, and the only daily visit that is made is about 4 or 5 p. m., when the eggs are gathered with a man and wagon. Exceptionally cold nights a little corn is thrown in the litter as the eggs are gathered. Once a week grain is brought along and hoppers replenished.

In the 3,000 or more hens on the farm, there was not one that was not in the pink of condition. To look after his whole plant he had only one boy that he paid less than \$15.00 per month and board. Last year his hens netted him an average of \$1.00 profit. He thinks that on the land he has he could handle 5,000 laying stock with the same help.

The colony houses seem pretty small for the numbers they accommodate, but this system gives so much fresh air that it is practically outdoors, and, while the temperature goes as low as

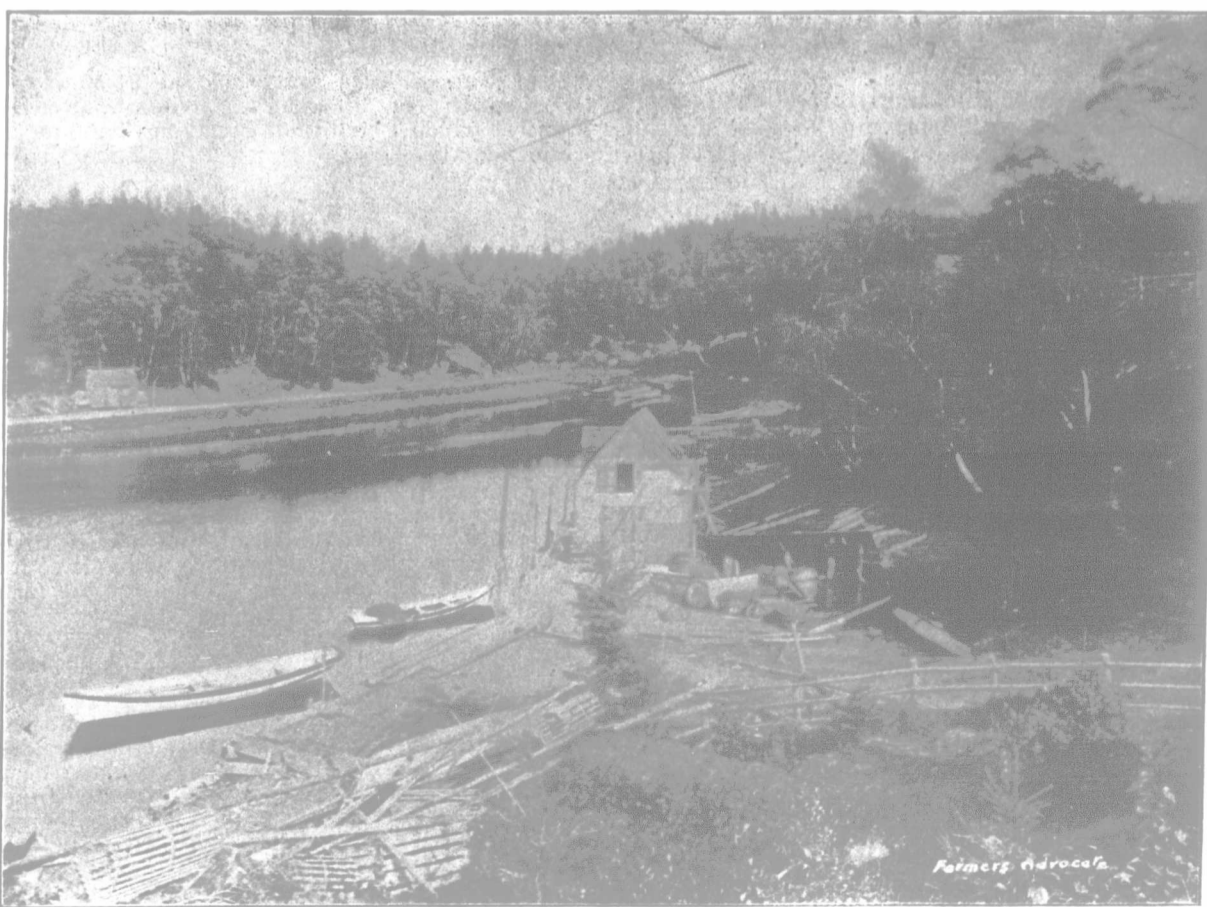


Photo by R. Willis, Pipestone, Minn.

A FISHERMAN'S RETREAT ON THE ATLANTIC COAST.

20 below zero, very few frosted combs were seen.

Leghorns, as a rule, are not considered the hardiest fowl, but those seen here, both White and Brown, were apparently quite hardy, largely owing to the fresh air treatment they had received for several generations.

My visit there was most interesting, and though all the ideas adopted may not be practical for a Canadian farmer, there might be some good lessons learned.—"POULTRY WOMAN."

#### Commercial Foods for Poultry.

Testing poultry foods is one of the branches of investigation followed at New York Experimental Station at Geneva. Bulletin 271 records some of the work done there in testing artificial foods and in part is as follows:

"An abundant supply of protein in palatable form is necessary for satisfactory growth of poultry. The development of blood, flesh and feathers is very rapid in young birds; and these parts and organs are rich in nitrogenous matters. These can come only from the food of the young chick of duckling.

"Under farm conditions these indefatigable little foragers will supplement their allotted grain ration with grasshoppers, flies, beetles, worms, slugs and other forms of animal life that are rich in protein; but in confinement, especially where the flocks are large, the young birds can not secure a sufficient amount of protein, in the limited range of natural animal food that comes their way, to balance up the carbohydrates of the grains. When shut up, also, the birds lack the vigorous exercise that might enable them to utilize large amounts of foods low in protein so that they could secure the needed quantity of this essential requirement for rapid and profitable growth.

#### SUPPLEMENTS NECESSARY WITH GRAINS.

"The cereal grains, especially corn, are very starchy foods; and no combination of them will give a nutritive ratio narrow enough to develop the young bird rapidly. Some supplement must be used. Seeds of the legumes, like peas, beans or cowpeas, are richer in protein; but unfortunately, these foods are not well liked by poultry and will not be eaten in any considerable quantity.

"Those materials that are richest in nitrogen are the concentrated by-products; but these products are not, in a way, natural foods. They are refuse materials from slaughter houses, from creameries or from oil mills; parts of grains from starch factories and glucose works, sprouted grains from distilleries and breweries, or other materials whose natural composition has been changed in some way. It is not safe to depend on the content of protein and fat in estimating the food value of such materials for poultry, as may usually be done in case of whole grains. Palatability, constipating or laxative effect, excess or deficiency of mineral matter are all factors that must be considered. The adaptability of such feeds can only be determined by actual trial. The Station has fed several of these by-products to poultry and finds such marked differences in their effect that the results are well worth presentation.

#### DRIED BLOOD INFERIOR FOR DUCKLINGS.

"In the test with ducklings three pens of from 25 to 30 birds were fed for nine weeks, starting when the ducklings were one week old. Three highly nitrogenous rations were fed, the basis of each being corn meal, green alfalfa and a mixture of four parts cream gluten meal, two parts each of pea meal and low grade flour and one part each of corn meal, wheat middlings and blood meal, with five ounces of salt for every 100 pounds of the mixture and with a liberal allowance of sand.

"To this basal ration there was added about one-third the amount of the by-products to be tested: For Lot I "animal meal" and "meat meal" for Lot II blood meal and bone meal, and for Lot III "milk albumen" and bone meal.

"Lot II made much slower growth than either of the other lots, I and III being about equal. The average gain for the birds in these lots in nine weeks was five and one-seventh pounds, for those of Lot II four and one-quarter pounds; but each lot ate almost exactly the same amount of dry matter for a pound of growth. That is, the rations, for Lot II was of the same productive value as the other rations, when eaten; but it appeared to be unpalatable so that the ducklings would not eat it freely enough to make a rapid growth.

"The ration containing the "milk albumen" was the most satisfactory so far as the general appearance of the birds was concerned, as the plumage developed more rapidly and evenly under that ration than under "animal meal" and

"meat meal"; but the relatively high cost of the "milk albumen" made the ration less profitable to use.

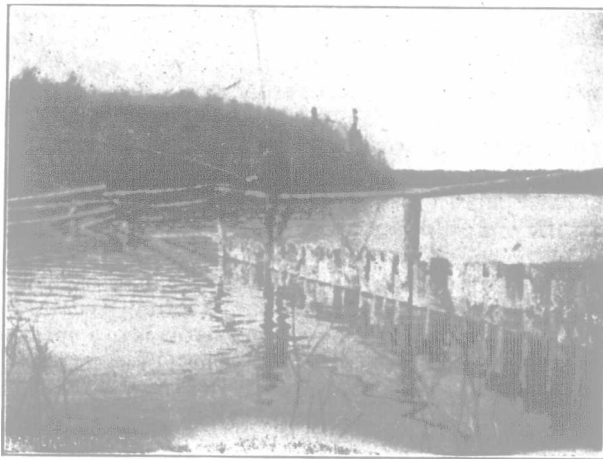
#### GLUTEN MEALS UNSATISFACTORY FOR CHICKS.

"In another test, 40 to 50 chicks in each of 4 pens were fed for eight weeks. The by-products tested were: For Lot I "animal meal," for Lot II "milk albumen," for Lot III gluten meals, and for Lot IV, gluten meals with ground bone to make up any deficiency in ash. The growth of the chicks was slow. Most of them were Leghorns. Lot I on "animal meal" and Lot II on "milk albumen" did fairly well, the increase being about equal for the two lots. The chicks of Lot III on gluten meals gained only one-third as much as those in Lots I and II, and those in Lot IV, with ground bone to supply the ash deficiency of the gluten meals, about two-thirds as much. The gluten meals appeared to be unpalatable, cream gluten meal less so than Chicago gluten meal. The use of anise and fenugreek to disguise or flavor the gluten meals resulted in but little better consumption of food. The "milk albumen" here, as with the ducklings, was palatable, being somewhat superior in this respect to the animal meal, and was the more healthful food; but its cost made the ration unprofitable.

#### GIVE PROVED FOODS ONLY TO YOUNG BIRDS.

"It was observed in both of these tests, as in many other tests along different lines, that the unfavorable effect of a ration was most marked during the first few weeks of the bird's life. Differences tended to disappear as the chicks or ducklings became older.

"It is essential that young poultry be fed rations made up of foods known to be palatable and healthful. Older birds can utilize to better advantage some more questionable materials."



FISHING IN THE RED DEER RIVER, ALTA.

#### Two Hired Men.

Dear Sirs:—We like your paper and look upon it as a necessity so long as we are in the farming and stock raising business.

Enclosed find \$1.50 to cover my renewal subscription.

Innisfail.

FRED WADE.

Dear Sirs:—Please find enclosed \$1.50 for subscription to the FARMER'S ADVOCATE AND HOME JOURNAL which I could not get along without.

Pincher Creek.

THOS. CRAIG.

#### A Whole Loaf.

Dear Sirs:—I would not like to miss your valuable paper as it is quite a treat out here on the prairie. It is so fresh and clean and is one of the biggest meals we can give to our mental appetites.

Yours truly,

Disley.

PETER COLVIN.

#### His Solicitor.

Dear Sirs:—Enclosed find \$1.50 to cover my renewal subscription to the FARMER'S ADVOCATE. I appreciate your paper very much and think it is one that every farmer should read, and better still that he should practice the suggestions which it contains. I think it is the best paper printed for the farmers and farmers' rights.

Yours truly,

Weyburn.

T. CRAWFORD.

No beneficial results can be expected for a particular crop if the bacteria for that crop are already present in the soil.

But little, if any, benefit can be expected from the use of these bacteria if the ground is decidedly in need of other fertilizers, such as phosphates, potash, or lime.

But little, if any, benefit can be expected from inoculation if the soil is already rich in nitrogen.—U. S. Department of Agriculture.

#### Killing Couch Grass.

EDITOR FARMER'S ADVOCATE:

I would be glad if you could inform me of the best means of getting rid of couch grass, which has made its appearance on one of my fields; apparently the more it is plowed the more growth it makes.

Sask.

JOHN R. GARDEN.

Ans. When a man gets couch or quack grass on his farm he may prepare to administer heroic treatment. This weed is one of the most persistent growers known and as our correspondent says the more the soil is cultivated the better it grows. It propagates itself by seed and by root stems like potatoes and naturally the way to kill it is to prevent it reproducing. To keep it from going to seed is not difficult, but as one generally plows it down when it has made a fair growth, in the hope of killing it, just reflect what this treatment does. As soon as any green leaf appears root stalks begin to form in the ground then when the field is plowed these root stalks are spread to new feeding grounds where they start a new growth. Where the patches are small, it is a good plan to smother the grass out with a pile of straw, but if too large for such treatment then another method of smothering must be followed. This method is well described by Prof. Hays, formerly of Minnesota, who gave couch grass eradication a lot of careful study:

"Set apart the spots or fields decided upon for one season and do not try to raise a crop. If following a grain crop or a crop of grass it may be wise to plow the land early in the autumn. But this is not always economy, since the frost does not kill the upturned roots, not even if they are turned over several times during the autumn. Let the grass grow in the spring until nearly time to head out, pasturing it if convenient to do so, then turn it under deeply and completely, by plowing the land as deep or even one or two inches deeper, than it is usually plowed. At this period of its growth the old root stalks will have given up the seed-like nourishment, which they stored up the year before, in helping form the new growth of leaves, stems and root stalks. These old root stalks will be ready to decay and the new root stalks, as yet green and succulent, will not have stored up in themselves food for another year and they also will not resist decay long. The plant at this period is in its most active vegetative stage and is not prepared with a supply of stored-up food in its root stalks to long endure a resting period. Simply plowing under is, however, only the commencement of the attack. The plants are full of active vigor and the young root stalks at once start up new leaves and stems. Leaves are a necessity to the plant at this time and if we can prevent it having any of these 'breathing and digesting' organs it will soon starve and the root stalks will die. To destroy all leaves it is necessary to thoroughly cultivate or occasionally plow the soil at short intervals of one to three weeks. In case the cultivating implement does not do quite thorough work it is necessary to destroy the remaining blades with the hoe, since the rule should be to 'not let the grass see daylight.'

"By this plan many farmers have killed this pest. While it has cost them the rental value of the land for one year, and the labor of several times plowing and cultivating, they have plowed under some green manure, and have given the soil such a thorough summer fallowing that it is in fine condition for a crop the next season. While summer fallowing is hardly to be recommended even in this northern climate where the soil is frozen nearly half the year, save as an occasional expedient, yet in this connection we need not ignore its advantages. The first plowing as above mentioned is sufficiently early to destroy other weeds, even French weed, before they ripen seeds. The repeated cultivating and the occasional plowing brings other weed seeds into their germinating zone of soil and they are destroyed. In addition to the accumulated fertility, which is set free and stored up during the year, the summer fallow also conserves moisture for the next season's crop, and the cleaning, fertilizing and moistening of the soil does much to reduce the ultimate cost of this method of killing quack grass. While the farmers who have followed this plan of entirely eradicating this pest have good words for it, those who have each year for several seasons 'nearly killed' this weed by fairly careful cultivation, but yet have it in their fields, are complaining that it costs them annually a great deal of labor to combat this pest, and it seems to have the mastery.

"Where necessary, and practical to do so, turnrows, and where the fence may be removed, fence rows, and the borders of public roads, should be included in the summer fallow. This will avoid having the grass again encroach upon the field from the surrounding land.

"Doubtless there are many other ways of killing quack grass which would succeed, but farmers make a mistake in experimenting with theories of killing 'by turning the roots up to the sun,' by 'exposing the roots to the action of the frost,' and some other oft recommended remedies. Methods which at once succeed are in the end the most economical."

In this treatment thoroughness is the essential feature and it has even been advised that the fallow be repeated the second year. When we have had a wet season like the present and cultivation cannot be practised as often as desired, it may be absolutely necessary to repeat the treatment, especially since we do not get much growth in the fall.

**FIELD NOTES**

**Notes.**

L. H. Newman of Ottawa, Secretary of the Canadian Seed Grain Growers' Association will tour the west for two months.

LONDON, July 10.—Criticism against the government over the slaughtering in the cattle and canning works in New South Wales has brought forth a communication from Winston Churchill addressed to W. Redmond, in which the former, says he has been informed that special care has been exercised by the new South Wales government in this industry.

Churchill continues: "Only absolutely healthy beasts are slaughtered for food and every precaution is taken in the canning works to ensure cleanly methods. When any breach of the rules regarding cleanliness is brought to light, the licenses to the proprietors of the works are immediately withdrawn. Any persons slaughtering diseased cattle are liable to imprisonment for two years, and the seller to longer terms. Twelve hours notice must be given of the intention to slaughter cattle. Where such notice is not given, a penalty of five pounds per head is imposed."

Dr. Saunders, C.M.G., superintendent of the Dominion experimental farm at Ottawa, has been instructed by the minister of agriculture to proceed to Lethbridge at once to expedite the starting of the experimental farm at this point.

It is understood that W. H. Fairfield will be offered the position of superintendent of the new farm. No better choice could be made, as Mr. Fairfield is one of the most intelligent and clever farmers in Alberta. The new experimental farm will be a big thing for Southern Alberta and great credit is due Senator DeVeber for securing its locations at this point.

**Events of the World.**

**CANADIAN.**

The first climb of the Alpine Club was up Mt. Vice-President on July 10th.

President Loudon, head of Toronto University has tendered his resignation.

The Medical Building of Queen's University, Kingston, was destroyed by fire. The loss to building and contents is placed at \$75,000.

Senator Davis at Ottawa moved to amend the Railway Act by striking out Lancaster's clause limiting the speed of trains to ten miles an hour at level crossings in cities, towns and incorporated villages.

Dr. Kirkpatrick, M.R.C.S., died in Toronto. He served with the Red Cross Society in the Turko-Russian war and received a medal and other honors from the Sultan of Turkey.

The census of the whole Indian population of Canada will be taken when the Indians come in to their respective posts to receive the annual government allowance.

**BRITISH AND FOREIGN.**

Lady Doyle, wife of Sir Conan Doyle, died at London.

The dry dock "Dewey" sent from New York to Manila arrived safely after a voyage of 196 days.

The compulsory Education Bill passed in the British House of Commons by a majority of only 47 votes.

News comes from Johannesburg that the white inhabitants of the Rand district are fearing a general Kafir uprising and a consequent massacre. The Chinese coolies in some places have sided with the blacks.

The Russian court decided that Admiral Rojestvensky did not wilfully surrender at the battle of the Sea of Japan. Four officers of the torpedo boat Dedoy were found guilty of premeditated surrender and were sentenced to be shot.

The Supreme Court of France has annulled the condemnation of Captain Dreyfus without a re-trial, and restored him to his former rank.

The resignation of the whole Russian cabinet has been placed in the hands of the Czar. The struggle

between the Czar and the Duma has been too much for his advisers. He is said to be trying to form a coalition government rather than call upon the constitutional Democrats to form a ministry.

**Grain Growers' Executive Meets.**

The executive of the Manitoba Grain Growers' Association met in Winnipeg on July 9 to receive the report of the delegates who represented the association before the Agricultural Committee of the House of Commons. The president, Mr. D. W. McCuaig, made the report and said that he was well pleased at the reception the delegation received, and reported that practically all the changes they suggested in the grain act and inspection act were adopted by the government. The delegation also received the assurance from the department of trade and commerce that when grain is once presented for inspection the inspection must take place and be final.

The grain growers have always been opposed to "doctoring" wheat in transit, and will not rest satisfied until every vestige of opportunity for such "doctoring" is eliminated. The announced intention of the government of appointing a royal commission to investigate the alleged tampering with the quality of our wheat in transit between the terminals of Fort William and the British markets, and to enquire into the necessary changes in the grading of wheat to meet the requirements of the British trade and eastern millers, is a move that meets the hearty approval of the executive, the only thing needed to make it popular with grain growers is that the personnel of that commission be men in whom the producers have confidence, and who should be producers of grain. This move was also brought about by the delegation.

**AN EXPLANATION.**

In some copies of this week's issue a typographical error appears in the second last line of "A Tribute to the Pioneers." Two thousand copies had been run when we noticed that the word "meed" had been construed to "need." Subsequently the error was rectified.

**A Simple Remedy for Scours.**

EDITOR FARMER'S ADVOCATE:

I wish to give the readers of the FARMER'S ADVOCATE a cure that never fails, and can always be depended upon at any time as a bona fide cure, one that a child can handle with every certainty of success. Whenever your calves, colts or young stock are troubled with scours make them a cup of black tea, let it get almost cold, but not quite, then give it to the calf or colt in the usual way.

Don't throw this away and laugh at the idea of tea doing such valuable work for the truth is it will cure when everything else fails. However, don't forget when they are very bad to give them a cup of tea from four to six times daily, taking care to keep them from the cows as their milk will bring on the same conditions as you are trying to cure. This is a sure cure and one pound of black tea ought to last a big ranch one whole year.

Olds, Alta.

DR. D. W. HENDERSON.

**Gasoline Motor for Farm Work.**

Those who were readers of the FARMER'S ADVOCATE last year will remember having seen an illustration of a gasoline motor performing farm work. So far the use of such motors has been confined almost entirely to European countries, largely because of the cheapness of fuel there. This season, however, a Mr. Taunton who has purchased the Canadian and American rights to handle a well known agricultural motor of English make brought one of his eighteen horse power machines to Canada and during the past few weeks has been giving demonstrations of its prowess when attached to plows. These demonstrations have taken place within a few miles of Winnipeg and a considerable number of people have witnessed the motor in operation. Of course the engine does its work perfectly, the eighteen horse power size doing about the same work as five or six horses and we surmise if Mr. Taunton can demonstrate that the motor can do work cheaper than by horses there will be quite a demand for the mechanical power. The motor used for demonstration purposes requires about eighteen gallons of gasoline for ten hours' work and when burning petroleum, which sells in England for about five cents a gallon, it uses twenty five gallons per day. Crude petroleum is the most extensively used of the liquid fuels in England as it is cheaper than either gasoline or alcohol. Certainly the time to introduce traction motors is propitious in view of the high prices of horses and oxen. Mr. Taunton is having an engine with much greater capacity sent out with which he can accomplish more work without a corresponding increase in cost. As compared with a steam engine for plowing it has the advantage of not requiring a man and team to draw fuel and water.

**Origin of the Term Maverick.**

A group of Texas cattlemen had met in a cafe of a down town hotel after having disposed of their cattle at a profitable figure at the stock-yards, and the conversation had gradually drifted upon topics, connected with the range, says the Denver Times. The men were in a comfortable frame of mind, and some of the stories of happenings on the borders of the Llano Estacada were of a startling order. The subject of "northers" had been exhausted, and there was a lull in the conversation:

"I'll bet there isn't anyone in this bunch that knows how the term 'maverick' originated," spoke up one of the cattlemen, laying down his wide-brimmed hat in an argumentative manner. Someone suggested one origin, and someone else another, but they did not appeal to the man who had challenged the knowledge of his associates.

"You are all wrong," he said, and if you listen a minute I'll tell you. You know the term is applied where cattle of various owners promiscuously mingle on the common range; that is to say, where fencing is not the rule. The cows bear the brand of their owner, and the calves are known by the brands of the cows. Calves are branded as soon as found, but invariably some are not found and branded in time. The calf, becoming independent, soon leaves the cow and sets up for himself. If unbranded, who is the owner? Who can tell? It becomes impossible to decide the question of ownership. But right here one thing does happen—the unbranded beast adopts a name and is known as a 'maverick,' meaning 'nobody's calf.' Now how did—how could—this term originate? Why, simple enough—through the inattention of a cattle owner by the name of Maverick, who was known in a wide region of the southwest Texas for not branding more than one-third of his calves and leaving the other two-thirds to become the common property of the range.

"The Hon. Samuel A. Maverick, a citizen of San Antonio, Tex., was, during 1845, temporarily residing at Decrow's Point, on Matagorda Bay. During that year a neighbor, being indebted to Mr. Maverick in the sum of \$1,200, paid the debt in cattle, transferring 400 animals at \$3 a head. Cattle were cheap in those days, the hides only being cashable in foreign markets. Mr. Maverick did not want the cattle, but saw it was a case of cattle or nothing, and he passively received them, and left them in charge of a colored family, nominally slave but essentially free, while he and his family returned to San Antonio. Here, as before, under the distinguished management of the colored family, who really were not to blame, as they had no interest in the outcome, the cattle were left to graze, to fatten, to multiply and to wander away.

"Mr. Maverick was absorbed in real estate, and no doubt enjoyed the reflection that he was not encumbered by either the cattle of their managers. Right here, a cattleman would say, 'You needn't spin the balance of that yarn. I see the upshot,' but I shall continue to the end, if it takes a dozen bronchoes." The speaker paused a moment and looked at his listeners, but they were attentive, and he continued.

"About one-third of the calves were branded, and the branding was kept so cold and rusty that in 1856 the entire planter brand was estimated at only 400 head, the original number. To the ingenious-minded, the explanation will occur when it is stated that the branding of the 'mavericks' was perfectly square in those days, although the occupation had not been distinctly named. To restate it, the cows wore brand ornaments, the calves were unadorned. Becoming independent and straying off, the calves soon acquired the requisite ornamentation.

"Now, the neighbors shrewdly surmised these calves to be Maverick's, and so they called them 'mavericks'—but did they continue to recognize them as such? Ah, no; they hastened to burn into their tender hides their own brands, and the beasts were Maverick's (mavericks) no longer. No owner could know his own cattle on the range, except by the brand, and so the first brand settled the question of ownership. Thus the unbranded stray calves in those days were dubbed 'mavericks,' for they were most likely Maverick's, at least in that neck of the woods.

"The name took and spread, and filled 'an aching void,' for to-day the cowboy would be lonesome if he couldn't call a 'maverick' a maverick.

"About the year 1856, after eleven years of experience in the cattle business, Mr. Maverick sold the entire brand, 400 head, to A. Teutant Beauregard, a brother of the distinguished general. Mr. Beauregard, however paid him \$6 a head, and Mr. Maverick retired from the venture, thoroughly experienced against similar investments, but with an apparent profit of 100 per cent., and the unique distinction of having his name bestowed upon a very dear friend of the human race. Mr. Maverick had a distinguished record in Texas. He was a member of General Sam Houston's army, was elected a member from San Antonio of the first congress of the republic, and was captured by the Mexican army. After a life full of business, trust and adventure, he died in 1870 in the midst of his family."

Neepawa Fair.

Neepawa's annual fair was quite gratifying to the management. Large crowds turned out and the town's people gave it their hearty support. Horses were a strong show, the heavy drafts being judged by John Graham, Carberry, and the light stock by G. Bowman, Gladstone. Shorthorns might have been more numerous if Mr. Geo. Little had been at home with his herd, he was attending Edmonton Fair, but Mr. Benson, Mr. Caswell and others made creditable showings. H. M. Bing of Glenella had his Hereford herd down and of course, had everything his own way. Exhibitors were more numerous in swine than in cattle and a good showing was made as Neepawa is in the heart of one of the best hog-raising districts in the west. The prize list for horses, cattle and swine follows.

HORSES.

Clydesdale stallion, four years and over, H. Stewart, Arden; Neepawa Syndicate, Stallion, 1905, W. Grasby, Stallion, 1904 Stewart and McLean. Foal, 1906, J. W. Drysdale. Brood mare and foal, J. W. Drysdale. Mare, Manitoba bred, J. W. Drysdale. Stallion, any age, H. Stewart. Stallion, Manitoba bred, Stewart & McLean. Stallion and three of his get, H. Stewart.

Percheron stallion, D. McCaskill, Gladstone; Thos. Drayson, B. Homer. Stallion and three of his get, T. Drayson.

Heavy Draft team W. F. Sirett, Robt Hawes, W. Connell. Colt of 1904, G. Forsyth, J. A. Montgomery, M. Wilcox. Colt of 1905, H. Stewart. Foal of 1906, W. Card, G. Forsyth, M. Willerton. Brood mare with foal, J. W. Drysdale, J. H. Irwin, J. H. Cousins.

Agricultural team, Jno. Gibson, Wellwood; C. Freeborn, Petrol; Jas. Lee, Eden. Four-horse team, J. Gibson, W. Connell. Colt of 1904, W. Thompson, M. Wilcox, M. Willerton. Colt of 1905, Jas. Hall. Foal of 1906, J. Briese, G. Kilburn, W. Govenlock. Brood mare with foal, J. Briese, G. Kilburn. Mare and two of her progeny, J. Montgomery, J. A. Mitchell.

General purpose team, T. M. Whelpton, Jas Hall, G. McLaughlin. Colt of 1903, W. Connell, W. Thompson. Colt of 1904, W. Thompson, Jas Montgomery, C. H. Stonhouse. Foal of 1906, H. Stewart, Jas. Montgomery, Evan Roberts. Brood mare with foal, W. Thompson, C. H. Stonhouse, E. Roberts. Mare and two of her progeny, Wm. Thompson, M. Willerton. Mare, open Jas. Montgomery. Mare bred in Manitoba, Jas Montgomery. Birk's Medal, W. Thompson.

Carriage and coach stallions, three years or over, B. Homer, H. Stewart. Colt of 1903, A. Douglas, Franklin; R. W. Parsons, H. Stewart. Colt of 1904, Parsons, Stewart. Foal of 1906, W. B. Robertson, J. E. Walker. Brood mare with foal, W. B. Robertson, T. M. Whelpton. Team over 15 1/2 hands high, W. Willoughby, Chas. Ianson, W. B. Robertson. Saddle horse 15 1/2 hands high or over, Geo. Graham, J. A. Montgomery, W. Grasby.

Specials by Homer. Colt by Roth Bart, J. A. Mitchell. Foal of 1906, Rothbart, W. B. Robertson, J. E. Walker. Heavy colt, W. Anderson, E. Roberts.

Thoroughbred stallion foaled in 1904, A. McConaghy. Stallion and three of his get, W. J. Edwards. Specials by McKenzie Bros. Best road colt, T. M. Whelpton.

Special by A. McConaghy. T. M. Whelpton, Wm. Grasby, H. Dempsey.

Roadster colt of 1903, H. E. Pattison, Arden. Colt of 1904, W. Card, J. H. Layng. Colt of 1905, Geo. Irwin, A. McConaghy, F. Walker. Foal of 1906, T. M. Whelpton, E. T. Hamilton, Dr McRae. Mare and foal, E. T. Hamilton, J. H. Cousins. Mare and two of her progeny, H. Dempsey, W. Card. Team, Neil Cameron, Minnedosa, Sam Holmes, J. Jamieson. Roadster, A. E. Kellington, Bert Rutledge, J. Adams.

Saddle horse, R. Hawes, D. Orton. Special, mare any age, J. Cousins. Special stallion under three years, H. Dempsey, A. H. Smith.

Ponies. Team, John Hall. Driver, Collum Bros. Saddle pony, Leslie Johnston, D. Orton, H. Patterson. Mare and foal, G. Kilburn, Collum Bros.

Shetlands, over three years, Beeman Hamilton, G. Weaver. Two-year-olds, B. Hamilton, Stallion, G. Weaver, Gladstone. Team, G. Weaver.

CATTLE.

Shorthorn bull, three years and over, S. Benson, Geo. Hamilton, Ed. Nicholson. Two-year-old bull, W. Grasby. Yearling bull, S. Benson, G. Stonhouse. Bull over six months and under one year, S. Benson, Rich. Lea. Bull calf, R. W. Parsons, R. Lea, S. Benson. Cow, any age, S. Benson, G. Hamilton, S. Benson. Three-year-old heifer, S. Benson, S. Benson, H. Jackson. Two-year-old heifer, J. Laidler, S. Benson, S. Benson. Yearling heifer, R. W. Parsons, S. Benson, A. G. Hopkins. Heifer, over six months and under one year, S. Benson first, second and third. Heifer calf, S. Benson. Aged herd, S. Benson. Young herd, S. Benson. Bull and two females, S. Benson. Cow, and two of her progeny, S. Benson first and second. Hereford bull, three years and over, H. Bing, Glenella. Two-year-old bull, H. Bing. Yearling bull, H. Bing. Cow, three years and over, H. Bing first and second. Two-year-old heifer, H. Bing. Yearling heifer, H. Bing, first and second. Heifer over six months and under one year, H. Bing. Heifer calf, H. Bing. Hereford herd, H. Bing. Bull and two of his get, H. Bing. Champion bull of any breed, H. Bing's Hereford.

SWINE.

Berkshire boar over one year, J. A. McGill first and second. Boar over six months and under one year, J. A. McGill. Boar under six months, J. A. McGill first and second. Breeding sow one year and over, J. A. McGill first and second. Sow, under six months, J. A. McGill first and second. Improved Yorkshire boar, one year and over, J. J. Stewart, Gladstone; Geo. Irwin. Boar, under six months J. J. Stewart first and second. Breeding sow one year and over, A. G. Hopkins first and second. Sow under six months, J. J. Stewart. Sow and pig, Geo. Irwin, J. J. Stewart. Tamworth boar, one year and over, A. W. Caswell first and second. Boar over six months and under one year, A. W. Caswell. Boar, under six months, W. Thompson, W. Connell. Breeding sow one year and over, A. W. Caswell, W. Thompson. Sow over six months and under one year, A. W. Caswell first and second. Sow under six months, W. Thompson, A. W. Caswell. Sow and pigs, W. Thompson, A. W. Caswell.

The Crop Outlook in Manitoba.

The report of the provincial department of agriculture on the spring crop outlook, which has just been issued, shows an increased wheat acreage of half a million. Manitoba has now over three million acres in wheat alone.

The numbers of acres sown in oats is 1,155,561. The barley acreage nearly reaches half a million, being 474,242 acres.

The total increase in the grain acreage over last year is 655,856. An increased acreage is shown in other crops.

The report is compiled from information received from 375 regular correspondents of the department.

The following table of the acres under crop of wheat, oats and barley is given:

District—	Wheat Acres.	Oats Acres.	Barley Acres.
N. Western.....	375,944	294,855	83,375
S. Western.....	1,155,456	336,873	100,454
N. Central.....	687,534	180,525	94,386
S. Central.....	695,729	215,371	118,256
Eastern.....	226,874	128,337	77,871
Province.....	3,141,537	1,155,961	474,242

The live stock shows a slight development, also:

District—	Cattle fattened during winter 1905-6	Milch Cows.
Northwestern.....	4,563	23,112
Southwestern.....	7,375	49,506
North Central.....	4,773	24,939
South Central.....	3,019	23,856
Eastern.....	2,258	40,136
Province.....	11,988	161,549

A Practical Man's Advice.

EDITOR FARMER'S ADVOCATE:—

I submit the following methods on dry land farming after having adopted them for eighteen years, during which time I have always been successful in raising a fairly good crop, varying of course, with the conditions and the seasons.

I have my fields equally divided and crop one half while I summer fallow the other. Discing the land to be summer fallowed early in the spring, is, I find, a good thing although I have sometimes plowed it very shallow. Plowing, however, is much more work and gives but little or no better results as the object is to get weed seeds started to growing so you can kill them when commencing to plow.

I always try to have my summer fallow plowed a fairly good depth, and never allow a disc on it after it has been plowed. I prefer to harrow and at times a cultivator. I commence plowing my summer fallow in May and complete it in June, then harrow it about every two weeks whether there are weeds coming or not. I consider I make as much money every time I harrow as any other piece of work I do on the farm. I get my pay the next season in a much heavier crop. I harrow it from four to five times during the summer, then either seed it to fall wheat or sow it in the spring, in either case using good plump seed. I have used Odessa and Turkey Red as fall wheat and principally Club and Touse as spring wheat. The latter I brought with me from the States. Other varieties are I think just as good.

More depends on the condition of the land than the variety of the seed. I sow my fall wheat the first part of August thus allowing it to shade the ground, and I have found that sowing spring wheat early in spring when the frost is leaving the ground will give the best results. I never sow more than one bushel and a peck to the acre whether sowing fall or spring wheat.

Of late years I have adopted the method of harrowing my growing grain once or twice especially if there are weeds coming. In that case I do so on a warm day, as the most prevalent weeds to be found on summer fallowed land are near the surface and a great many can be killed while at the same time you cultivate the grain.

I have often seen fields to be summer fallowed that have not been touched in any way until July when the rubbish was headed out—thus allowing no rest for the land and multiplying weed seeds for the ensuing year.

If we expect success from the farm we must give the farm our best efforts.

Cardston. J. Anderson.

The Hunger of Man for Land.

Is the hunger for land a normal appetite? The records of history and a knowledge of the general nature of mankind supports the theory that it is just as much a normal appetite as that which is a feature of our bodily requirements.

Since the days of history's dawn we know that kings have risked their thrones to possess and maintain territories. The earliest pages of history recount how the sturdy men of the ancient nations dared the dangers of unknown seas in quest of land to satisfy this unappeased craving. Voyagers have lived lives beset with hardship and danger in unexplored lands that they might establish forts and ultimately acquire more land. Pioneers followed them and though harassed with almost unsurmountable difficulties the appetite for land had to be satisfied that nations might expand. All for land! The great producer, the savior of all that crumbles, and what does not? It is the distributing point from which the higher and useful forms of plant life serve the end of placing the animal on a higher pedestal. It feeds our living and receives our dead, and responds as cheerfully to the toil of the humblest peasant as it does to that of the highest titled lord.

The appetite for it is a distinguishing feature of the Caucasian race and it has placed it in the van of civilization. With this appetite satisfied, with both feet firmly planted on land of his own, no matter how elemental the man may be, his nature feels a sensation of solidarity and the future assumes a rosy prospective that no other condition can surpass. Looking over a goodly land a thrifty member of the Teutonic race after many minutes of silent contemplation addressing himself burst forth "Frank, there is something deep down in you says you want some land!" So is it with every one to whom such a sight comes, with its accompanying contemplation and it is acting on that make a man become a sure basis for good citizenship. At no time in the history of the world has this appetite taken a stronger hold upon humanity than in our day and as it is a healthy quality of man's nature it is one that should be satisfied. No matter how much it is thwarted in early life at some stage in every man's career it calls for immediate satisfaction.

Let us follow a few typical instances of this nature. The country boy, ignoring this elemental appetite, finds his worldly ambition first stirred by the school teacher because this important personage knew all things worthy of questioning and in addition he is an influential person in the village concourse of wise men. And not only that but he is a prime mover in many things and most attractive of all, to the boy in homespun, he is a well dressed man of leisure. This ambition finds its first satisfaction in a position attained and our country boy after teaching school for a while finds himself one of some authority with more or less glibness in explanation. He has discovered that to be a leader of the minds of others he must have his stored with facts and conclusions already reached. This encourages him to "become" a heavy reader and deep thinker as well as a close student of human nature. His interest in the study and the discussion of questions leads him to formulate principles for deciding these. He sees the lawyer a master in this field and straightway studies law. As a lawyer he enters enthusiastically into the study of human history and that entrancing subject of the source of human motives. His business with clients teaches him that they may be controlled and this with his work before the courts leads him to study how to influence the minds of men. Participation in hustings gives him the glow that comes from acclamation and he soon finds the opportunity to have his name in nomination and the polls place him among the representatives of the state. A readiness in understanding the common mind develops senatorial possibilities which culminate in actual realization. After running the gamut of a political career with its uncertainty and lack of genuine satisfaction, his inborn appetite for land grips him with terrible earnestness, and his reminiscences turned to the life of the old farm, its comprehensiveness, its naturalness, its wholesomeness and restfulness from the satisfaction of good work well done. He gratifies his appetite and back to the farm he goes and having seen what enterprise and business acumen have secured for men in other lines he makes these a feature of his farm and so to have the best stock and follow the best methods become his absorbing aim. A richness of sentiment that followed him through all the years that his appetite remained unsatisfied makes the small wood-lot and the creek and the fine stock in his prairie pastures fully meet his



cherished ideal and these become his chief joy in his declining days.

The city boy strangling for a time his inborn appetite scans the careers of the majority of his successful fore-runners and his destiny assumes shape. As a boy about town the clerk in immaculate clothes and shining shoes arouses his ambition and soon the wish becomes a reality. With natural aptitude and understanding his customers, he makes them friends and regular traders with him. Studying the business more closely and not forgetting its social side he ultimately becomes a manager. His ability to attract custom and general good fellowship brings him in close touch with the proprietor, and interchange of business ideas develop a faculty for initiative and soon he becomes a merchant in his own right. A faculty for organization leads to the establishment of more departments and the success of these to the founding of more branches. A merchant prince is now the proper designation for our study. The faculty for selecting right men to conduct the growing business brings increased financial reward and as these have to be invested they find absorption in real estate. More real estate and a happy faculty for mixing with men nurtures the traits of a promoter and these in turn together with money making instincts result in the evolution of a banker. Experiences with men and deals and the satisfaction of handling these successfully brings for a time all that life is asked for but after a while the mere signing of "O. K's" to bills and signatures to important documents to permit other people to enjoy his money grows stale and the inborn appetite grips him and the mind turns with longing to a quiet place where how much money you are worth is not always the leading question. To satisfy this gnawing appetite the old time city boy looks with yearning eyes to the farm for to him it seems a surcease from noise and strife and high strung living giving in lieu thereof interest in real things and the ability to do just as you please without consulting directors, clients or even your financial standing. To such a man there comes a vision to appease this appetite of green meadows with silver streams and lake shore with a high class stable and cows and other things that contribute to the relishes of the table and all these merge into general enjoyment. The question I would ask is why we go through all this rack and worry living through the experiences of other lives while this great appetite and the consequent enjoyment of its fulfillment is so easily satisfied when its first cravings come to every man?—JOHN A. CRAIG, in Live Stock Report.

Alberta Veterinarians Meet.

Alberta veterinarians met in Edmonton on July 4th for the purpose of appointing the Veterinary council for Alberta. The following gentlemen were nominated to the several positions and if these nominations are approved of by Lieutenant Governor in council they will retain them. The nominations are as follows: President, Dr. Riddle, Calgary; vice-president, Dr. Murphy, Strathcona; secretary-treasurer and provincial registrar, Dr. Sweetapple, Fort Saskatchewan; councillors, Dr. Hanington, Lacombe and Dr. Pichering, Edmonton.

The Plague of Flies.

The fly season is with us again. Much discomfort may be saved the cows, and a shrinkage in the milk flow and of cash returns avoided, by the application of some specific for the prevention of this annoyance. Among the preparations recommended for this purpose is the following by Prof. H. H. Dean, of the Ontario Agricultural College: Fish oil, one-half gallon; coal oil, one-half pint; crude carbolic acid, four tablespoonfuls; mixed, and applied to all parts of the cow except the udder, once a week, will keep the flies from about twenty-five cows.

Kansas State Agricultural College recommends the following mixture: Resin, 1 1/2 pounds; laundry soap, 2 cakes; fish oil, one-half pint; enough water to make three gallons. Dissolve toe resin in a solution of soap and water by heating, add the fish oil and the rest of the water; apply with a brush. One-half pint of this is considered enough for one application for a cow. At first it will perhaps be necessary to give two or three applications per week, until the outer ends of the hair become coated with the resin. After that, re-touch the parts where the resin is rubbed off. Still another preparation that has been recommended is: Fish oil, one gallon; crude carbolic acid, two tablespoonfuls.

MARKETS

Thompson, Sons & Co. say:—During the first part of last week the American wheat markets continued to steadily decline and from the 5th to the 10th inst. there was a loss in prices of 1 1/2c. to 3 1/2c., the largest decline taking place on wheat for immediate or early delivery, and the lesser decline being on the more distant futures, December and May. On the 1st inst. the U. S. Government crop report for July was issued showing the condition of the winter wheat crop on 1st July 85.6 against 82.7 on 1st June and 82.7 on 1st July 1905. Spring wheat condition was put at 91.4 on 1st July against 93.4 on 1st June and 91 on July 1st last year. These percentages of condition and the acreage estimated to be under crop suggest a probable yield of 444,000,000 bus. of winter wheat and 287,000,000 bus. spring wheat a total of 731,000,000 bus. against the final Government estimate of 692,000,000 bus. as the amount of last year's crop. On the face of it this is bearish enough and it had some effect in further depressing the price. In the meantime, however, the weather for the few days previous to Tuesday seemed less favorable over the spring wheat country, being mostly too warm and dry and traders whose interest in the market at present lies with the bull side, began to supply the markets with hot weather damage reports and also rust reports. On Wednesday morning cable quotations did not reflect the influence of the decline on this side, and the comparatively bearish Government crop report, and the markets having experienced a decline of 5c. to 6c. during the past month or so readily turned at the exhibition of bullish news and a quite sharp advance took place. Dry weather and rust reports continue to be wired to the markets, but usually receive prompt denial, and reports are so contradictory it is not easy to definitely estimate the truth of the reports or what bearing they may have on the situation. At this date, however, we consider there is no definite impairment of previous favorable prospects. It may be noted moreover, that no matter how good the general stand of a crop that is spread over so great an area as the spring wheat crop of North America may be, and that is raised on various qualities of soil, and by many kinds and qualities of growers, there are sure to be fields and even districts where the crop will be light. We don't expect rust damage, although we might not escape it altogether, although we are almost sure to have more or less damage by hail, but in the long run unless something serious and widespread happens, such as the world will be very certain to be definitely and authoritatively informed of, there will be as large a yield of wheat, in the Canadian West at least, as we have been suggesting in previous reviews, viz., 100,000,000 bus. No particular change in the wheat situation outside of America has taken place during the week. European demand is inactive and is being supplied without difficulty and crop reports from Europe and the southern hemisphere are of the same tenor as recently.

Manitoba wheat on our local market has been quiet; price changes have followed the change in the U. S. markets and on the week show a decline of 1/2c. to 3/4c., although there was a drop of 1 1/2c. in the interval. Prices are: 1 Nor. 80 1/2c., 2 Nor. 78 1/2c., 3 Nor. 76 1/2c., spot or July delivery, and futures on the option market July 80 1/2c., August 81c., October 78c., May 79 1/2c. All prices are in store Fort William or Port Arthur.

Table listing market prices for various commodities including Millfeed, Chopped Feeds, Oats, Barley, Flax, Hay, Potatoes, Creamery Butter, Dairy Butter, Cheese, Eggs, and Live Stock.

TORONTO LIVE STOCK.

Export cattle, choice \$4.80 to \$5; medium \$4.60 to \$4.75; butchers, picked \$4.60 to \$4.80; medium \$4.25 to \$4.50; stockers, choice \$3.50 to \$3.85; common \$2.75 to \$3.25; short keep feeders \$4.60 to \$4.80; heavy feeders \$4.60 to \$4.70; export sheep \$3 to \$4.25; spring lambs 7 to 7 1/2c. per pound; hogs \$7.45 to \$7.70.

Things to Remember.

Managers of shows whose dates do not appear in our list will confer a favor on our readers by sending in the date or calling our attention to errors.

Table listing dates for various fairs and exhibitions such as Sale Clydesdales, Industrial, Winnipeg, Lakeside Fair, Killarney, Regina, and Prov. Exhibition, New Westminster, B. C.

SASKATCHEWAN FAIR CIRCUITS.

Table listing dates for Saskatchewan fair circuits across various locations including S. Qu'Appelle, Moosomin, Wolseley, Wapella, Rosthern, Sintaluta, Ft. Qu'Appelle, Oxbow, Fairmeade, Grenfell, Stoughton, Creelman, Moose Jaw, Regina, Prince Albert, Alameda, Carnduff, Gainsboro, Carlyle, Kinistino, Duck Lake, Broadview, Maple Creek, Estevan, Saskatoon, Lloydminster, Battleford, and North Battleford.

ALBERTA FAIR CIRCUITS.

Table listing dates for Alberta fair circuits across various locations including Fort Saskatchewan, Lethbridge, Cardston, Magrath, Raymond, Olds, Didsbury, Vermillion Valley and Beaver Lake (Vegreville), Medicine Hat, Macleod, Red Deer, Ponoka, and Innisfail.

MANITOBA FAIR CIRCUITS.

Table listing dates for Manitoba fair circuits across various locations including Birtle, Strathclair, Oak River, Boissevain, Hamiota, Dauphin, Swan River, Souris, Manitou, Horticultural Show, Brandon, Western Horticultural Society's Exhibition, Winnipeg, Woodlands, Kildonan, St. Francois Xavier, Stonewall, St. Jean, Beausejour, Plumas, Gilbert Plains, Macgregor, Russell, Meadow Lea, Headingly, and Harding.

A Great Galloway Breeder Dead.

The Scottish Farmer announces the death of the experienced agriculturist and noted breeder of Galloways, Mr. James Biggar, Chapleton, Dalbrattie, Scotland, on June 28th. At the chief breeding and fat stock shows the Dalbrattie Galloways were always in the van and stock bred by Mr. Biggar are distributed wherever improved cattle breeding has been carried on.

# HOME JOURNAL

## Life, Literature and Education

### IMPERIAL DUTY.

Lord Curzon, ex-Viceroy of India, in proposing the toast, at a banquet to Lord Milner, of "Our Dominions Beyond the Seas" delivered the following speech, in which he urged every citizen of the empire to be concerned in its welfare:

"Our principal object in meeting here to-night has been to do honor to Lord Milner, and that object, after the speech of our chairman, and the magnificent reception accorded to our guest, we may claim to have successfully attained.

#### A REAL EMPIRE BUILDER.

"But on an occasion like this, when so many representative persons are present, and on a day like this, which is consecrated to the name and conception of Empire—(cheers)—the opportunity ought not to be lost of proposing the toast of "Our Dominions Beyond the Sea"—(hear, hear)—those dominions which have grown and spread by the self-sacrificing and often ill-requited labors of such men as Lord Milner, and which have never had a more brilliant or more devoted servant than he. (Cheers.) That is the explanation of the toast which I have been instructed to propose. No man can propose this toast—least of all any man who has borne a part in the task of governing the Empire—without a sense of great responsibility and almost awe, for think what this toast means. It embraces in a single formula more than a quarter of the entire human race. It is a toast to no inconsiderable portion of the inhabited and civilized globe. The British dominions beyond the seas include every colony in the possession of the Crown, from the Federated Commonwealth of Australia, that great experiment so rich in promise—(hear, hear)—and the Dominion of Canada, with its heritage of glory and its future of hope—(cheers)—down to the smallest rocky island or coral reef over which the Union Jack may have been hoisted on the bosom of some distant ocean.

#### COLONIES ARE PROGRESSIVE.

"It includes great self-governing communities who have left us far behind in experiments of government and economics, but whose heart still warms and whose pulse beat more quickly at the thought of the mother land. It includes the small but not uninteresting Crown Colonies to which we have given what is, in my judgement, one of the best forms of government in the world. (Hear, hear.) It includes all those vantage points and places of arms with which we guard the ocean highways and of which we have been told that the drum beat echoes round the world. It includes undeveloped protectorates, which in backward continents are the first step towards higher forms of political evolution. And lastly it includes India, that Empire within an Empire, that supreme test of our Empire and race, the successful government of which is by itself sufficient to differentiate the British Empire from anything that has preceded it. (Cheers.) All this and much more than this is involved in the toast which I am allowed to put before you. I hope that no one will do me the injustice of thinking that in making this brief enumeration I have been actuated by any spirit of pride of possession, still less by any suggestion of increase. Believe me, it is not those who know most of the Empire who make broad its phylacteries. (Laughter.) It is not from their lips that you hear about paint-

ing the map of the world red. (Hear, hear.) I doubt if in the mind of any one of them—and there are many here to-night—expansion ever figures as an object of ambition, though it may present itself to them, as it has often presented itself in the past, as an obligation of duty. (Hear, hear.)

#### WHAT THE EMPIRE MEANS

"No, the Empire is to them, first and foremost, a great historical and political and sociological fact, which is one of the guiding factors in the development of mankind. Secondly, it is part of the dispensation of the higher power which for some good purpose—it cannot possibly be for an evil one—(hear, hear)—has committed the fortunes of all these hundreds of millions of human beings to the custody of a single branch of the human family. Thirdly, it is a call to duty, to personal as well as national duty, more inspiring than has ever before sounded in the ear of a dominant people. (Hear, hear.) Cynsai may scoff at Empire. Doctrinaires may denounce it from the benches of the House of Commons (laughter)—or elsewhere, and the rhapsodists may sometimes conspire almost to render it ridiculous. But it is with us. It is part of us. It is bone of our bone and flesh of our flesh. We cannot get away from it. We cannot deny our progeny. We cannot disown our handiwork. The voyage which our predecessors commenced we have to continue. We have to answer our helm and it is an Imperial helm down all the tides of time. (Cheers.)

#### COMMON IMPERIAL INTEREST.

"On an occasion like this and with a toast like this, there are scores, I might say hundreds, of reflections which crowd on the mind of a man entrusted with the task of proposing this toast. But there are only two to which I will venture to allude to-night. The first is this. Surely it is right that the interest of the Empire is a common interest, and it is equally shared by all its members. It is monopoly of no class or party or government within the Empire. There can be no greater mistake than to regard the Empire as the peculiar property or the particular concern of those fortunate enough to administer it whether from Downing street or the governor's chair of authority in any part of the world. They are only the instruments and mouthpieces of authority outside of themselves, and the constituency they represent is co-extensive with the Empire itself because it includes every one of its citizens. They may enjoy for a time pride of place and the privilege of responsibility; but only in proportion as they recognize the existence of something larger than themselves outside of themselves, the higher laws and the deeper principles that affect the welfare of the Empire as a whole, only so far are they entitled to share in the credit. (Cheers.) Again, the Empire is not the interest of the Mother Country only, though we are sometimes disposed to talk as though it were. By the way of that fallacy, as history has too often shown, lies the path of disruption and ruin. (Cheers.) But neither is it the interest of the colonies alone. Though we may allow them sometimes to stand up and lecture their parent, still the Empire was not made for them, but for the Empire, and my point is that the Empire is the interest of every land and island within

it, of every man who inhabits it, and every subject of the King. Wherever he may be and whoever he may be, be he rich or poor, be he a dark-skinned man or a white skinned man, he is equally concerned in the purity of our administration and in the justice of our rule. (Cheers.) Unless the Empire means something to him—I do not say always the same thing, but something of beneficence and advantage and profit in his life, whether he be a coolie in India, or a squatter in Tasmania, or a fisherman in Newfoundland—unless it means something of good to him the Empire is not justifying itself, and there is something wrong about it. I do not say that as long as they do good Empires necessarily continue to wax but I do say that when they have ceased to do good their citizens must inevitably tend to wane.

#### THE SPIRIT OF SELF-SACRIFICE.

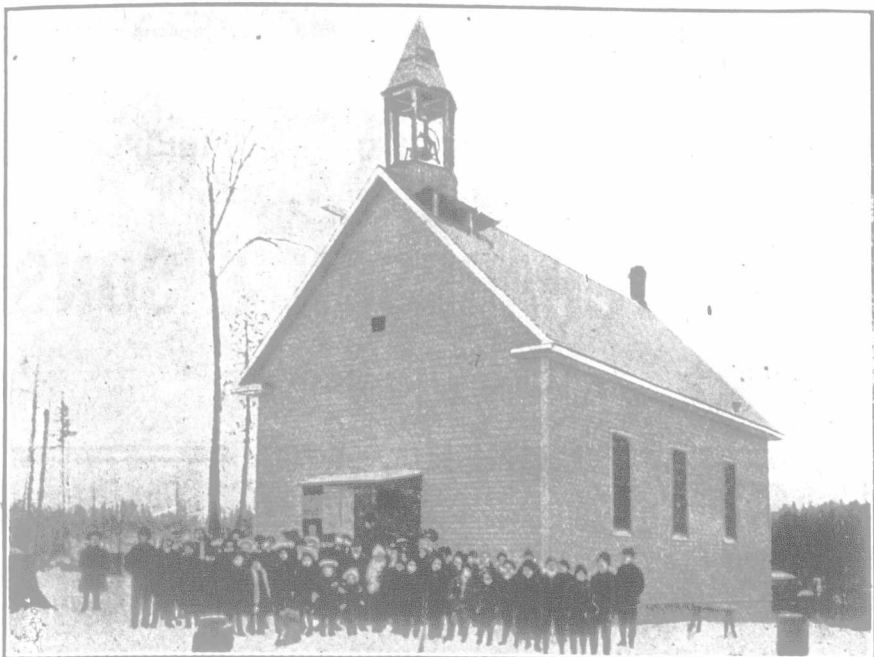
"This brings me to my last reflection, which is this: If this great Empire of ours has not been built up without courage and endurance—and those who knew its history best know well through what travail it has passed to its greatness—it is also not without a spirit of self-sacrifice that it can be maintained. We cannot have a world-wide Empire without all that that means, without paying a price for it, a price in effort, a price in labor, sometimes in danger, but always in duty. Unless every individual citizen of the Empire is prepared to accept that particular form of sacrifice, be it great or small—and in 99 cases out of 100 it is small rather than great—which he may be called on to perform then our Empire is not a reality but only a name. It is because I believe that the Empire is still an ideal to the best spirits within it, that it has a place in the consciences as well as on the lips of the majority of its peoples, and that it is a source of blessing to the world, that I think that on Empire day any assemblage of Englishmen such as this may, not merely without compunction but with pride and satisfaction, be called on to drink the toast which I now give you of 'The British Dominions Beyond the Seas.'"

#### THE BEAM IN OUR OWN EYE.

Canadians should not be in a hurry to turn up their eyes and their noses over the disclosures of the evils of the packing and canning industries of the United States. "Lord, we thank thee that we are not as the Americans are, grafters and corrupters of food and morals," is not exactly an appropriate prayer just at this time. When the investigations already begun in similar institutions on this side of the line are completed we may find that our ignorance, indifference and credulity has made possible a state of affairs just as corrupt in proportion to the population as that in the United States.

#### CRIMINAL CARELESSNESS

The wreck of a train on an English line last week has occasioned much comment on this side of the Atlantic, aside from the natural feeling caused by the death of several Canadian citizens. In the United States, and to a lesser degree, in Canada, such accidents are unhappily too frequent to attract very widespread attention. In the British Isles things are different. The road beds and train appliances are kept in perfect condition, and when an accident happens some person, not some object, is to blame. The guilty party is discovered and punishment of a very real kind follows, as a result serious accidents are rare. On this continent, so lightly has human life come to be regarded, the culprit, whether an individual or a corporation, is mildly censured or gently reprimanded. If an individual be probably loses his job, while the corporation goes merrily on its way and presently kills some more people.



SCHOOLS—THE PRISON STYLE.

THE SCHOOL BUILDING.

Wordsworth says that when infancy is left behind, "shades of the prison house begin to close upon the growing boy." When he reaches school age the shadow becomes a reality and a veritable prison swallows him up from nine o'clock until four, for five days in every week. His presence there, we all know is an absolute necessity, but he cannot see it that way, and in his mind is the eternal interrogation as he views the walls of his goal, "What's the use?"

A very strong factor in impressing the idea on his mind that he is a prisoner is the prison-like aspect of the building to which he is sent to be trained into a freedom-loving citizen. There are hundreds of such buildings in this country and new ones going up every month—bare structures dropped down on the prairie as if an erratic wind had blown them there. With few windows and small, no attempt at ornamentation, often not even a coat of paint, there is no beauty that a child should desire it—nothing but four walls and a roof. Yet here, surrounded by barren ugliness childhood must spend the hours of its most impressionable years.

Complaint is made by many parents that altogether too much time is spent in teaching subjects whose virtue lies chiefly in their aesthetic value, and too little attention devoted to the practicable subjects which will better fit the child to earn his own living. They are right too, in a sense. Too much time is spent, not because the subjects are valueless, but because it is sheer waste of time to try to open a pupil's mental eyes to the beauties of nature, of art and of literature, when before his physical eyes are ugly desks, broken walls decorated with a local grocer's calendar and a villainously executed chromo of King Edward, small windows with torn paper blinds, rough dirty floors and stove pipes ready to fall at a moment's notice. Truly a peculiar atmosphere in which to develop the love for the beautiful.

If a careful consideration is given to planning the new schoolhouse, and a little more money—wisely expended a little goes a very long way—spent in fittings and equipment, then the child has before his eyes for at least six hours every day a constant object lesson in good taste. He will not need many lessons from the teacher. A little guidance, a word or two to connect what he sees with what he is told will be all that is necessary. Beauty of form, tasteful arrangement, comfort and cleanliness are before him. He can absorb them while devoting his time to arithmetic and spelling and the other severely practical subjects considered desirable by his parents.

Throughout the whole of western Canada men are prospering, and as an outward and visible sign of their prosperity commodious barns and splendid houses are going up in increasing numbers. How many communities whose members are perfectly willing to be judged by their houses and their farm buildings, would be very reluctant to be judged by their schoolhouses? Yet the comforts and adornments are usual-

ly added to the home for the sake of the children. Why are they not as necessary for the school where those same children spend so many hours?

The illustrations accompanying this article speak for themselves. A momentary glance at the one will show the schoolhouse as it too often is. No prison could look so hopelessly severe, and its arrangement is such that the only way to improve it is to tear it down and start all over again. That will happen, too, in this case, for this particular school is in a growing town where it will soon be regarded as an eye sore. But what a shortsighted idea it was not to build so that improvements could have been added to the original building gradually! The other cut is of a rural school, and is a monument to the good taste of a man who, in prosperity has not forgotten his birthplace, but has found a way to keep his memory green for generations to come. More care and thought than money was spent upon it, and as a result learning within those four walls is a delightful thing.

A gift of such magnitude is not beyond the means of some of our western men who have made their money in the west. Many are not able to do so much. Still they need not deny themselves the pleasure of doing something. The main thing is to be with a building so planned that it is capable of being improved, and with grounds that can be beautified. To obtain those two



SCHOOLS—THE POSSIBLE HOMELIKE TYPE.

requirements is the duty of the trustees, and if they are neglectful it is the duty of the rate payer to administer a gentle reminder.

With the sensibly-constructed building and the hopeful grounds as a foundation, every person in the section can go to work. Private citizens have a chance to make public gifts that will be more genuine satisfaction to them than the thought of an expensive monument in the graveyard. This man can easily spare ten dollars for book-cases and that man can give a book or two each year to help fill them. Some one can present a flag and flag-pole, some one else can add shrubs and vines to his next order to the nurseryman and decorate the school grounds with them. The woman who wants her children's tastes educated can choose a good picture to hang on the walls, or send a potted plant. The children will appreciate it all, will show their appreciation by taking care of what is placed in their charge, and will be eager to add some touches of their own.

It can be done. It ought to be done. Will you help do it?

At the cafe: "Waiter take away this soup. It is as cold as ice."

"Oh, you must be mistaken, sir! I tasted it as I was bringing it in; and it's nice and hot, sir!"

"Tasted it!"

"Oh, no, sir! Beg pardon, sir. I wouldn't think of doing such a thing sir! I only put my finger into it, sir!"

THE WESTERN TOUR OF THE WOMEN'S PRESS CLUB.

The Canadian Women's Press Club is a comparatively young organization—but having among its members many experienced journalists. The third annual convention was held in Winnipeg on the 8th and 9th of June and to it came thirty two members of the club representing papers from Halifax to Victoria, as well as some American visitors who were interested in the work in Canada. The two convention days were filled to overflowing. In the morning much important business was transacted and the afternoons and evenings were given over to outings and other forms of entertainment arranged by the citizens of Winnipeg and the provincial government, so that standing on the eastern border of western Canada the visitors caught a glimpse of that promised land which welcomes strangers so heartily.

It seemed a pity that they should turn back with but a glimpse, and the pity of it appealed to the Western Canada Immigration Society with the result that a car was placed at the disposal of the Press Club and as many members as could be accommodated in it were offered a trip over the C. N. R. to Edmonton and Banff, returning over the C. P. R. to Winnipeg. All could not go and those counted out were endeavoring to feel not too envious over their comrades' good luck when through the influence of Mr. George Ham the C. P. R. offered a car to carry the other members of the club over the C. P. R.



THE CANADIAN WOMEN'S PRESS CLUB.

From a photograph taken at Deer Lodge, Winnipeg, June 8th, 1906. On the left of Mayor Sharp who sits in the centre of the front row, is "Kit" of the Mail and Empire, while on his right is Mrs. Cynthia Westover Alden, President of International Sunshine Society.

to Banff, there to connect with the first contingent. The ladies who were guests of the Immigration Society were: Mrs. Katherine Coleman ("Kit"), *Mail and Empire*, Toronto; Madam Frechette, Ottawa; Mrs. Cynthia Westover Alden, President International Sunshine Society; Mrs. Knappen, Western Canada Immigration Association; Miss Murphy, *Chicago Inter-Ocean*; Miss Anson, *Minneapolis Journal*; Miss Smith, *Pittsburg Dispatch*; Miss Agnes Deans Cameron, Victoria; Miss Barry, ("Francois") Montreal; Miss Lindsay, *Winnipeg Free Press*; Mrs. Balmer Watt, *Edmonton News*; Madame Gagnon, *La Patrie*, Montreal; Mrs. Storer, Battleford; Miss Randal, *Winnipeg Telegram*; Miss Katherine Coleman, *Hamilton Herald*; Miss Wallace, Halifax. On the other car were: Mrs. Simpson Hayes, President of the C. W. P. C.; Miss Le Boutillier, *Le Nationaliste*, Montreal; Miss Corbett, *Kingston News*; Miss Barter, *London Advertiser*; Mrs. Marshall, *Regina Leader and Standard*; Mrs. McLagan, *Vancouver World*; Miss Dawson, *Toronto Telegram*; Miss Lediard, *Winnipeg Farmer's Advocate*; Miss Fraser, *Toronto East and West*; Mrs. Ruttan, *Woodstock Sentinel-Review*; Mrs. Slipper, *Fort William Times-Journal*; Mrs. Atkins, *Vancouver Province*; Miss Benson, *Winnipeg*; Miss Hughes, *Ottawa Citizen*; Mrs. Baxter, *Saskatoon Phoenix*.

Thanks to the wise arrangement of stops and the warm hospitality of the

townspeople where stops were made these newspaper women will go back to their work free from the erroneous ideas of the West that had filled their mind previously. Many a cherished notion in regard to prairie and bluff and mountain was thrown overboard as useless, but there was abundance of good material to take its place. Mountain tops covered with snow looking down into rich valleys clothed with verdure had existed for many of the party only in photographs and picture post cards until they saw Banff. Irrigation ceased to be a geography definition after a day spent in Lethbridge and the towns to the South of it. The wheat fields of Brandon, Indian Head and Regina destroyed the idea that these areas were to the eastern fields cousins once enlarged; while herds of horses and cattle and huge flocks of sheep feeding in Alberta only strengthened the conclusion that the half had not been and could not be told about this great land, but it must be seen to be at all appreciated. From Winnipeg to Banff and back again the visitors received object lessons of the most practical nature to impress upon them and make real to them all that they had heard and read about western kindness, hospitality and progress. So enthusiastic were they over the West and its possibilities that in the columns they use, western Canada will be held up as a most delectable land to the man who desires to progress and who is not afraid of work.

## To Suffering Men and Women

I can cure you of any and all chronic, organic and nervous diseases without the use of drugs, surgery or electricity in any form, and without pain, and to stay cured. No matter how long standing or deep seated your disease I can cure you. **Consultation free during Winnipeg Fair.** One treatment will convince you of what this wonderful new science—Osteopathy—can do for you. Consultation from, 1.30 to 9 p.m. during fair.

**J. H. MULLALY, D. O.,** Suite 2, old Stobart Block,  
290 Portage Avenue.

CUT THIS OUT NOW LEST YOU FORGET IT.

KINGSTON

TORONTO

WINNIPEG

## JAS. RICHARDSON & SONS

Grain Dealers

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**WINNIPEG, MAN.**


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Highest Prices paid for all kinds of Wheat, Oats, Barley and Flax. Special facilities for handling low grade grain.

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**CORRESPONDENCE SOLICITED**


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Write for our shipping terms and sample bags. Advice on best methods of shipment promptly furnished.

**TRIAL CONSIGNMENTS SOLICITED**

REFERENCE: Any Financial Agency

## Better the Butter

Give it that delicacy of flavor which adds to the original tastiness of the butter without taking from it, by using fine, pure Salt

Salt that dissolves at once

Salt that works in evenly, easily, quickly

Salt that does not cake or harden

## Windsor Salt

Every grain is a perfect crystal, with all its natural strength preserved.

And, because it is all salt and strong salt, less gives a better flavor to more butter than other brands. It is acknowledged to be the finest and purest.

Used for years by prize-winning butter makers at the leading agricultural fairs.

In spite of the fact that it goes farther and betters the butter, Windsor Salt costs no more than any other salt.

For the same reasons of strength, purity and fineness, Windsor is the best Table Salt.

At Dealers everywhere

Western Canada's  
**Largest Jewelry Stores**



THERE is nothing accidental about our position in the watch and jewelry market. It has been gained by merit alone. We have not only the largest stores, but the most comprehensive stock of

**Diamonds, Watches and Jewelry**

We take much pride in exhibiting the output of our workshops, as we feel it is the best that skill and material can produce. We make a specialty of mounting and setting diamonds and precious stones, keeping constantly a staff of expert workmen for this purpose.

WE ARE NOT diamond cutters, as all fine diamond cutting is done in Amsterdam and Antwerp. Many attempts have been made to cut diamonds in America, but owing to lack of experience and the enormous expense have been unsuccessful.

Accurate lenses for spectacles and eye glasses are ground in our workshops.

WE WANT YOU to see our exhibit and visit our stores when in the city, whether intending purchasers or not

"Dingwall Diamonds" are Pure

"Dingwall Watches" Reliable

"Dingwall Jewelry" of High Quality

**D. R. DINGWALL, Ltd.**

Sign of the Street Clock 424, 586 & 588 Main St. Jewelers and Silversmiths

**JOHN LEAVES THE HOMESTEAD.**  
You're going to leave the homestead,  
You're twenty-one to-day,  
And the old man will be sorry,  
To see you go away.  
You've labored late and early  
And done the best you could;  
I ain't a-going to stop you,  
I wouldn't if I could;  
Yet something of your feelings  
I s'pose I ought to know;  
Though many a day has passed away—  
'Twas forty years ago—  
When hope was high within me,  
And life all lay before,  
That I with strong and measured stroke  
"Cut loose, and pulled from shore."  
The years they come and go, my boy  
The years they come and go;  
And raven locks and tresses brown  
Grow white as riven snow;  
My life has known its sorrows  
Its trials and troubles sore  
Yet God with all has blessed me  
"In basket and in store."  
But one thing let me tell you  
Before you make your start,  
There's more in being honest,  
Twice o'er than being smart,  
The rogue may seem to flourish,  
And sterling worth to fail,  
Oh! keep in view the good and true,  
'Twill in the end prevail.  
Don't think too much of money,  
And dig and drive and plan,  
And rake and scrape in every shape  
To hoard all that you can.  
Though fools may count their riches  
In shillings, pounds and pence,  
The best of wealth is youth and health,  
And good sound common sense.  
And don't be mean and stingy,  
But lay a little by  
Of what you earn—you will soon learn  
How fast 'twill multiply;

So when old age comes creeping on  
You'll have a goodly store  
Of wealth and happiness and health,  
And maybe something more.  
There are shorter cuts to fortune,  
We see them every day,  
But those who save their self respect,  
Climb up the good old way.  
"All is not gold that glitters,"  
And makes the vulgar stare,  
And those we deem the richest  
Have oft the least to spare.  
Don't meddle with your neighbors,  
Their business or their cares  
You'll find enough to do my boy  
To mind your own affairs.  
The world is full of idle tongues,  
You can afford to shirk,—  
There are lots of people ready  
To do such dirty work.  
And if amid the race for fame,  
You win the shining prize,  
The humble worth of honest men  
You never should despise;  
For each one has a mission  
In life's unchanging plan;  
Though lowly be his station,  
He is no less a man.  
Be good, be pure, be noble  
Be honest, brave and true,  
And do to others as you would  
That they should do to you;  
And place your trust in Christ, my boy,  
Though fiery darts be hurled,  
And you can smile at Satan's rage  
And face a frowning world.  
Goodbye, John, may kind Heaven guard  
Your footsteps day by day.  
The old house will be lonely  
When you have gone away.  
The cricket's song upon the hearth  
Will have a sadder tone;  
The old familiar spots will be  
So lonely when you're gone.  
Winnipeg. E. A. CUBBIDGE.

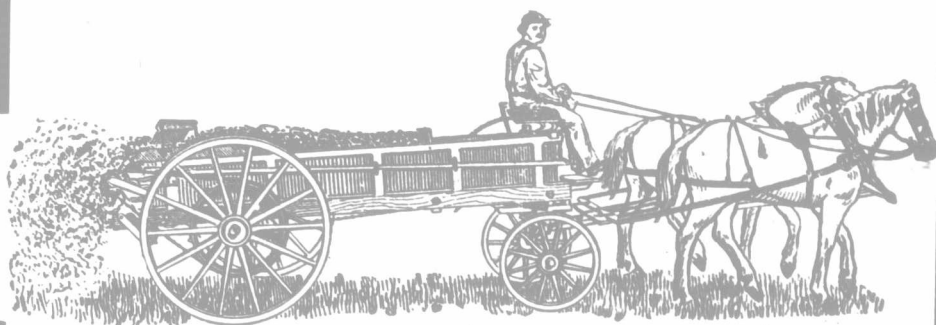
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**PLOWS** of every Style and Size .. || **Disc and Drag .. HARROWS**

Feed Grinders, Ensilage Cutters, Soufflers and the Famous "Success" Manure Spreader ..

Remember the .. THE BEST MANURE SPREADER made in the World ..



**A Few of the many Advantages in having a "Success" Manure Spreader**

With one man and a team it will spread as much manure in a day as five men and two teams, and spread it better.

The manure will go three times as far as when spread by hand and will produce 15 per cent. more crop.

The spread will be uniform and the manure thoroughly pulverized, and is better and more quickly available for the crop; and, perhaps the most important of all, is the use it can be put to for top-dressing, and will be recognised by the farming community as a long-felt want for this reason alone—because top-dressing makes a sure crop, prevents freezing and thawing, protects the crop from dry, cold winds, and also acts as a mulch after the wheat starts to grow.

We have sold a large number of these machines in the west this year and the demand is rapidly increasing.

The farmer's prosperity depends on the fertility of the soil and when you secure a machine that makes your soil more fertile and compels it to produce more crop you have increased your capital and bettered the foundation on which you must necessarily build.

This is what the "Success" Manure Spreader will do for you and the result of its use will be seen for years to come.

Write for free Catalogue

**THE PARIS PLOW CO. Limited**  
**WINNIPEG, MAN.**

Warerooms: Corner Logan and Nena.

A man who was something of a gourmet ordered a dinner for himself and his party which, from the menu should have been very palatable, but apparently it was not so. Course succeeded course, and toward the end of the meal the host could restrain himself no longer. He called up the waiter and expostulated. "I ordered a good dinner, and we have waited patiently for some satisfactory dish. The soup was a failure, the fish was a disappointment, the entrée uneatable, and I am sorry to tell you that during the whole dinner there has been nothing worth looking at." The waiter looked troubled for an instant, and then, brightening up said, "If you wait a moment, sir, I will bring you the bill."

A Southern woman tells about dining in Boston once, when next her sat a homely little old gentleman, who wanted to know how she passed the time in the country with her old father. "Well, we read." "What do you read?" "Chiefly 'The Autocrat of the Breakfast Table.'" "Don't you get tired of it?" "Oh, no. When we get to the end we simply turn back to the beginning." The old gentleman chuckled, and made a remark implying that The Autocrat was no great thing among books, and the lady was rather surprised at his disparaging air. After dinner she demanded of her hostess the name of the unappreciative old gentleman and was told that it was Dr. Holmes.—Boston Transcript.

**REMARKS FROM THE POP.**

She's taught me that I mustn't bark At little noises after dark. But just refrain from any fuss Until I'm sure they're dangerous. This would be easier, I've felt. If noises could be seen and smelt.

She's very wise, I have no doubt. And plans ahead what she's about, Yet after eating, every day She throws her nicest bones away If she were really less obtuse She'd bury them for future use.

But that which makes me doubt the most Those higher powers that humans boast, Is not so much a fault like that, Nor yet her fondness for the cat. But on our pleasant country strolls Her dull indifference to holes!

O, if I once had time to spend To reach a hole's extremest end, I'd grab it fast without a doubt, And promptly pull it inside out Then drag it home with all my power To chew on it in a leisure hour.

Of all the mistresses there are, Mine is the loveliest by far— Fain would I wag myself apart If I could thus reveal my heart. But on some things I must conclude, Mine is the saner attitude. —BURGES JOHNSON, in Harper's Magazine.

# The Favorite Tea of the West

Many teas which go alright in England and Eastern Canada give little satisfaction here on account of the peculiar nature of our water.

## Blue Ribbon

TEA is blended from specially selected leaf, which will draw as well in the hard water of this country as in soft water.

If you are not already using Blue Ribbon Tea, try a pound

and test it in any way you please. You will enjoy its rich flavor, delicate fragrance and unusual strength.

Lead Packets, 40c and 50c a pound.



CHALK dust is fine and white, but it won't make good bread. Fine, white flour is all right as far as it goes, but if it lacks nutrition its other qualities amount to nothing as far as baking is concerned.

## Royal Household Flour

is not only the finest and purest of flours but also the most nutritious. It is milled by a process which gives you all of the nutritious properties of the wheat in the best form for your use. You can get it from your grocer.

Ogilvie Flour Mills Co., Ltd.  
MONTREAL.

"Ogilvie's Book for a Cook," contains 130 pages of excellent recipes, some never published before. Your grocer can tell you how to get it FREE.



# INGLE NOOK CHATS

## CLOTHES FOR THE CHILDREN.

To many a mother the dressing of the children becomes a matter of far greater importance than the garbing of herself. This is natural though it is a mistake to carry it to extremes. However, the pickaninnies must be clothed and it should be done as becomingly and comfortably as possible.

ciennes lace. For school and every-day wear, colored lawns, chambrays, Holland or grass linens, and gingham in pretty patterns are worn a great deal. Jackets and little boys' suits are made of serge, (white, navy or red) linen, piqué, or suitings showing in fine check. The home dressmaker has a wide field this season as to style in children's



ONE PIECE SUIT FOR LITTLE GIRL OR BOY.



CHILD'S COAT.



RUSSIAN SUIT.



SAILOR SUIT.

The Ingle Nook page will this week be devoted to children's clothes, for the benefit of those mothers, who perhaps, have a dressmaker fashion their own gowns, but who take pleasure in sewing for the little ones, and who will find a few hints useful.

For the Sunday and holiday frocks white is the favorite, though some of the delicately flowered muslins are seen on girls from eight to fourteen. These, however, soil almost as easily as the white and are apt to fade in the sun or the tub. Persian lawn, handkerchief linen, batiste, with trimmings usually of hand embroidery or valen-

clothes. There are more of what we might call stock styles than usual, and a clever brain and skilful fingers can adapt these in so many ways that the variety is almost endless. For instance, a very desirable dress for a girl is that made with quite a shallow yoke and elbow sleeves, the blouse tucked, gathered or shirred to give fullness and the skirt treated in the same way at the



SKIRT WITH STRAPS.



A PRETTY WHITE DRESS.

## OATS

SHIP your OATS to

G. B. MURPHY & CO.

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REFERENCES: EASTERN TOWNSHIPS AND UNION BANKS.

## OATS

## OATS

and obtain HIGHEST PRICES, also prompt settlements.

Kindly Mention the Farmer's Advocate When Answering Advertisements

waist band. A pretty white dress for best could be made on this plan with the yoke round and shallow, made of valenciennes insertion and the goods, a bertha attached to the yoke trimmed with the valenciennes edging which is also on the elbow sleeves. The skirt with two narrow ruffles or two wide tucks at the bottom, may be gathered at the top or laid in tiny tucks descending about four inches.

A very pretty and serviceable frock can be made by leaving off the yoke



ONE-PIECE SUIT FOR A GIRL.

which can be fastened by buttons to the band of the skirt.

The sailor suit has come back into popular favor. Made of linen, denim, gingham, or print it is splendid for summer wear, and of blue serge it makes the very best school dress for the fall. The best qualities of serge will wash well and pay very much better than the cheaper kinds. The suits of washing material will have the sailor collar and dickie trimmed with white braid for blue suits and red braid for Holland or natural linen suits. The serge will look well with either white or scarlet trimmings and tie. The skirt looks best when kilted.

Several one-piece suits are shown on this page and are the thing for very little boys and girls. They have the advantages of being easily made and easily laundered. The plaits—box-plaits usually—are stitched down to the waist and then let free. A loose belt is worn. Many are fastened down the side under a plait and some down the front. Trimming of bands, insertion or buttons may be used, and with some a sailor collar and tie is worn. Either wash goods or woollen materials may be used for these dresses.

For saving clothes and washing there is nothing more useful than the overall apron. These are not only useful but also may be made very pretty and becoming to the small people for whom they are made. These overall aprons are cut in two pieces and joined at the waist-band so that they look like one piece. They should be made of material sufficiently close so that dust will not penetrate, such as Holland, denim, ticking. They are made with full baby waists buttoned down the back. The necks may be cut square and the sleeves in one piece, buttoning from the wrist to well above the curve of the elbow, so that they may be unbuttoned and turned back to any desired height. This makes it possible to button it at the wrist and leave it open above, so as not to crush the newly-ironed dress sleeves beneath. The lower portion of this garment should be cut like bloomers except that the legs should be very much wider so as not to crush the skirts they cover. Elastic run in the bottom of the legs hold them above the knees and so allow the skirts full room.

entirely, making the gown of some dark material and wearing with it white guimpes with the full length sleeves coming below the elbow sleeves like cuffs. In very hot weather for little children the yoke and cuffs can be left off altogether and so give freedom and coolness.

Where, as often happens, a gown of good material has been outgrown by one child, it can be of service when cut down for a smaller lassie, by making a pleated skirt, pointed belt and wide shoulder straps of the material and wearing it with white or light-colored blouses

CHILDREN'S CORNER

SUCCESS TO THAT EXAM.

Dear Cousin Dorothy:—This is my first letter to the FARMER'S ADVOCATE. Pa has taken the ADVOCATE for two years and he likes it very well. I like reading the Children's Corner and thought I would like to see my name there too. I go to school with two brothers and one sister. We live two and one half miles west of Summerberry so we have to drive. We have a buckboard and a pony called Pete which we drive. I like going to school, I am thirteen and in the fifth class. I am trying to pass the public school leaving this summer. My father is a farmer and owns 480 acres of land. We have fourteen horses, three colts and eight cows. Our team took the prize at Wolseley last summer. I hope my letter will reach the Children's Corner.

IDA FLEMING.

THE BOYS ARE DOING BETTER.

Dear Cousin Dorothy:—I live on a farm four miles south of Oakville. My father has taken the FARMER'S ADVOCATE for some time and we think it is a very good paper. I enjoy reading the letters in the Children's Corner. We have forty cows, ten horses, three little colts, eighty hens and some ducks and geese. We have an incubator and a great many little chickens. My two sisters and myself go three miles to school. I like going to school. I am in the fifth reader. My studies are reading, spelling, arithmetic, geography, grammar and composition. I thought Glengarry School Days was very nice and was sorry when it ended. I see more letters from the girls than from the boys.

(Age 13 yrs.) MABEL ALEXANDER

GOING FARTHER WEST.

Dear Cousin Dorothy:—This is my first letter to the Children's Corner and I would like to see it in print. My father has taken the ADVOCATE for many years and he likes it very much. I like it too. I was very interested in the Children's Corner and in Glengarry School Days. I am sorry it is stopped. We have been living in Saskatchewan for two years, but papa and my big brother are gone farther west. They have got land and are gone to break and build. In stock we have got fifteen cows, seven horses and two colts. In poultry we have chickens, turkeys, geese and ducks. I go to school. I am trying for the fifth class. I am thirteen years old and I like going to school.

ALICE LINTOTT.

MOTHER'S HELPER.

Dear Cousin Dorothy:—As it is the first time I have written to the C. C. I think I will tell you about my brothers and sister. My oldest brother has gone on his own farm about five miles from here, and my sister is married and lives in Saskatchewan, and my little brother ten years old has four colts, three head of cattle, three sheep, three pigs and a number of chickens. He milks two cows night and morning, brings up the cows from the pasture and feeds the calves.

I am twelve years old. I have three head of cattle, one pig and a number of chickens.

Ma has no help so I try to help her all I can in the house. I wash the dishes feed the chickens and gather the eggs. On Saturdays I walk two miles for my music lessons. Pa farms a section of land. We have twenty one horses, seventy cattle, fifty pigs. A. MORROW.

Blue Ribbon Baking Powder Better than Sour Milk and Soda

Because the sourness or acidity of milk varies constantly, and the cook never knows just how much soda she should use to neutralize the acid. She is kept always guessing. If too much soda is used, the biscuit or cake will be yellow; if not enough it will be sour.

The regular quantity will always give the same result. All ingredients are proportioned with chemical exactness. Being pure and of the highest grade, there is not the least chance of variation.

There's no guessing when you use BLUE RIBBON BAKING POWDER.

For best results use Blue Ribbon Baking Powder. 25 cents a pound.

Let's Talk It Over . . .

You ought to know what Paint goes on your house if you expect it to last.

Depend on:—



The satisfaction you will get out of your house wholly depends on the Paint used.

Don't slight the fact that it takes as much of a painter's time, perhaps more, to put on a cheap grade of Paint as a good one.

Write for booklet "Something about Paint everyone should know before they paint."

G. F. STEPHENS & CO.

Paint and Color Makers Limited

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Patented Tanks and Sheet Metal Goods

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Registered Plan. Torrens Title.  
No Taxes. No Interest.  
We have only a few lots left.  
Murray Park Station on Property.  
Street Cars quite close and will soon  
be closer.  
Race Course opposite.  
Sturgeon Creek quite near.  
School and Church.  
Every Lot High and Dry.  
Take a Chance.  
Don't Miss This Opportunity.

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Lots 25x173

**\$40**

PER LOT

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\$2 Per Month

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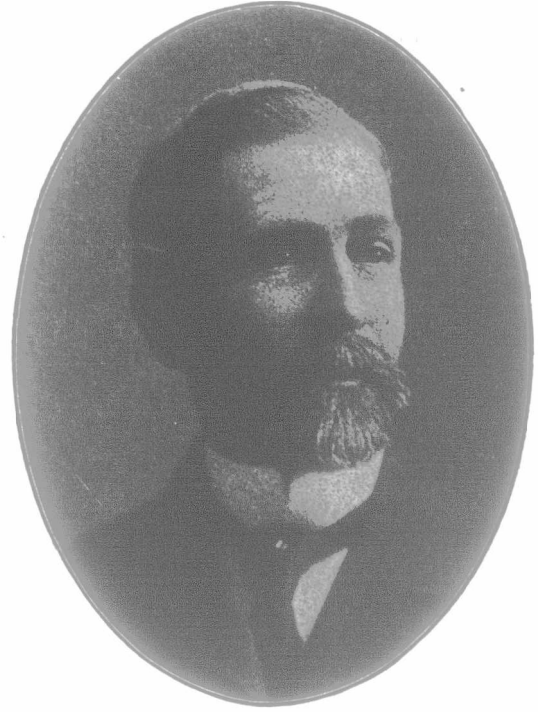
Office Open Evenings 8 to 10. Mail Orders Promptly  
Attended To. Phone 4289.

## CANADIANS IN THE UNITED STATES.

The opening up of Western Canada to settlers has brought into the country many who had no interest in it except as a place to make a living, but it has brought back also from across the border many who are Canadians born and who come back willingly to their old home bringing the children who have heard much of Canada but have never

show that Canada has no cause to feel ashamed of what her sons have accomplished away from home.

According to statistics the returns for the census of 1900 show that Canada has given of her sons to the number of 1,180,000, with an additional 526,000 born of Canadian parents in the republic. Of these Mr. Hall says: "How does the average exodus Canadian size up with his American neighbor? Social statistics, it is interesting to note,



MR. M. F. RITTENHOUSE, CHICAGO.

seen the land of their father's birth. This exodus from United States, into Canada has aroused interest in the subject of Canadians now in the United States and what they have done to add lustre to the records of the Dominion. Several articles dealing fully with the matter have been written,—Herbert N. Casson in *Munsey's* and Douglas Hall in the *Toronto Globe* having covered the ground most fully. These papers

especially the figures for crime, insanity and pauperism, are almost identical for both, though varying widely in the case of all other immigrants, even those of English speech. Common experience confirms the impression of substantial similarity, yet there are unmistakable points of difference. The Canadian, for one thing is not so eager and regardless of all proportion in his chase of the almighty dollar, nor is the virtue

Music

Our Specialities:

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Every Instrument Guaranteed.

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Our own manufacture. The best in the world.

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First quality, better than the best of other makers.

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Our amateur grade. As good as the best grade of other makers.

Guaranteed for 10, 6 and 4 years respectively.

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We can supply your every want with perfect satisfaction or money refunded.

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# MUSIC HOUSE

Everything in Music.

**WE ARE** Band Instrument Manufacturers, Engravers, Printers and Lithographers of Sheet Music and Music Books in every form.

**DEALERS**

You will save time, money and satisfy your customers by dealing with Canada's Greatest Music House.

We are equipped to supply you with your every want at the lowest possible rates of discount. Your orders are respectfully solicited.

We extend to you and yours a cordial invitation to make your headquarters with us when visiting Winnipeg's Annual Exhibition.

**WHALEY, ROYCE & CO.**

LIMITED.  
356 MAIN STREET, WINNIPEG, MAN.

Music

Our Specialities:

**"IMPERIAL GUITARS",  
MANDOLINS, and  
BANJOS,**  
are the best.

**"IMPERIAL" VIOLINS**  
have no equal.

**"IMPERIAL STRINGS"**  
for all String Instruments will give you every satisfaction.

Everything we sell you is absolutely guaranteed. Satisfaction under such circumstances is positively assured.

Send for catalogue mentioning goods you are interested in.

Music

Music



of the sour grape variety. He has a better appreciation of the value of leisure. He is less willing, at least in his untutored state, to put his all on the hazard of a single throw than his American cousin—'slower,' the later would put it; 'cannier and more level-headed' he would prefer to phrase it himself. Thoroughness, reliability and a good educational grounding are among his usually recognized assets. Whatever his qualities, he has certainly made his mark in every field of American endeavor."

It is perhaps well to make some attempt at classification, and though but a few of each class may be mentioned here, these are representative men in their respective callings. Every reader, no doubt, will be able out of his own experience to add to the list in each line of work.

Let us begin with the preachers. At the head, as the man whose influence has been widest, we must place Francis E. Clark, the founder and leader of the great Christian Endeavor movement. Quebec may be proud to own as a son one who has done so much for young people. W. W. Niles, also of Quebec, is now Bishop of New Hampshire; Arthur Williams, (Owen Sound) is Bishop Co-adjutor of Nebraska; Joseph George, formerly of Montreal Congregational College is President of the Chicago Theological Seminary. Archbishop Quigley of Chicago and Archbishop Riordan of San Francisco are eminent leaders in the Roman Catholic church, and Canadians by birth.

There are said to be 14,000 Canadian teachers in the United States. At the head of this noble army of instructors is Jacob Gould Schurman, who claims the Maritime Provinces as his birthplace, who was grocery clerk and college student in Nova Scotia. He was called to Cornell in 1886 and in 1892 was made its head. In 1899, President McKinley chose him as leader of the Phillipine Commission. James MacLean, a Mayfair boy and graduate of Toronto, is president of Idaho University; Hamlin, Minnesota, has at its head Dr. Bridgman, a graduate of Victoria. The O. A. C. has sent some good men into the States to advance the

science of agriculture, among them being, W. L. Carlyle of Colorado, Robert Shaw of Michigan, W. J. Kennedy of Iowa, Thomas Shaw, of Minnesota, H. A. Morgan of Tennessee. Simon Newcomb, formerly of Nova Scotia, has gathered in the greatest array of titles, being the possessor of nine L.L.D.'s, four Sc. D.'s and three miscellaneous Doctorates. He is one of the eight outsiders who are members of the Paris Academy of Science, and legislation is pending to allow him to accept a decoration from the Kaiser.

In the world of commerce Canadian men are filling important places, owing perhaps to that thoroughness and reliability mentioned in the paragraph quoted above. Chief in the public eye at the present moment is James J. Hill, who was born near Guelph, leaving there at eighteen to go to the then tiny village of St. Paul. His first railroad work was the reorganization of the St. Paul & Pacific Railway, in which undertaking he had the assistance of George Stephen and Donald Smith—three men who have all made good. Now there are 20,000 miles of the Hill system created and run by James J. Hill. Other men who have come to the front in American railroading are: David Wegg, (St. Thomas) solicitor for Chicago, railroads; Nicholas Monsarrat, (London) president of the Hocking Valley Co. Hugh Chisholm, (Niagara-on-the-Lake) is now a millionaire mill owner with a mansion on Fifth Avenue; E. T. Burrowes, (Sherbrooke, P. Q.) and G. H. Worthington, (Toronto) have made successes respectively in the wire screen business in Portland and the Cleveland Stone Co. Harry Black, chairman of the company that built the Flat-iron and other New York skyscrapers, was a cobourg boy. Elgin Gould, (Oshawa) is working out the problem of housing New York's wage-earners. M. F. Rittenhouse, Chicago's lumber millionaire, has not forgotten the little Ontario village (Jordan) which was his old home, as a model school house and the land for an experimental fruit farm prove. James Buchanan (Oil City) is now president of the Pittsburg Trust Co., and McIntosh Brothers and McBean uphold the honor

### Opened Business in Brandon

My business connections in the prairie provinces have become so numerous that the time has arrived for me to establish a barn convenient to my customers and where the horse buying public can get a look at the stock I have to offer.

My first shipment consisting of  
**Clydesdale, Shire, Hackney Stallions and Fillies and Spanish Jacks**

is now on hand. I can give the best value in horse flesh to be had in America because I pay spot cash when I buy, address

**J. B. HOGATE, Brandon, Man.**

Eastern Branch Weston Ont. Temporary address Brandon Hotel



### BRITISH COLUMBIA

(Near Vancouver, population 55,000)

### FARMING & FRUIT LANDS

#### DELTA OF THE FRASER

We are selling 20 acre blocks from \$150 to \$200 per acre. \$30 to \$40 per acre cash, balance in 1, 2, 3 and 4 years at 6 per cent. This land is composed of the finest alluvial soil in the world. Land all underdrained and has been cultivated. About two hours' run from Vancouver. Oats average 62 bushels to the acre.

#### BURNABY FRUIT LANDS

In 5 acre blocks, close to electric tram, about 30 minutes from Vancouver and 15 minutes from New Westminster. Cheap settlers' rates on tram cars. Price \$75 to \$150 per acre. Terms \$15 to \$30 cash, balance in 1, 2, 3 and 4 years at 6 per cent.

Maps and further particulars on application to

**MAHON, McFARLAND & MAHON**

Real Estate, Insurance and Loans

VANCOUVER, B.C.

### SASKATCHEWAN LANDS.

We own 5,000 acres in the South Elbow country. This is choice wheat land which cannot be beaten, situated on the Moose Jaw-Lacombe branch now building. 30,000 acres in the Goose and Eagle Lake country, wholesale or retail. 8,000 acres between Davidson and the river.

**BALFOUR, BROADFOOT LAND COMPANY.**

Seattle, Tacoma and  
Portland are terminal  
points on the N.P.R

High  
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Trains

FOR

St. Paul, Minneapolis,  
Chicago, Toronto, Mon-  
treal, Victoria and Van-  
couver are reached over  
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Reaches the Great Cities  
**\$60 Round Trip**

On Sale June 1st to September 15th

Stopovers en route including

**DETROIT LAKES**



of the North Pacific Coast  
**\$60 Round Trip**

On Sale June 1st to September 15th

Stopovers en route including

**YELLOWSTONE PARK**

N.P.R. train service is known for its "ted" is the crack train of the North-west. cars and Palatial Observation car. It runs than 2,000 miles.

**H. Swinford**

General Agent

341 Main Street, Winnipeg

High  
Toned  
People

perfect character. The "North Coast Limi- It carries Dining, Tourist, Pullman Sleeping as a solid train St. Paul to Portland, more

**W. H. Collum**

City Ticket Agent

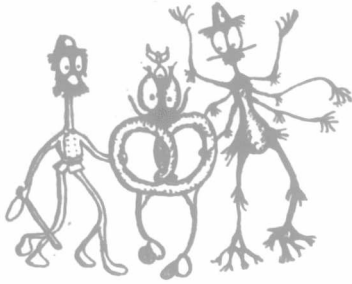
341 Main Street

Winnipeg

## Exhibition Visitors

You are cordially invited to call at our office, 253 Grain Exchange, when we will be pleased to make your acquaintance and explain our satisfactory way of handling grain shipments. If you expect to have Wheat, Oats, Barley or Flax to ship or sell this fall, it will be to your advantage to see us.

**Thompson, Sons & Company**  
Grain Commission Merchants. Grain Exchange, Winnipeg, Man.



### INSECT BITES

You can quickly cure all irritation, inflammation, swelling and itchiness by applying

## 7 MONKS OIL

The greatest remedy on earth for pains and aches of all kind.

Sold everywhere for 25 cents a bottle.

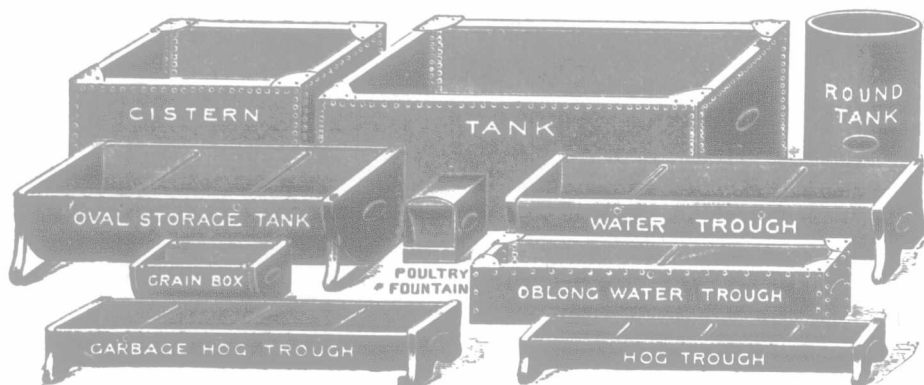
**7 MONKS COMPANY**  
Box 742 - - - - - Winnipeg.

Our plaster mill at Gypsumville has been burned. We are now building in Winnipeg the most modern Hard Wall Plaster Mill on the continent. We will have everything running this fall and will be in a position to supply

## HARD WALL PLASTER, WOOD FIBRE PLASTER, PLASTER OF PARIS, etc.

at prices that defy competition. Meantime we can supply all our customers with imported plaster at the lowest possible figures. Write us for particulars on this.

**THE MANITOBA GYPSUM CO. LTD., 806 UNION BANK, WINNIPEG**



**Our Line!—Neat, Natty, Strongly Built—Made to Last and Made Right**

Give them a coat of paint once a year and we guarantee them for ten, but they will do better than that

**They will last an ordinary lifetime**

Owing to the price of wood and its scarcity, there is a great demand for these goods.

**We know you want them—Write us, we will be delighted to correspond with you. Get our free Catalogue from the Melotte Cream Separator Co., Winnipeg.**

**Steel Trough & Machine Co. Ltd. Tweed, Ont.**

That lot of fillies advertised by Mr. S. J. Prouse in another column is deserving of more comment than we have had opportunity to give them. In the bunch there are two five-year-olds, one four-year-old, eight three-year-olds, thirty-five two-year-olds and seven yearlings. This large assortment offers the singular advantage that should a man wish to match up a pair he can do so without the least trouble. Three of the lot are blacks, there is a nice pair of roans and the rest are bays and browns.

We have already called attention in this issue to the breeding of these fillies. They have been selected by Mr. Prouse

from the best breeders in Scotland and with the especial need of Canadians in view. The experiment of selling direct from Scotland to Western farmers is being tried by Mr. Prouse, and it is confidently expected that the farmer will take advantage of this opportunity of buying immediately on arrival and so encourage the enterprise that brings the best of horse stock to the very stable doors. Remember the date of the sale July 27th at the C. P. R. sale pavilion. Catalogues of the breeding of the stock will be available at that time and on the fair grounds at the Farmer's Advocate tent.

of Glengarry as contractors in New York.

Of Canadians who have won honor in medicine in the republic, Dr. Osler (Toronto) is best known. His claim to renown rests upon other ground, unaffected by the publication of the theory advanced in jest that a man's age of usefulness is over at forty. When Dr. Osler resigned his position in John Hopkins to go to Oxford, his place was filled by another Canadian, Lewellyn Barker, also of Toronto. Thomas Allen Sanger Brown, John R. Kippaxe are all Canadian-American physicians.

Those who have read American law and are now practising include Charles Gardiner, the general attorney for the subway and elevated lines of New York; Ferdinand Shack (Toronto) a New York lawyer; Ashley Gould (Nova Scotia) associate Justice of the District of Columbia Supreme Court. Edward Sims solicitor for the department of Commerce and Labor, Washington, and John D. Lawson, Dean of the law faculty of Missouri University, are both old Hamilton boys. Judge Merritt Gordon (Quebec) now in Spokane, resigned from the bench to become the guardian of James J. Hill's legal interests. Judge McMahon who removed the disgrace of the debtor's prison from New York state was born in Canada.

Some Canadian stage favorites who have won popularity in the United States are Clara Morris, (Toronto) who writes as well as she acts; May Irwin (Whitby) to whom many owe the bless-



Elderly Spinster—"You know, Doctor, I'm always thinking that a man is following me. Do you think I suffer from hallucinations?"

Doctor—"Absolutely certain you do, ma'am."—Sketch.

ing of a hearty laugh; Margaret Anglin (Toronto) whose power in emotional roles is marvellous. James K. Hackett (Wolfe Island), Marie Dressler and Julia Arthur have succeeded far beyond the ordinary on the American stage.

American literature has been greatly enriched by the contributions of Canadians who have gone to live in the United States, the majority in New York. Bliss Carman and Charles G. D. Roberts went from New Brunswick to New York as they followed the call of the muse. So high a position have they obtained that for the purity of their verse they were named two of three men who were quoted as proof that poetry was not dead in the republic. Norman Duncan (Newfoundland) Arthur Stringer, (Montreal) Edmund Vance, and Palmer Cox the creator of the Brownies, are all products of the Dominion.

In the ranks of journalists and newspaper men Canadians are found who have done good work.—Slason Thompson of Chicago; Thomas Shaw; James Creelman, the famous interviewer and war correspondent; Hubert Whitmarsh who went to the Philippines to write and remained to govern a province; and Acton Davies the dramatic critic of the New York *Evening Sun*.

The half has not been told, nor can it be. Many, many names of those who have honored their birthplace by their good work in another land, have been left out of this article, but enough has been told to show that we have within our borders material which other nations are glad to welcome, and which to retain here every effort should be made by all who have the country's interest at heart.



**The Peters Double Cylinder Force Pump.**

**The Best Hand Force Pump that Money can Buy. The Most Profitable to the Dealer. The Most Satisfactory to the Customer. It's a Pump that Pleases Everybody.**

It has double the capacity of any other Pump because it has **Two Cylinders.** You save 50% labor and 50% wear on your Pump.

There is **no rod** inside the pipe to obstruct the flow of water or cause **friction.**

It will operate 50% easier than any other Pump, because one Rod will balance the other. A four year old child can operate this Pump in a 50 ft. well. For Durability it has no equal: the cylinders being seamless brass, the pipe and rods all galvanized, and—best of all—it has no **STUFFING BOXES** to wear out.

You can attach Hose, Windmill, or Gas Engine. It is a Fire Department in itself because it gives a continuous stream of water.

When in Winnipeg don't fail to see this Pump at

**W. JOHNSTON & CO., Limited**  
Agents, WINNIPEG, MAN.

**We want every Dealer to investigate.**  
Manufactured by PETERS PUMP CO., Kewanee, Ill.

### Heavy Woven Hard Steel Wire Fencing

Our style No 20, 30 cents per rod, freight prepaid, to any station in Manitoba. 25 rod rolls. Write for sample and full price list.

**NATIONAL FENCE CO., MERRICKVILLE, ONT.**

**DON'T ALLOW POTATOE BUGS OR OTHER INSECTS TO DESTROY YOUR PLANTS.**



**The Wonderful**

## AUTO-SPRAY

costs but a few dollars and will rid you of all plant insects as well as vermin in stables, poultry houses, etc. Also prevents rust, smut, blight, etc. Full information free. **Agents Wanted.**

**Buchanan Nursery Co.**  
ST. CHARLES, MANITOBA.

**Come out and see our Nurseries when attending the Winnipeg Industrial Exhibition, or any other time.**

# THE QUIET HOUR

## HELPING TO BEAR CHRIST'S BURDEN.

And as they led Him away, they laid hold upon one Simon, a Cyrenian, coming out of the country, and on him they laid the cross, that he might bear it after Jesus.—St. Luke 23: 26.

"O God," I cried "why may I not forget?  
These halt and hurt in life's hard battle  
Throng me yet.  
Am I their keeper? Only I—to bear  
This constant burden of their grief and care?  
Why must I suffer for their grief and care?  
Why must I suffer for the others' sin?  
Would that my eyes had never opened been!"  
And the thorn-crowned and Patient One  
Replied: "They thronged Me too; I too have seen."

"Thy other children go at will," I said,  
Protesting still.  
"They go, unheeding. But these sick and sad,  
These blind and orphan, yea, and those that sin  
Drag at my heart. For them I serve  
and groan.  
Why is it? Let me rest Lord. I have tried—"  
He turned and looked at me; "But I have died!"

"But Lord, this ceaseless travail of my soul!  
This stress! This often fruitless toil  
These souls to win!  
They are not mine."  
He looked at them—the look of One Divine!  
He turned and looked at me; "But they are MINE."

"O God," I said, "I understand at last.  
Forgive and henceforth I will bond-slave be  
To Thy least, weakest, vilest ones,  
I would not more be free."  
He smiled and said, "It is to ME."  
—LUCY RIDER MEYER.

Though Christ's servants are freed men, loosed from their chains, yet they are driven forward at a pace that slaves know nothing about—constrained by the compelling force of love. It is impossible, as St John tells us, to love God unless we love our brother, and if we care for him in the least, we cannot help trying to lift his burdens from him, or, if that is impossible, at least sharing his cross to some extent. Those who set out to follow in the path Christ trod must be prepared not only to shoulder their own burdens manly and cheerily, but also to bear the burdens of other people. And they are doing it, too, in your neighborhood and in this, though sometimes the willingly-accepted burdens are crushing in their weight.

Yesterday I attended a meeting of "Rescue Mission workers," and should like to tell you about it. This convention was only suggested about ten days before, and got up in a hurry, yet there was a large gathering of enthusiastic men and women who are all actively engaged in God's own work—for the Great Shepherd says: "I will seek that which was lost, and bring again that which was driven away, and will bind up that which was broken, and will strengthen that which was sick." Though such work cannot be energetically carried on without severe strain on body and soul, on the part of the worker, yet if one might judge from the beaming faces around me, the work must bring wonderful joy as well. They seemed to believe thoroughly in the necessity of loving both the work itself and the individuals for whom they worked, and did not forget to emphasize the necessity for exercising the "Divine gift of common sense." They did not think it wise to approach strangers in the startling fashion of the barber who had been converted and was burning to convert someone else without delay. He got a

customer well lathered, sharpened his razor carefully, and then demanded, sternly, "Are you ready to die?"

"No! and you are not going to kill me, either!" exclaimed the man in the chair, as he hastily fled, having entirely misunderstood the good barber's intentions.

One told how she had gathered in from the street many and many a poor girl who was drifting down the black tide of hopeless misery, homeless and friendless; but who dropped her brazen shield of impudence as soon as she found that one person in all the world really cared for her. She described how once she persuaded a girl of seventeen to turn her back on the life she was leading, and the older girls, her companions, said: "Yes go with the lady, better get out of this, while you can." She turned to them and said: "Won't you come too?" but they answered: "We can't, we're too far gone." She declared that terribly sad answer had haunted her ever since. Then a sweet-faced woman mounted the platform and told us something of the difficulties which must be mastered in caring for the "girl of the street", after she had entered the Home opened so gladly for her. Who can wonder if girls who have never been trained or taught, never known any home but a miserable tenement, crowded with noisy children and drunken parents, proves wild and wayward. Who can wonder if these girls, gathered from the lowest surroundings, sometimes quarrel among themselves or rebel against the needful discipline of their new home. Old ways cannot be altered easily, and it is often a slow and weary task to build up such souls in the beauty of holiness.

Other men and women spoke eagerly about the special rescue mission work in which they are respectively engaged. I was especially interested in the account of work done amongst the children and the Hebrews. One speaker declared that the foreign children, who are about us in such numbers, have been repressed, and learn with marvelous quickness. He said that a teacher told him once that as soon as emigrant children learned the language and could read a little, they would learn as much in a week as our own children in a month. He emphasized the truth that it is the "personal element" that counts, that workers must make friends with the children if they want to help them. He said that he would not exchange one volunteer worker who really loved children for a hundred paid workers who were only trying to build up some institution—though paid work has a peculiar value of its own, being generally more systematic and reliable. He said he had been teaching a S. S. class of wild boys—Italians, Jews, etc.—and thought they never listened at all to the story of the life of Christ. He was often inclined to call in the policeman, they were so unruly. But at the end of three months, he reviewed the course and was amazed to find that hands went up and fingers were snapped all over the room, and all the boys wanted to answer at once. They knew the whole story, though how they had learned it was a mystery to the teacher. He said the children crowded into S. S., no matter what the weather was like. If a room and teachers could be provided you only had to walk round the block and invite the children, and they would crowd in. I have found out long ago that if you want children, for classes, all that is necessary is to invite them in—keeping them, though, and teaching them anything really useful, is by no means so easy.

Then a Christian Jew made a very earnest appeal on behalf of his own people, which was especially interesting to me as nearly all the children in our neighborhood are Jews. He said that we ought to pay our debts, and that we had not been paying our debt to the Jews as we should. "Where did you get your liberty, your good laws and other things of which you are proud?" he demanded. "Did you get it from Rome, Persia, Babylon or from Greece?" "No from the Jews!" Then he went on, holding up a Bible, "We love this Bible,

and where did we get it? Every bit from the Hebrew race." He said it was not surprising if the Jew was hard to convert, after 1900 years of persecution—persecution by Christians. After seeing what treatment he has received from Christians in Russia, it is hard to blame him for suspecting any show of kindness. He said that though the Jew is a money-getter, yet underneath, in soul, the thing he longs for most is sympathy and kindness. (I can bear witness that any friendliness is met more than half way, in visiting among them.) This Christian Jew is preaching every night to crowds of his countrymen, and has started a Gospel settlement among the children. This has only been going on for three months, and the success of it is still doubtful, I called there to-day and had a long talk with two of the workers. They say that the children love to sing hymns, but will never say the name of Jesus, always leaving it out when they come to it. Sometimes the parents stop them from attending the sewing and other classes, saying that they don't want them to be taught Christianity. But it is possible to inspire them with Christian principles and ideals, even if they are not yet ready to accept Christ as God. They nearly always say they think He was a good and great teacher.

Another speaker said that if anyone had a leaning toward infidelity, the best cure for it would be to engage ever night for a month in rescue work—and I feel sure he was not far wrong. No one can see the terrible results of sin without seeing also the need of a Saviour. In every case it is the personal touch that heals—the touch of our Divine Brother. Morality is powerless to drag people out of their old selves, but God in Man can still work miracles, and is doing so every day, as none know better than rescue workers. He could not win men without coming to live among men, and neither can we. Rescue work means hand to hand work; we can't fight with cannon that shoot ten miles, the weapon we are commanded to use is the Sword of the Spirit, even the word of God, and the use of a sword means close quarters. We must all give and take from each other as we move on our way; but let us

## REMOVAL SALE

### SPECIAL TO VISITORS TO THE EXHIBITION

On September 1st we shall move into our new showrooms in the Pulford Block on Donald Street.

During July and August we are clearing our stock of used pianos and organs at the following prices:

### Upright Pianos

One at	-	-	\$300.00
One at	-	-	\$200.00
One at	-	-	\$175.00
One at	-	-	\$150.00
One at	-	-	\$125.00

### Organs

Two at	-	-	\$75.00
One at	-	-	\$50.00
Three at	-	-	\$40.00
Ten at	-	-	\$25.00

### Square Pianos

One at	-	-	\$35.00
One at	-	-	\$50.00
Three at	-	-	\$75.00
Five at	-	-	\$100.00
One at	-	-	\$175.00

### EASY TERMS AND PAYMENTS

This is a rare opportunity to purchase a good, sound practice piano or organ.

THE  
**NORDHEIMER PIANO & MUSIC CO.**  
247 MAIN STREET

## The Provincial Mutual Hail Insurance Company of Manitoba

(Incorporated 1891)

### Royal Commission on Hail Insurance Companies

After his examination was completed, Mr. Thomson was complimented on his straight forward manner of giving his evidence.—The Chairman of the Commission then stated that they had not received a single complaint against his company; but, on the other hand, several parties had come voluntarily to their meetings and spoken highly in favor of it.—He said he merely mentioned these facts because he thought it would be gratifying to his Directors and to himself, as Manager of the Company, to know them.—Mr. Thomson said it was exceedingly gratifying to know these facts and thanked the Chairman of the Commission for his kindness in mentioning them.

The adjustments in this Company are for all the loss sustained.—In the other companies the adjustments are for a proportion of the loss as it stands to the amount insured.—**A CONSIDERABLE DIFFERENCE.**

**Strictly a Farmers' Company. Managed by Farmers only.**  
**Insure with us and feel Secure.**

THE OLD RELIABLE.

**C. J. THOMSON, Farmer, Virden**  
Manager—Sec.—Treas.

Head Office: **449 MAIN STREET, WINNIPEG**

see to it that we give something valuable to our neighbors and take their good qualities, not their evil, in return.

" But as we meet and touch each day  
The many travellers on our way,  
Let every such brief contact be  
A glorious, helpful ministry!  
The contact of the soil and seed;  
Each giving to the other's need—  
Each helping on the other's best,  
And blessing each as well as blest."  
HOPE.

**MIDSUMMER SONG.**

Dawnings of amber and amethyst eyes;  
Soft in the south wind the laughter of  
leaves;  
Breath of the poppy and death of the  
rose—  
Midsummer comes and midsummer  
goes!

Dapple on cheek of the apple and plum;  
Honey-bees droning a die-away hum;  
Swales in a shimmer and dales in a  
doze—  
Midsummer comes and midsummer  
goes!

Darting of dragon-fly flutter of meth;  
Barley in windrow and wheat in the  
swath,  
Hush-song and thrush-song—the mo-  
ther bird knows!—  
Midsummer comes and midsummer  
goes!

Moonlight and noonlight all glamor and  
gleam;  
Hillside and rillside a thrall to the  
dream;

Capture and rapture before the days  
close!—  
Midsummer comes and midsummer  
goes!  
—CLINTON SCOLLARD, in the *Cosmopoli-  
tan*.

# Save all your Cream

U. S. Separator is biggest money maker because it gets more cream than any other. Holds **World's Record** for clean skimming, and can be easily regulated to skim thick or thin cream as you desire. Cream represents cash—you waste cream every day if you are not using a

## U. S. CREAM SEPARATOR

Has only 2 simple parts inside bowl—easily and quickly washed. Low supply tank—easy to pour milk into—see picture. All working parts inclosed, keeping out dirt and protecting the operator. All parts accurately made, automatically oiled and light running. Many other exclusive advantages, all fully described and finely illustrated in our big, handsome, new catalogue. Write for copy today—do it now while you think of it. Be sure to ask for catalogue number 110, and address



**Vermont Farm Machine Co.,**

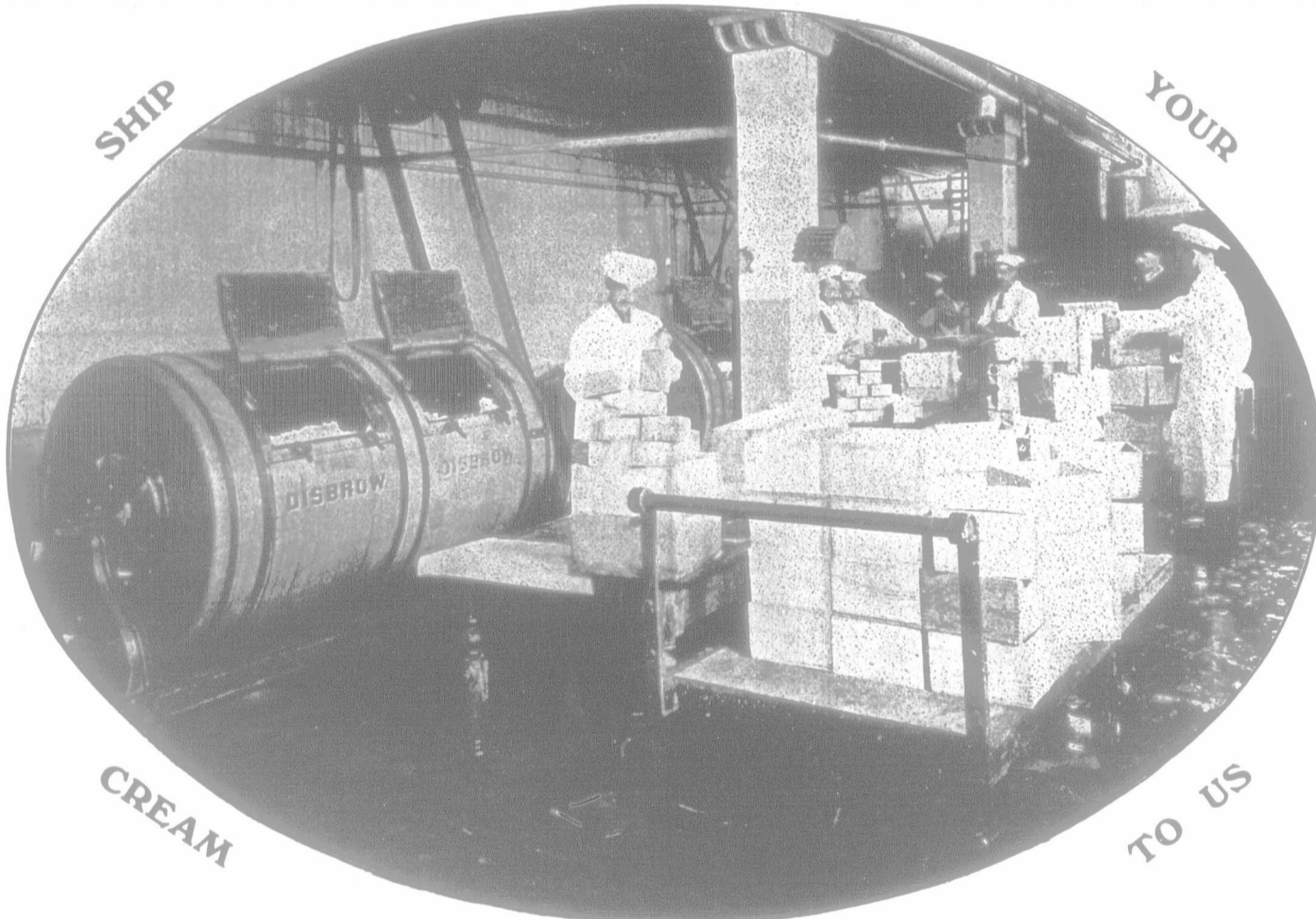
**Bellows Falls, Vt.**

Prompt deliveries of U. S. Separators from warehouses at Auburn, Me., Buffalo, N. Y., Toledo, O., Chicago, Ill., LaCrosse, Wis., Minneapolis, Minn., Sioux City, Ia., Kansas City, Mo., Omaha, Neb., San Francisco, Cal., Portland Ore., Sherbrooke and Montreal, Que., Hamilton, Ont., Winnipeg, Man. and Calgary, Alta.

*Address all letters to Bellows Falls, Vt.*

445

# The Model Creamery of the West



**A Row of Disbrow Churns**

Is Owned and Operated by  
**THE NATIONAL CREAMERY  
and PRODUCE CO. Limited**

Who also own two branch creameries in Manitoba. Our plants are noted for being scrupulously clean and for the quality of Products turned out. Why am I not getting better prices for my cream? This is the question that every farmer and dairyman has asked himself at one time or another. You maintain that the quality is high, yet you don't seem satisfied with what it brings. The remedy is, ship to the National, they pay the highest price in the market. Hundreds of others were asking the same question and we satisfied them. We can also satisfy you. We number amongst our patrons the most progressive farmers and dairymen in Manitoba, Alberta, and Saskatchewan—people who always deal where they get the greatest returns. You should investigate. It will repay you.

Our creamery has the unique distinction of having the largest and most up-to-date churning room in Western Canada, and we employ three of Canada's best butter makers. These are assisted by three young men helpers who will some day be enumerated amongst those who are at the top of this particular branch of creamery business.

## Invitation

While in Winnipeg during Fair Week come in and visit us. We will show you through our whole establishment and, by the way, we also have an immense cold storage plant in connection with our Creamery. You will find us on Meade Street, near C.P.R. Depot.

## The National Creamery and Produce Co. Ltd.

Head Creamery: Winnipeg. Branches: Glenboro & Gladstone

# Post Holes Dug in a Hurry

## WITH THE LOCK-LEVER DIGGER

Patented in U.S. & Canada



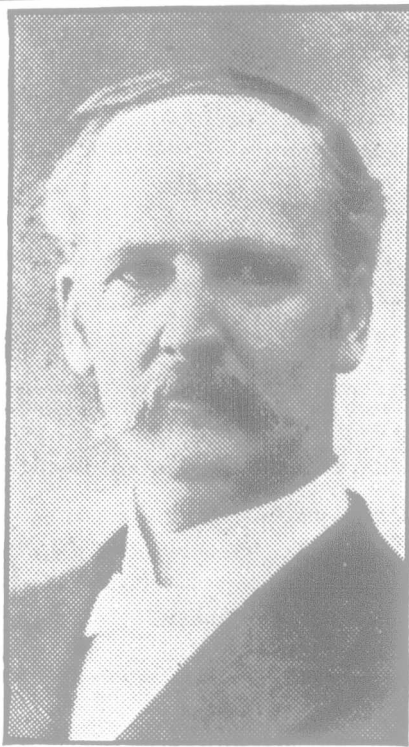
The Lock-Lever Digger digs holes three feet deep, any required diameter, and the time it saves in digging holes will pay for itself in two days over any other way of digging holes.

The Lock-Lever is an automatic self-lock, and locks the blade at right angle, so that both hands are used in lifting the ground out of the hole. This Digger is guaranteed to work equally well in any kind of soil, from muck to stone. A single trial will convince any person of its vast superiority over any device ever put into the ground for the purpose of digging holes.

The engraving represents Digger ready for thrusting into the ground.

Write for prices

The Western Commission Co. AGENTS 307 Logan Avenue, WINNIPEG Agents wanted.



### THE WEARY SICK.

During the past few months our healing work has continued with gratifying results.

Among the ailments healed or being healed are the following, most of them a long distance from us, and all absent from us:

Various types of rheumatism, sciatica, partial paralysis, serious stomach troubles, prolonged vomiting, catarrh of head, bronchial tubes, and lungs, tuberculosis, kidney trouble, genital weakness, locomotor ataxia, etc., etc.

Our method makes nature heal herself. The work is both scientific and scriptural. Saint or sinner may be healed, if he will. For particulars address with stamp. Rev. G. A. Schram, 445 Cumberland Ave., Winnipeg, Manitoba Phone 2720.

## Select Farms

IN LOWER FRASER VALLEY

British Columbia's Richest Farming District

I publish a real-estate bulletin, giving description and prices of some of the best farms in the Valley. Send for one (it will be of value to anyone interested in this country or looking for a chance to better their present conditions) to

T. R. PEARSON

NEW WESTMINSTER, BRITISH COLUMBIA.

## TRADE NOTES

IN THE VALLEY of the Moose Jaw River bordering on the city is the new Moose Jaw Nursery. It comprises about one hundred and fifty acres and the soil which is a clay loam appears to be well adapted for nursery purposes.

Although it was only started last March, it has now a luxuriant growth of plant and vegetable life. Among the trees the cottonwoods, maples and apple trees are doing especially well and will be ready for fall.

The nursery has an ideal situation as it is sheltered on either side by high banks. By means of a gasoline engine water from the river is forced into a reservoir at the top of a bank so that in the dry season the large garden can be watered by means of irrigation.

The promoters have expended large sums of money in this enterprise and it is to be hoped their efforts will be successful. The readers of the Advocate will be advised through its columns when the Moose Jaw Nursery have stock for sale.

THE ADJOURNED annual meeting of the Brandon Machine Works Company, Limited, of Brandon, Man., was held at their office on July 4th. The statements and reports from the different officers were of a very encouraging nature, and showed the business to be in a prosperous condition. After a considerable account being written off for depreciation on machinery and tools and also notes and open accounts there was a substantial surplus carried over.

The company will at once proceed with the erection of a new office and show room building, and additions to their plant which are necessitated by the growing demands for their products, especially their gasoline engines and well boring machinery.

They have recently added a number of modern tools to their machine shop for the rapid production of high grade work.

The company employ between 80 and 100 men the year round, which number it is anticipated will be materially increased when new additions are completed, and will make it one of the largest manufacturing firms of its kind in the West. Its success is doing much to demonstrate the advantages of Brandon as a manufacturing center.

The following directors were elected for the ensuing year: D. A. Hopper, D. H. Scott, E. Evans, E. H. Johnson, D. H. Watson, M. McKenzie and J. W. Thompson.

Later the directors met and elected the following officers: D. A. Hopper, President; D. H. Scott, Vice-president; W. C. Hopper, Secretary-Treasurer and J. W. Thompson, Managing Director.

### Humorous.

#### LONGFELLOW'S HIT AT A DINNER.

The father of Nicholas Longworth, the young congressman who recently married Alice Roosevelt, gave a dinner, many years ago, to the poet Longfellow. When the poet was called upon for a speech he remarked:

"My friends, attention has been called to the similarity between the name of our distinguished host and my own. But I would like to emphasize this distinction: that 'worth makes the man, and want of it the fellow.'"

And with this clever sally Longfellow made the hit of the dinner.

#### NOT A FAIR DEAL.

Two boys who managed to be rather unruly in school so exasperated their teacher that she requested them to remain after hours and write their names one thousand times. They plunged into the task. Some fifteen minutes later one of them grew uneasy and began watching his companion in disgrace. Suddenly the first one burst out with despair between his sobs, and said to the teacher:

"Tain't fair, mum! His name's Bush and mine's Schluttermeyer."

#### TOO GREAT A RISK.

He desired to take out a life policy for \$50,000.

Smiling eagerly the agent drew forth the blank form and began the usual series of questions.

"Query six," he said at length—"are you an automobilist?"

"No," was the rejoinder, "I am not."

"Motorcyclist, perhaps?"

"No."

The agent with a sigh laid down his pen.

"I am sorry," he said, "but we no longer insure pedestrians." — *Minneapolis Journal.*

# PILES

A NEW DISCOVERY—A NEW PRINCIPLE CERTAINTY AT LAST

If you suffer from piles of any character—no matter how chronic, no matter how difficult, no matter what remedies you have tried or are now trying—send at once for free sample and complete information regarding Eureka Pile Cure. It has upset all previous theories and is revolutionizing the treatment of piles. Sample Free. Full treatment \$1.00.

DON'T DELAY. SEND AT ONCE.

The free sample is yours for the asking, sent sealed in plain envelope. Write to-day—NOW.

A. F. ARTZ MEDICAL COMPANY St. Paul, Minn.



## J. HOWE BENT CHILLIWACK, B. C.,

the Veteran Real Estate Broker of the Lower Fraser River Valley, points with pride to the scores of happy families he has located in this charming valley and still offers his services to home seekers.

# MORRIS PIANOS

MORRIS

PIANOS

THE JUDGMENT OF THE PUBLIC is a safe criterion of the merit of an article. When a piano reaches the highest degree of popularity in all parts of the country, and is meeting with increasing favor every day, it is safe to assume that it is one on whose quality the people have agreed.

We offer the "MORRIS" as a piano which is pre-eminent in general favor and which brings to our customers all the advantages of established prestige.

## THE MORRIS PIANO CO.

228 PORTAGE AVE., WINNIPEG

S. L. BARROWCLOUGH, Western Manager

## A Suit of Clothes Free!

We want you to take a few orders in your locality for the celebrated

### Plastic Form Clothing

just to introduce this superior brand, which stands without a rival in the West and is the acknowledged leader of fine clothing in the East. Your tailor can never hope to equal it, and the price is about half what he charges. Write us at once for particulars

H. E. COLDHAM

Plastic Form Clothing Parlor, Regina, Saskatchewan

Regina's Leading Clothing Store

The Celebrated  
English Cocoa.

# EPPS'S

An admirable food, with all its natural qualities intact. This excellent Cocoa maintains the system in robust health, and enables it to resist winter's extreme cold.

# COCOA

The Most Nutritious  
and Economical.

## Kootenay Valley Fruit Lands

GOLD MEDAL  
London, Eng.  
1905

taken by fruit in this district.  
If you want

An Ideal Home,  
In a perfect climate  
At the most pleasant work  
With wonderfully profit-  
able returns

Send for our BEAUTIFUL BOOK.  
It's free.

**The FISHER HAMILTON CO.**  
Ashdown Building, WINNIPEG, Man.



## ALBERTA LANDS FOR SALE

Easy Terms and Prices  
We Have a Large List

PARKEN & DOBSON, Calgary, Alta.

## PIANOS & ORGANS

Highest grades only.  
Prices reasonable and easy.

**J. MURPHY & COMPANY**  
CORNWALL ST. REGINA.

## GREAT ENGLISH REMEDY.

## BLAIR'S GOUT AND RHEUMATIC PILLS

The best and surest cure for GOUT and RHEUMATISM. Thousands have testified to it. All stores and the BOLE DRUG CO., Ltd., Winnipeg, and LYMAN, SONS & CO., Montreal and Toronto.

### IS NO EXPERIMENT



### But a Positive Cure.

That you may be assured of the merits of this wonderful medical triumph, I will send ten days' trial treatment free. Address, with amp, MRS. F. V. CURRAH, Windsor, Ont.

## TRADE NOTE.

PROBABLY NO SINGLE business house in this country has done more to increase the value of all grain and grass land than has the Manson Campbell Co., Ltd., of Detroit, Michigan—makers of the world famous Chatham Fanning Mills.

By employing experts to devote their entire time to the problems and difficulties experienced by farmers and then applying the knowledge so gained to the designing and production of a machine which takes weed seed out of grain ("cockle" and oats out of wheat) and separates one kind from another, these people have prevented the sowing of weed seed and "mixed crops" over wide areas in many parts of the country.

For—whenever one Chatham Fanning Mill is brought into a neighborhood, and people see what it will do, many other Chatham Machines are soon wanted.

This is only natural, however, for when one farmer finds a fanning Mill which works as this Chatham machine does, all his neighbors soon wish to enjoy the same benefits he is getting from it.

Of course, the Chatham Fanning Mill is not by any means a common mill. Years of work and experience on the part of its makers have perfected it. No other machine made is so thoroughly suited—and in every way—to the work this Chatham Mill will perform.

It is, in all senses of the word, a complete Fanning Mill. It has seventeen screens—all of which come with it. You don't buy the mill first and then have to get additional screens, as is the case with so many cheap mills. The Chatham Fanning Mill is "all there" from the start.

And the Manson Campbell Co. deal direct with the farmers, so they may be in close touch with actual users of their mills. You can write to them and have sent you by return mail, post paid, full particulars of what is probably one of the most liberal selling plans ever thought out.

This is the generous offer they make—upon receipt of your order, they will ship you at their own expense, a Chatham Fanning Mill which you can use for 30 days FREE.

In this way you have a chance to test the mill thoroughly on your own farm, with your own work, at the maker's expense. But—the most astonishing part of their liberal offer is this—if you are not satisfied, during the month's trial, that the Chatham Fanning Mill is exactly as represented, you can return it and the use you have had of the mill will not cost you a penny.

Every farmer who is interested in getting better and cleaner crops and increasing the value of his grain-raising land, should send at once for particulars of this New Selling Plan; for the Manson Campbell Co. is a thoroughly responsible concern (as may be learned from the Commercial Agencies or any Detroit Bank) and would not make such an offer unless ready to stand squarely behind it and do exactly as they say.

But this is in keeping with their whole business policy, which has already been a fair and liberal one, as their hosts of friends among farmers who have dealt with them will testify.

If you mail your name and address to the Manson Campbell Co. at once, they will send you FREE and post paid, a copy of their book "How to Make Dollars out of Wind."

This book tells all about the world famous Chatham Fanning Mill, gives full details of their New Selling Plan and generous FREE Trial Offer, and contains a lot of useful, valuable and interesting information about the care of grain—and particularly seed grain.

The book also tells how best market prices may be obtained for your grain crops and how grain should be handled to command most money.

No up-to-date farmer should be without a copy of this valuable book in his collection of money making agricultural reading.

You can get it by merely addressing the Manson Campbell Co. Limited, Wesson Avenue, Detroit Michigan.

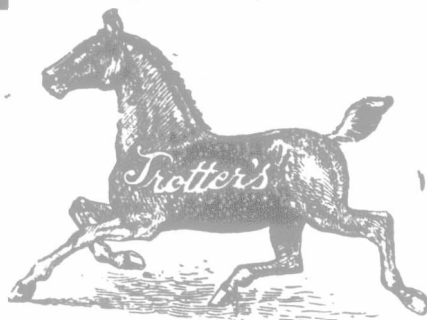


## Plaster Your House with Empire Cement Plaster

Made by the  
**Manitoba Gypsum Company, Ltd.**  
806 Union Bank, Winnipeg

## Horses for Every Person

150 head to choose from. Two cars of town horses, two cars of Ontario, four cars of Montana horses (big gentle fellows). A car of imported Clyde mares, direct from Glasgow :: ::



Selling for 25 years in  
the one city. A record  
unequaled in the west

We are compelled to have a large assortment so as not to disappoint customers from a distance. If you do not want any please tell your friends.

Phone or write

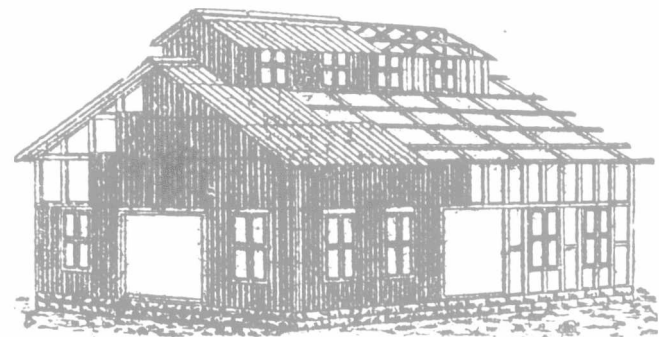
**TROTTER & TROTTER, Brandon, Man.**

## Hudson Bay Insurance Co., Ltd.

Before insuring your property see a Hudson Bay agent, or drop a postal to  
**R. H. YOUNG,** Gen. Agt. for Saskatchewan, MOOSE JAW, SASK. **C. N. BRISTOL,** Gen. Agt. for Alberta, CALGARY, ALTA.  
Live Agents wanted in unrepresented Districts.

## CORRUGATED IRON

"Keeping Everlastingly at it Brings Success."



Pedlar's Corrugated Iron is made on a 38,000-pound press (the only one in Canada), one corrugation at a time, and is guaranteed true and straight to size.

We carry a 600-ton stock in Oshawa, Montreal, Ottawa, Toronto, and London, and can ship ordinary requirements the same day order is received.

Made in 1-inch, 2-inch or 2 1/2-inch corrugations, in sheets any length up to 10 feet, in 28, 26, 24, 22, 20, 18 gauge, both painted and galvanized.

This class of material is most suitable for fireproofing Barns, Factory, Mill and Warehouse Buildings, and is water and wind proof.

Corrugated Ridges, Lead Washers and Galvanized Nails carried in stock.  
Send Specifications to your nearest office for Catalogue and Prices.

## THE PEDLAR PEOPLE

Montreal, Que.	Ottawa, Ont.	Toronto, Ont.	London, Ont.	Winnipeg, Man.	Vancouver, B.C.
767 Craig St.	423 Sussex St.	11 Colborne St.	69 Dundas St.	76 Lombard St.	615 Pender St.

Write Your Nearest Office—HEAD OFFICE AND WORKS, OSHAWA, ONT.  
Largest makers of Sheet-Metal Building Materials under the British Flag.

When Writing Advertisers Kindly Mention THE FARMER'S ADVOCATE.

# Regina's Industrial FAIR and EXHIBITION

## Aug. 9, 10 & 11, 1906

**\$10,000 in Prizes and Attractions**

A splendid program of Races and Attractions will be given.

Special Performances by the Royal North-West Mounted Police.

Grand Display of Fire Works. Good Platform Performances.

Exhibition entries will close August 7th. Racing entries August 8th. Prize lists and all particulars can be obtained from the Secretary.

**A. T. HUNTER,**  
President

**E. MEADOWS,**  
Sec.-Treas.

### SEE IT ALL—WINNIPEG EXHIBITION

Warranted never on exhibition before—The Aims, Objects, Growth and Prospects of the newly organized

## Grain Growers' Grain Co.

will be on exhibition at the Company's tent on the Fair grounds.

A bureau of information will be open at all reasonable hours and friendly advice received as well as knowledge imparted concerning the Farmers interests in this Company.

**No Charge for Admission. All Farmers Welcome**  
Don't Miss It. See the Sign of the Sheaf

**JULY 23rd—28th, 1906**

## A Gun "Snap"

Should you be thinking of buying a gun this season you had better consider the following offer :

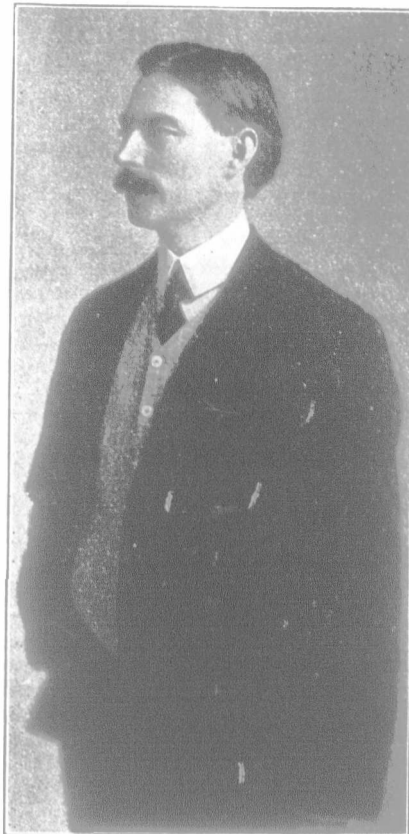
Our gun No. 5291 is a double-barrel breech loader with Damascus barrels, left barrel choke bored, fitted with top-lever, the celebrated Greener cross bolt and D and E fore-end. It is a very handsome gun, good for long range shooting and will stand years of hard use. We can highly recommend it and will guarantee satisfaction

In 12 or 16 gauge - price \$15.00  
In 10 gauge - price \$16.50

N.B.—For a limited time only we will pay the express charges to any station in Manitoba and the Northwest.

**The Hingston Smith Arms Co.**  
WINNIPEG

Advertise in Farmer's Advocate---It Pays



PERHAPS there is no man in the Canadian West so well known in musical circles as Mr. S. L. Barrowclough. This gentleman has in his grasp the reins of professional music and musicians, and the different organizations he has charge of are a credit to himself

and to the Canadian West. Mr. Barrowclough is bandmaster of the Winnipeg City Band, manager and director of Barrowclough's orchestra and conductor of the Central Congregational Church choir. Mr. Barrowclough has made a study of the piano business and is known throughout Canada as an expert on piano values, and is very enthusiastic over the piano he represents. After studying the various Canadian pianos, he decided to handle the Morris, and has been manager of the Winnipeg branch for the past four years. Mr. Barrowclough asserts that there is no piano made in Canada quite as durable as the Morris, its beautiful quality of tone, and splendid action is making such a favorable impression with the public, and the demand for the Morris piano is so great throughout the Dominion that it keeps the management busy to keep up with the orders. Mr. Barrowclough says it is the object of the company to manufacture a piano whose intrinsic merits should of themselves attract the admiring attention of the musical public. Great skill, much time, profound application and a vast expenditure of money have been put forth in the efforts to attain that ideal. Construction upon these thoroughly scientific principles has guided the efforts of the firm. They have steadily, patiently and perseveringly adhered to practical ideas; with what success is shown by the verdict of our most notable musicians and our best respected citizens. The company's Winnipeg warehouses are located at 228 Portage Ave. and Mr. Barrowclough and his courteous co-workers are always pleased to show visitors and demonstrate to them the superiority of the Morris Piano.

### THE Keeley Institute

133 Osborne Street  
WINNIPEG

Liquor, drug habits and neurasthenia, resulting from excesses, successfully treated by Dr. Leslie E. Keeley's original gold cure, administered by and under the supervision of competent and skilled physicians for the past 25 years. Correspondence confidential.

### We Want Good

Butter  
Eggs  
and  
Live Poultry

We'll give the very highest market prices to get them. Write for prices and get our literature on hog raising.

**J. Y. Griffin & Co., Ltd.**  
Winnipeg

### THE GARDEN.

I know a garden sweet and beautiful,  
Where tall flowers grow as fragrant all,  
as those  
Which make the longed-for country  
wonderful—

The lily and the rose  
And smaller blossoms of forgotten  
naming  
That kindle its dim corners into flaming  
Or welcome the tired eyesight to repose.

Beyond, the noisy city keeps her march  
With fevered step, with shoutings and  
with cries;  
Her iron streets beneath the hot sun  
parch;

She glares at glaring skies.  
Within these charmed walls a hidden  
fountain

Whispers lost memories of moor and  
mountain,  
Singing to heavy hearts low lullabies.

The weary city girdles it with stone  
And breathes her sodden breath about  
the walls—

The city seeks to slay it there alone!  
Peace still upon it falls.

For the soft breeze that stirs its heavy  
roses  
Comes laden with the scent of country  
posies  
And in its rustling all the country calls.

Imprisoned! Are you in me or without,  
Strange garden, all unknown to alien  
sight?

The cruel city presses all about,  
But, flushed with fairy light,  
Your moving branches by far winds set  
blowing,

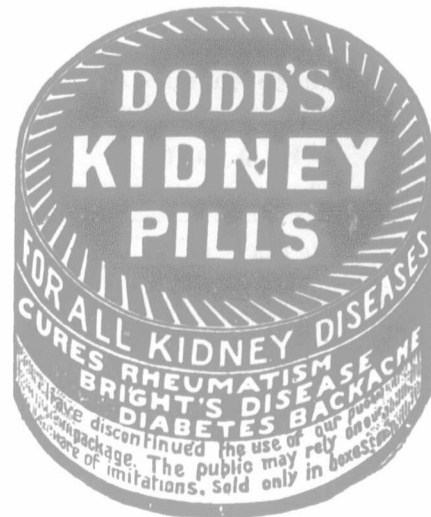
And mystic flowers in your borders  
growing,  
I know you mine by right.  
—Hildegard Hawthorne, in *Century Magazine*.

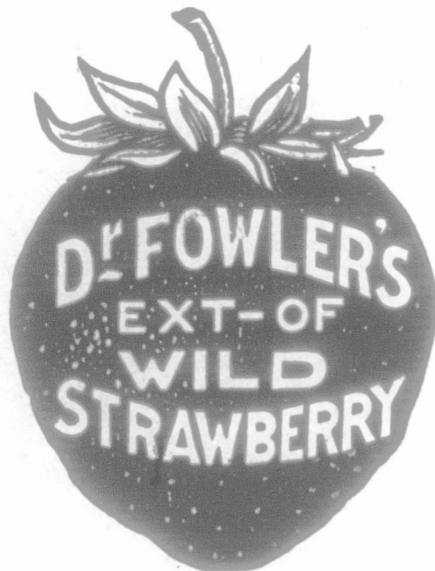
### MR. EVARTS HAD GONE FAR ENOUGH.

One day when William M. Evarts, Secretary of State under President Hayes, was a college student he was called on to read Virgil in class.

He started out bravely: "Three times I strove to cast my arms around her neck, and—and—" adding lamely, "That's as far as I got, Professor."

"Well, Mr. Evarts," said the Professor, "I think that was quite far enough."





## CURES

Dysentery, Diarrhoea, Cramps, Colic, Pains in the Stomach, Cholera, Cholera Morbus, Cholera Infantum, Sea Sickness, Summer Complaint, and all Fluxes of the Bowels.

Has been in use for nearly 60 years and has never failed to give relief.

**WANTED**  
**5,000,000 Muskrat Skins**  
Also all kinds of Raw Furs  
Send for our price list.  
The Canadian Raw-Fur Exchange  
66 River Street, Toronto, Canada

**PLANTS FOR SALE**  
CABBAGE, (early and late) per 100, \$0.50  
TOMATOES, (early) per 100, 1.00  
CAULIFLOWER, (early) per 100, 1.00  
**MENLOVE & THICKENS, Virden, Man.**

## Pacific Coast Seeds

FRUIT and ORNAMENTAL TREES  
GREENHOUSE PLANTS, Floral Work.  
BULBS for fall planting. White Labor.  
Home Industry Catalog free.

**HENRY'S NURSERIES**  
Seed House and Greenhouses.

3010 Westminister Rd., VANCOUVER, B. C.

## OUR REPAIRING

is a **STRONG FEATURE**  
of our work

Send your watch along—we will repair it and return it and the price will be right with the work guaranteed.

**E. S. WALKER**  
Opposite Post Office  
8th Avenue **Calgary**

## FOR SALE

Three excellent stock and grain farms within seven miles of Regina. Flowing water on two of said farms.

**H. G. OTIS**  
P. O. Box 412 **Regina, Sask.**

## FOR SALE

The following rebuilt engines in first-class order ready for immediate delivery:

One of our 25 h.p. Compound Traction Engines  
One of our 20 h.p. Simple Traction Engines  
One of our 18 h.p. Simple Traction Engines  
One of our 16 h.p. Portable Engines

Other sizes ready shortly, call and examine them.

The  
**John Abell Engine & Machine Works Co. Ltd.**  
760 Main Street, WINNIPEG

## ABOUT THE HOUSE.

When mixing flour for thickening add a pinch of salt to the flour before mixing with water, and it mixes much more smoothly without lumps.

**Perfection Omelet**—To one cup hot cream of wheat add gradually one cup of hot milk, three-fourth teaspoon salt and one-eighth teaspoon pepper. Add the well beaten yolks of four eggs, then the whites, beaten until stiff and dry. Turn into a well greased frying pan and let stand on top of range until delicately browned underneath, then put in slow oven to finish cooking. As soon as firm fold and turn on a hot platter.

A citizen of Norfolk, Virginia, lives on \$1.55 worth of food a month and is getting fat. In April he ate eleven pounds of nuts (Brazils and pecans), thirteen cents worth of peanuts, roasted, and one pound of raisins. He takes about one-half an ounce of salt with each pound of nuts. He says that he could fill a knapsack with nuts and walk five hundred miles across the country with no other food.

**To Pickle Tongues and Beef**—To each gallon of water add a pound and a half of salt, half a pound of sugar, half an ounce of saltpetre and half an ounce of potash. Let these boil together, removing the scum as it rises; when clear pour into a tub to cool, then pour it over the meat, which will be ready for use in four or five weeks. The meat must be well covered with pickle, and should not be put down for at least two days after killing, during which time it should be slightly sprinkled with saltpetre, which removes all the surface blood, leaving the meat fresh and clean.

**Cinnamon Buns**—Take a heaping cup of bread dough, one-half cup of lard, one-half cup of sugar, one cup of luke warm water, and mix altogether with enough flour to make the dough stiff again; then put in a pan and let stand until well risen. Then roll the dough out as you would pie dough to a quarter of an inch in thickness, spread on a little butter and sprinkle with sugar and cinnamon, roll up and cut in pieces about a half inch thick. Place in a bread pan and let rise, then bake in a hot oven for fifteen minutes. Sprinkle the top with sugar and cinnamon.

**Cream Dressing**—A nice salad dressing is made by rubbing the yolks of three hard boiled eggs till smooth with a saltspoonful each of mustard, sugar and pepper, and one raw egg well beaten. Add, a little at a time, a cupful of thick cream alternately with two table-spoonfuls each of lemon juice and vinegar, beating constantly the while. Add the chopped whites of the boiled eggs.

**Butterless Cake**—This I am sure will please you. It is very light and a great favorite wherever I have given it. White of 1 egg, yolks of 2, 2 cups white sugar; whip to a cream. In this whipping to cream lies the secret of the cake's excellence. Add one cup of cold water; stir well. Sift into this three cups of flour and 3 teaspoonfuls of baking powder, and whip smooth. Flavor to taste. Bake in layers, or paper a dripping pan and bake in one large sheet. Makes a delightful sponge cake.

## RHUBARB BETTY.

Stir one-quarter cup of melted butter into two cups of solidly packed breadcrumbs. Cut one pound of rhubarb into inch pieces. Butter a baking dish, put in a layer of bread crumbs then one of rhubarb, a dozen seed raisins over the top, two or three gratings of the yellow peel of a lemon and a few drops of the juice. Sprinkle sugar liberally. Continuing making layers of bread, rhubarb, and seasoning, until all is used, then put a cover over the dish and bake about three-quarters of an hour in a moderate oven. Take cover off for the last fifteen minutes.

## BAKED EGGPLANT.

Eggplant can be used to advantage in several savory dishes. One very easily prepared, described by *Table Talk*, requires that the eggplant after washing should be dropped into a kettle of salted water and boiled until tender when tested with a fork. This will take from thirty-five to forty-five minutes according to size. Drain and cut it into quarters, then scrape out all the interior. Mash this thoroughly, adding one or more large spoonfuls of butter, a beaten egg and salt and pepper to taste. Heap in a baking dish, sprinkle thickly with buttered crumbs and bake for twenty minutes in a hot oven.

## A NATIONAL HYMN FOR CANADA.

REV. R. STRACHAN.

Oh, God! we owe to Thee  
Our Canada so free,  
Beloved land!  
Our hearts with grace endue  
So we may wrong eschew,  
And to our trust be true,  
True to our land.

Save, Lord of earth and heaven  
The country Thou hast given  
This goodly land.  
Our Canada befriend;  
Her power for good extend;  
On Thee we will depend  
To save our land.

God bless her homes and soil;  
Reward her sons, who toil  
With heart and hand.  
In sunshine and in showers  
Endow with gracious powers  
"This Canada of ours."  
God bless our land.

God of our fathers! save  
From aught that might enslave  
Save we implore.  
Bless Canada with peace;  
From every wrong release;  
May righteousness increase  
For ever more.

—Toronto Globe.

## ONE EXCEPTION.

Wickliffe Matthews, the San Francisco lawyer, tells the following:

A case came on for trial for the recovery of rents for the occupation of a house which was unpaid. After the plaintiff had proved his case and rested, Michael McGrath, attorney for the defendant, in making his opening statement to his jury, said:

"The defence in this case is, that the premises are not fit for human habitation. The house is old and in poor condition, the posts of the back porch rotted, and the west corner gone down, the front porch sunk, the dining-room floor lower on one side than on the other, the roof about to fall in, and in fact, everything about the house is old, dilapidated and settled."

The plaintiff's attorney here interrupted. "There is something about the house that is not settled."

"What's that?" said Mr. McGrath.

"Why the defendant has not settled for the rent."

And the jury so found.—*The Green Bag*.

## TELLING TIME BY FLOWERS.

The professor of botany paused under an oak, and the young girls in white grouped themselves prettily about him.

"To tell time by the flowers," he said, "you should all be able to do that. Think how convenient it would be at this season."

"It is five a. m. when the sow thistle opens. It is 5.30 when the dandelion opens. It is 7 when the white lily opens. It is 8 when the hawkweed opens."

"At 11.12 a. m. the sow thistle closes. At noon precisely the yellow goat's beard closes. At 2 p. m. the hawkweed closes. At five the white lily closes. The dandelion closes at 8 sharp."

"Since Pliny's time forty-six flowers have been known to open and shut with great punctuality at certain hours of the day and night. It would be possible with a little labor, to construct a garden whose flowers, folding and unfolding, would make a first rate clock."

## Send Your Watch Here

If we could take you into our work-room and show you the infinite care with which every watch is handled you would realize why we urge you to send your watch here for repairs. Our watchmakers have made a life study of watches. They work upon nothing but watches. Your watch will have careful and prompt treatment if sent to us. A post card brings a strong wooden mailing box. We will report cost of work before mailing.

**D. A. REESOR,**  
"THE JEWELER," - - Brandon, Man.  
Official Watch Inspector for C.P.R. & C.N.R.  
ISSUER OF MARRIAGE LICENCES.

## Your Watch Wanted

Send us your watch by mail for repair. A post card will bring a small box for mailing; and we will report cost of work. If you are satisfied we will repair it and return it to you post paid.

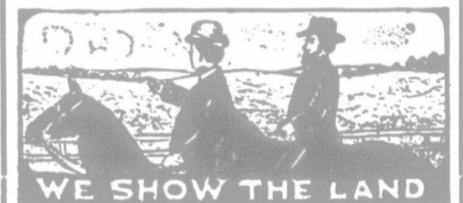
Your watch will receive prompt and careful attention. All work is guaranteed.

**D. E. BLACK,**  
Expert Watchmaker and Jeweler,  
133 Eighth Ave. - Calgary, Alta.

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PIANOS AND ORGANS

CANADA'S GREATEST  
Thirty years manufacturing musical instruments. Over 50,000 in use in the homes of satisfied customers.  
Sold by reliable dealers in your own community.  
If not on sale in your immediate vicinity, write us direct.

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CLINTON, ONTARIO, CANADA  
Western Representative  
G. A. McKEE, B. A., Box 875, CALGARY, ALTA.



And it is good land. Thousands of acres for sale. Here is a sample, 320 acres, two miles from town, fenced, built on and improved, a genuine money-making snap.

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Visiting Cards

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Prompt attention to mail orders.

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144 Carling St., LONDON, Ont.

## I Can Sell Your Real Estate or Business

NO MATTER WHERE LOCATED  
Properties and Businesses of all kinds sold quickly for cash in all parts of the United States. Don't wait. Write to-day describing what you have to sell and give cash price on same.

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any kind of Business or Real Estate anywhere, at any price, write me your requirements. I can save you time and money.

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"THE LAND MAN"  
415 KANSAS AVENUE  
TOPEKA, KANSAS.

ADVERTISE IN THE ADVOCATE



**THE HORSES AT THE WINNIPEG EXHIBITION.**

The Horse Show in connection with the Winnipeg Exhibition this year promises to be the largest of its kind ever held in Western Canada. The entries now, at this writing are away in excess of what they were last year or even during the Dominion Exhibition.

Among those who have entered are Messrs. Hogate of Brandon; W. H. Bryce, Arcola; W. H. Nesbit of Roland; J. B. Thompson of Hamiota; John Wishart, Portage la Prairie; W. Spörle, Louise Bridge; George Moffatt, Souris; John H. Stout, Westbourne; C. R. Porniz, Calgary; W. L. Christie, High River, Alta.; and A. Toussaint, Neche, North Dakota.

The number of harness horses is most encouraging as nearly every person who has a good driver or a good carriage horse in Winnipeg has made an entry of it, and as these will be shown in conjunction with the saddle horses in front of the grand stand, it will add considerably to the interest of the Exhibition. But possibly the entries that will cause the most enthusiasm are those of Mr. George Pepper from Toronto; E. H. Weatherly, New York; and J. Spenceley of Box Grove, Ont.; in saddle, hunter, and carriage horse classes. Combined these three gentlemen have made seventy-five entries, comprising all their well-known show horses, which for the past two or three years have made the rounds of the Canadian and American Horse Shows being very strong rivals at such shows as New York, Boston and Toronto. In fact at Boston this year one of the horses belonging to Mr. Pepper won the high jump doing 7 ft. 4 1/2 in. These entries comprise what is possibly one of the best pair of carriage horses in Canada to-day viz—the two "Creightons" for which Mr. Pepper paid \$5000, and these horses will be shown in their various harness classes. The entries made are in the carriage classes, tandems, four-in hands, and gentlemen's pair turn outs, dog cart cobs, high steppers, saddle horses and hunters.

The horses comprised in these entries are, in addition to those already mentioned:—"San Toy", "Miopia", "Glen Dale", "Pearl", "Senator", "Rupert", and "Rattler".

Possibly of all these horses named there is none that has had a more successful career than the little mare called "Pearl". This mare started in 1902 and was shown at various shows throughout the east and was successful in winning the high jump at Chicago, Nashville, Atlanta, St. Louis, Montreal and Toronto. During 1903 she won the high jump at Brockton, Syracuse, Kansas City, St. Louis and Nashville, and was first in the light weight classes at Toronto and the second to the world renowned "Rifle" at the high jump at Chicago. In 1904 she was again placed first in the high jump at Chicago with 6 ft. 9 in. to her credit; second at Kansas City and first at Toronto.

In 1905 she won the high jump in New York. In 1906 she has placed to her credit the high jump at Boston, Montreal and Toronto spring show. In addition to those high jumps "Pearl" has been able to win many of her blue ribbons in saddle classes. In many of the classes where she has been placed second her stable mate "Miopia" has won the first honors. It is the intention of the exhibition to put on these high jumps each afternoon during the progress of the Exhibition, and Mr. Pepper has kindly consented to see if the Canadian Championship for high jumps cannot be won on the Winnipeg Exhibition grounds.

**DISPERSION OF SHORTHORNS.**

The attention of our readers is directed to the advertisement of Mr. Jardine, of Manitou, Man. Mr Jardine has a nice bunch of Shorthorns to sell and we trust farmers will take advantage of the offering to lay in a few pure-breds. The "Ranch" where the sale is to be held is an ideal spot for cattle, besides being one of the prettiest beauty spots in Manitoba. It is on the Pembina river a few miles south of town and can be easily reached. Some of the best collies in the world are kept there, Rauler, an old Manitoba champion being at the stud. Remember the date, July 31st.

**ABSORBINE**—there is nothing better. "I have used Absorbine for horse flesh and think there is nothing better" writes Henry A. Kappesser, 205 Pond St., Syracuse, N. Y. under date of Jan. 9, 1906. Absorbine is a pleasant remedy to use, does not blister or remove the hair, and horse can be used. A prompt remedy for bunches and blemishes, sprains, cuts, etc. etc. \$2.00 per bottle express prepaid. W. F. Young, P. D. F., 46 Monmouth St., Springfield, Mass.

Dear Doctor:—For some years we have used Tuttle's Elixir in some of the chronic cases that constantly come before us and the results of its use have been so marked that as a recognition of its remedial worth, we are fully justified in testifying to our belief in its curative power, particularly in cases of rheumatism and pain in the joints.

SUFFOLK HOSPITAL & DISPENSARY,  
Boston, Mass.

"Remember," said the angry husband, "what I say goes."

"It does," rejoined his wife, calmly, "providing you write it down and put a stamp on it."—*Chicago News.*

"Why, Willie, what are you crying about?"

"Cause I don't get no Saturday holiday like the other children does. Boo-hoo!"

"But why don't you get out of school on Saturday?"

"Cause I ain't old enough to go to school yet. Boo-hoo-hoo!"—*Cleveland Leader.*

**The Improved Acme Washer**

will wash thoroughly and perfectly clean anything, from the finest piece of lace to the heaviest blanket, without tearing a thread or breaking a button. In fact, there is nothing in the way of washing which can be done by hand or with any other machine which cannot be done better, more easily, and more rapidly with the **IMPROVED ACME WASHER**. Besides being made of the very best materials, handsomely finished in natural wood, it has a number of

**Special Features**

not found on any other machine. These consist of: **1. A Movable Wringer Stand**, which brings the wringer directly over the tub, so that all the water falls back into the tub, instead of on the floor. (The wringer need never be taken off.) **2. The Hinged Lid**, which is practically steam tight, prevents the water from splashing over. This is merely raised up and leaned back against the handle, so that all the suds must drain into the tub. **3. The Extension Stand** holds the basket, or rinsing tub, close to and on a level with the machine, so that the clothes cannot fall on the floor, and no stooping is necessary. **4. No Iron Post** runs through the machine to rust and stain and tear the clothes.



There are many other good points about the **Acme**, all described in detail in our little booklet, entitled, "Wash-Day Comfort." This is free for the asking. May we send you a copy?

**Is This a Fair Offer?**

If you will write us that you are interested, we will give you the name of the dealer in your town who handles the Improved Acme washer. You can see the machine at his store and learn all about it before you buy it. If your dealer cannot supply you write us direct, sending us his name and address. You risk nothing but a two-cent postage stamp to mail us your letter.

**WRITE TO-DAY**—even if you are not just ready to buy or even try a machine; in that case let us send the little booklet—remember, it's FREE—Write to-day! Address:

**E. H. BRIGGS CO., Winnipeg, Can.**

For Sale by All Hardware Dealers.

These Machines will be on Exhibition at Winnipeg Fair under the Management of a Specialist. Don't miss this Exhibit as it will be one of the best on the grounds, as well as one of the most instructive and interesting for Women.



**Gourelay Pianos—Canada's Most Nearly Perfect Instruments**

**M**USICALLY and structurally they are more nearly perfect than any other first-class pianos. They are a decided advance beyond first-class; they are improved pianos—improved in tone, touch, scale, sounding-board, back, pin-block and in every other detail.

**Every Improvement**

is a real one. Our experience with the world's best pianos has enabled us to test every original idea in piano-building—valuable and otherwise. **Gourelay Pianos** are the embodiment of all ideas that are valuable—the others are left out.

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We ship on approval anywhere in Canada

*Gourelay, Winter Leeming*

MR. ALFRED A. CODD, Winnipeg Manager, invites all interested in pianos or organs, from a purchase or musical standpoint, to inspect the **GOURLAY** piano at the Winnipeg warerooms, 279 Donald Street.

HEAD OFFICE, 189 Yonge Street, TORONTO

**Use Carnefac Stock Food**

for that thin horse







## Western Horsemen

Just another importation arrived at our Regina stables of Clydesdales, Percherons and Jacks. At rock bottom prices, for fifteen days. First here first served.

Satisfaction Guaranteed is Our Motto

**Christner & Fisher, Regina, Sask.**

## America's Leading Horse Importers

Our Percherons won every First Prize at the Great Paris Show, held June 13-17, 1906

During the past seven years our Percheron Stallions have won EVERY FIRST PRIZE except one, at every Government Show in France. This encouragement to the French breeders caused the President of France to give Mr. James B. McLaughlin, the buyer for our firm, the title "Chevalier de la Legion d'Honneur."

The Best can be found only in our Stables.

**McLaughlin Bros.**

Kansas City, Mo. Columbus, O. St. Paul, Minn.



## The Winnipeg Limited

To St. Paul and Minneapolis.

The directness of the route—the fast time—the excellence of the train, combine to make the journey a pleasant and delightful one.

Comfortable Day Coaches—palace sleeping cars, dining cars, compartment library observation cars.

Leaves C.N.R. Depot daily 5:20 p.m.

Direct connections at St. Paul and Minneapolis for all points east and south.

Pacific Coast and Return, \$60.00

S. S. "Minnesota" sails from Seattle for the Orient July 25.

S. S. "Dakota" sails from Seattle for the Orient September 2.

S. S. "Minnesota" sails from Seattle for the Orient, Oct. 20.

R. J. SMITH, D.F. & P.A.,  
447 Main St., Winnipeg

## DON JERSEYS

Don Jerseys rank second to none in Canada. Present offering is 3-yr.-old bulls, bred from prize winners and producers, and are a grand lot; as herd headers they have few equals. A few females could be spared.

D. DUNCAN, - DON P. O.  
Close to Toronto.

A COPY of **Hart's 1905**  
Handsome 64-Page Illustrated Pamphlet  
B.C. FARM & FRUIT LANDS  
MAILED FREE on request  
E.J. HART & CO. Box 200, New Westminster, B.C.

cart which collects the unsound meat is sent round; and the carcass is removed, either to be rendered useless for sale as human food by sprinkling it with petroleum or to be given to the Jardin des Plantes for the use of the wild animals. In this way, not a single pound of meat is offered for sale

## Ring-Bone

There is no case so old or bad that we will not guarantee Fleming's Spavin and Ringbone Paste to remove the lameness and make the horse go sound. Money refunded if it ever fails. Easy to use and one to three 45-minute applications cure. Works just as well on Sidebone and Bone Spavin. Before ordering or buying any kind of a remedy for any kind of a blemish, write for a free copy of Fleming's Vest-Pocket Veterinary Adviser. Ninety-six pages of veterinary information, with special attention to the treatment of blemishes. Durably bound, indexed and illustrated. Make a right beginning by sending for this book.

**FLEMING BROS., Chemists,**  
45 Church Street, Toronto, Ontario

in Paris without it having been examined. Before each carcass leaves the abattoirs the officials at the exit look to see that it is properly stamped, and at the same time that it is weighed."

## A PLATE OF SOUP.

Something happened last winter in Paris that I shall place side by side with the widow's mite of the gospel. You will remark the profound analogy, the close spiritual kinship of these two cases.

In the icy north wind of December a shelter was raised where warm soup was given to the unfortunate. A very old woman, who had long waited her turn, at length sat down and was served. Before she touched her portion, she noticed that a young robust workman beside her had already consumed his with an avidity that betrayed that he was famished. At once she pushed her plate toward the workman, and said to him, "I am not hungry: will you eat this?" The workman accepted.

But someone had noticed all that had passed. As they went out, he took the old woman aside, and said to her, "You were not hungry, then?" "Oh, yes," she answered, blushing, "but I am old and can bear it, and that poor young man was more in need of it than I."—CHARLES WAGNER in *The Gospel of Life*.

## MARK TWAIN AND THE OFFICE BOY.

Mark Twain does not cherish a fondness for the average office boy. He has an idea that the genus is insufferable, and invariably when the humorist sallies forth into some business office there is immediate armed hostility between him and the office boy.

One day Mark went to see a friend at his office, and the office boy on guard in icy tones said:

"Whom do you wish to see?"

Mark mentioned his friend's name.

"What do you want to see him about?" came next from the boy.

Mark Twain immediately froze up, and then with a genial smile he said:

"Tell him, please, I want to ask his hand in holy matrimony."

## REAL PUNISHMENT.

Corporal punishment is said to be the resource of a lazy and uninventive mind. A Washington woman does not believe in it. She makes the punishment fit the crime, according to *Harper's Weekly*. On one occasion one of her boys had surreptitiously appropriated an orange belonging to his younger brother. The misdemeanor was discovered before the culprit had deposited his spoil; so the two youngsters were summoned to the judgement seat.

"James," was the stern command of the mother, "take this seat, and you, Thomas, that one. Now, Thomas, give James the orange you have stolen from him."

When the lads had done as they were ordered, the mother added:

"James, I want you to take as long as possible to eat that orange. You, Thomas, are to sit there and watch him eat it. Under no circumstances are you to leave the room."

## AN ECHO ALARM CLOCK.

President Murphy of the Chicago National League Club told at a baseball dinner a remarkable echo story.

"There was a man," he began, "who had a country home in the Catskills. He was showing a visitor over his grounds one day, and, coming to a hilly place said:

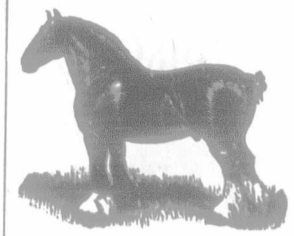
"There's a remarkable echo here. If you stand under that rock and shout the echo answers four distinct times, with an interval of several minutes between answers."

"But the visitor was not at all impressed. He said with a loud laugh:

"You ought to hear the echo at my place in Sunapee. Before going to bed at night I stick my head out of the window and shout, 'Time to get up, William!' and the echo wakes me at 7 o'clock sharp the next morning."—*Cincinnati Commercial Journal*.

"I don't want any castor oil," said a sick little Boston boy, petulantly. "Why, Horace," expostulated his mother, "don't you know that castor oil is made from beans?" And the little boy, whose faith in his mother is perfect, took the dose, and feebly asked for more.—*The Independent*.

## Shire Horses



We breed the very best and soundest, which from birth are kept in their natural condition, neither forcing nor overfeeding for showing purposes.

Canadian buyers visiting England are invited to call and see what we have.

No fancy prices, and all delivered free Liverpool landing stage. Correspondence invited.

Station: Aithorp Park, L. & N.-W. Ry.

**JOHN CHAMBERS & SONS,**  
Holdenby, Northampton, England

## Hawthorn Bank CLYDESDALES

## SHORTHORNS

Stallions and Mares always on hand for Sale, also Bulls and Heifers, all ages, both Imported and Home-Bred.

**JOHN GRAHAM - CARBERRY, MAN.**

## HACKNEYS AND CLYDESDALES



From such noted champions as Baron's Pride, Hiawatha, Marcellus, Macgregor, Baron's Fashion and Lord Lotherian, etc. Inspection invited.

For fuller description and prices, write

**T. H. HASSARD, Millbrook, Ont.**

## THOROUGHBREDS

Representative of the best blood in the Stud Book. Stud headed by **KELSTON**, 1st Prize and Sweepstake Stallion at Winnipeg, 1905. Stallion for sale at reasonable price. Correspondence solicited.

**R. DALE - S. QU'APPELLE**

## Bater & McLean

Live Stock Salesmen and Commission Agents,  
C. P. R. Stock Yards, Winnipeg.

## Auction Sales Horses Held Weekly

Every Wednesday, at 2 o'clock

when we will have yarded from one to three carloads of Eastern and Western Horses consisting of heavy drafts, farm, express, saddle and driving sorts. Entries for future sales now being received. Liberal advances made on stock sent for sale.

Bater & McLean, Agents Major S. Harris, Auct  
Phone 3222 Phone 4249

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If you have anything in our line, to offer, either in large or small consignments, write and get our prices. It will pay you.

**E. T. CARTER & CO., Toronto, Ont.**

## DISPERSION SALE OF Pure Bred

## Shorthorn Cattle

TO BE HELD AT

THE RANCHE, MANITOU

on 31st July

45 Head of  
EXCELLENT STOCK

For further particulars apply as above

**JOHN JARDINE**





FRONT ELEVATION OF THE NEW BUILDING ERECTED BY BRANDON CREAMERY CO., BRANDON, MAN.

**BRANDON CREAMERY CO.**  
The tremendous prosperity of the West is reflected in the advancement being made by the Brandon Creamery Co., Brandon, Man. This company has just completed the erection of a magnificent building on Rosser avenue, between 14th and 15th streets. The structure has a frontage of 44 feet and a depth of 72 feet. Its location is ideal, and its appearance very imposing, brick with stone trimmings giving it an air of great solidity. New machinery has been installed sufficient to double the company's output and even with such an enlarged capacity there is no doubt but that with their ever increasing demands the patrons of the firm will with their orders, keep the plant running from morning till night. Creamery butter is of course the specialty but eggs and cheese are also handled with scrupulous attention. We have pleasure in presenting herewith an engraving of the front elevation of the new building. Visitors to the big Brandon fair should not fail to see this up-to-date creamery.

**B. P. RICHARDSON**  
BARRISTER, SOLICITOR  
NOTARY PUBLIC  
Solicitor for the "FARMER'S ADVOCATE" for the Northwest Territories  
**GRENFELL, ASSA.**

**LANDS FOR SALE**  
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Canada Life Building  
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Solicitors for Farmer's Advocate  
R. FERGUSON  
W. W. RICHARDSON

A. F. KEMPTON, Secretary and Manager.  
C. D. Kerr, Treasurer

AUTHORIZED CAPITAL, \$500,000.00

## The Occidental Fire Insurance Co.

FULL GOVERNMENT DEPOSIT  
HEAD OFFICE: WAWANESA, MAN.  
Agents Wanted in Unrepresented Districts

### Trade Notes

THE MANITOBA GYPSUM Co. have had their plaster mill at Gypsumville, destroyed by fire. While the plant was well protected by insurance, still there is always a large loss in having a building destroyed in this way, no matter how well the insurance has been taken care of.

They were working into a splendid business in the manufacture and sale of all brands of Hard Wall and Wood Fibre plasters, etc. Their plasters were acknowledged by the trade, to be superior to anything ever imported from the States. The raw material controlled by the Manitoba Gypsum Company contains the purest gypsum on the continent,—the analysis showing it to be almost entirely free of any foreign matter.

The Company have decided to locate their new mill in Winnipeg and bring down the raw material for manufacture. On account of favorable arrangements made with the railway companies, they are enabled to do this to better advantage than by bringing down the manufactured plaster in the way they did from the old mill. The new plant will be one of the most modern and up-to-date mills on the continent, and there is no question that the business will develop on a much larger scale than ever.

The relations of the Manitoba Gypsum Company with the trade generally have been most satisfactory, and they have received assurance from all quarters that the support given them in their business in the past, will be fully maintained in the future.

It is expected that in the course of two or three months, the company will be in position to place on sale the product of their new mill, so that builders who have work on hand which will require plaster in the fall, will be able to obtain the Manitoba product right at home.

ELSEWHERE in this issue we present the "ad." of Alberta College, Edmonton. This institution has been forging ahead with wonderful strides during the past two years. The building has been enlarged, equipment improved and staff increased until it stands to-day as the representative college of Western Canada. For full particulars as to tuition, expenses, etc., write J. H. Riddell, B.A., D.D., Principal, Alberta College, Edmonton.

### DEPENDING ON PEOPLE.

EXPERIENCE TEACHES A WIFE WHAT TO EXPECT WHEN HE GOES TO THE CLUB.

When a married man starts for his club at 8 o'clock and tells his wife he will be back at 12, she smiles in a far-away style and does not sit up for him. As she expected he gets home between three and four. She knows him of old. There are a good many people and things in the world that cannot be depended upon. Grocers there have been who said eggs were strictly new-laid, drygoods merchants who said the cloth was all-wool. Then, too, there have been chairs which have collapsed at unseasonable times. But there are some dependable things. One is the Gourlay Piano. It has taken the musicians and the music-lovers of this country only two years to find out that the Gourlay takes first rank among the upright pianos of this or any other country. The firm of Gourlay, Winter & Leeming, Toronto know their instrument from top to bottom, they know the high quality of the material put into it, they know the capacity of the workmen assembling the parts, they know the satisfying character of the tone, and the artistic beauties of the case. And knowing all this, they say they have no apologies to make for the Gourlay. Purchasers of the instrument have been delighted and have published the praises of the Gourlay among all their friends. It is a piano well built and worthy of the confidence the public has reposed in it.

OUR READERS' ATTENTION is directed to the advertisement of the Veterinary Specialty Co., Limited, 106 Clarence avenue, Toronto. The incorporators and managers of this company are veterinary surgeons of life long experience and the various veterinary preparations manufactured by them are the result of their wide experience. In every package of their remedies will be found a coupon that entitles the holder to free veterinary advice.

Marjorie had been given some hard peppermint candies; and, after holding one in her mouth for a few minutes she ran to her mother and cried, "O mother, I swallowed that candy!", "Never mind," said her mother, "it will not hurt you." "Yes, I know," said Marjorie; "but I lost the use of it." —Selected.

### Patronize the Advocate Advertisers

Western Canada's

# Industrial Exhibition and Agricultural Fair

**WINNIPEG**  
**JULY 23-28**  
**1906**

**\$500.00**  
OFFERED FOR  
**PRIZES FOR WHEAT**

**THE FARMERS'**  
**ANNUAL SUMMER**  
**HOLIDAY**

The largest exhibit of Live Stock in Western Canada

Interesting Butter-Making Competitions open to Amateurs and also Professionals

The grandest collection of Art, Art Treasures, and School Exhibits ever got together in the West

The Carnival in Venice and the Knabenshue Air-Ship among the special attractions

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**CHEAP EXCURSIONS ON ALL LINES**

For further information apply to

**C. H. GREIG, President**      **R. J. HUGHES, Sec.-Treas.**      **A. W. BELL, General Manager**

Questions and Answers

Veterinary.

REARING CALF.

My cow gave birth to a bull calf which came all right so far as I could see but did not seem to be very strong on its legs and made little or no attempt to get to its mother for milk. We have held it up so that it could suckle three or four times and it seemed to get better and once got on to its legs, that was about four hours after birth, then it seemed to fall away again. We fed it a little milk fresh from the cow with a spoon but could not get much into it and most of the time only lay in all sorts of positions. It died after having lived about 20 hours. Would you give me the best treatment of calves at birth as I have not had much experience with cattle.

Sask. T. N.

Ans.—This is simply a case of a calf being born weak. There are quite a large percentage of births of this kind this year especially among foals. When an animal is born with so little vitality that it cannot get to its feet its chances of living are very slim and little can be done for it other than to help it to the teat. When one comes to examine into the cause of the low vitality he may find several causes: the parents may not be of strong constitution, the food of the dam may have been scanty or she may not have had exercise and sufficient grain, she may have had some shock or the young may be weak form no visible cause.

The best way to handle young calves is to make conditions as near natural as possible. Give the cow plenty to eat and drink and lots of fresh air, then when the calf is born let nature tell him what to do. A drink of bran slop fortifies the cow at this time but otherwise she should be left alone.

HORSE RUBBING ITS TAIL.

1. Please give a remedy to stop a horse from rubbing its tail while in the stall.

2. Give a cure for horse eczema.

Ans.—1. Wash tail thoroughly with castile soap and warm water, rinse all soap suds out, then apply bicarbonate of potash half ounce to a pint of water twice daily. See that all around anus is kept clean.

2. Give laxative diet (grass), also one ounce Fowler's solution of arsenic once a day and Epsom salts, one tablespoonful once a day. Apply corrosive sublimate, eight grains to a pint of water, every second or third day.

PARTIAL PARALYSIS.

Sow farrowed last February. The litter was weaned in six weeks. About a month later, the sow was bred again. Three weeks later she lost power of her hind quarters and has remained in this condition. She can move her limbs, but cannot stand. She has been fed on two parts ground oats, one part ground barley, one part corn chop, with skim milk and swill. She weighs about 200 pounds.

E. B. H.

Ans.—It is doubtful if she will recover. Purge her with four ounces of Epsom salts, and keep her bowels working freely by giving daily a little of a mixture of equal parts Epsom salts, sulphur and charcoal. Give, three times a day, 20 grains nux vomica. Feed on bran, milk and grass. Feed no grain.

INVERSION OF UTERUS.

I have a good young cow which inverted the uterus, May, 1905, it being her second calf, a retainer and stitches being used. I let her go farrow till January, 1906. She has grown considerable since and looks stronger. Will it be safe to breed her in October? I would like to keep her. My neighbors say I will lose her. I am without experience, and the cow is desirable. What shall I do?

J. W.

Ans.—It does not necessarily follow that she will invert again, but it is well to take a few precautions, such as having

her kept, immediately after calving, with her hind end well elevated. If much straining persists, give tr opii, three ounces, or chloral hydrate, one and one half ounces.

LAME MARE.

About two months ago my mare went lame in off fore leg, and a lump appeared on outside of leg just above the knee. I put some stuff on, but it did no good. She is stiff, and tumbles when she trots.

P. M.

Ans.—Some of the bones of the joint are diseased, and the lump mentioned is a bony enlargement. This will be hard and tedious to treat. It would be better to get a veterinarian to fire and blister it; but repeated blistering would probably effect a cure. Take two drams each biniodide of mercury and cantharides, and mix with two ounces of vaseline. Clip the hair off; tie so that she cannot bite the parts; rub well with the blister once daily for two days; on the third day wash off and apply sweet oil. Let her head loose now, and oil every day. As soon as the scale come off, blister again, and, if necessary, again in about four weeks. She should be rested during treatment.

INDIGESTION.

1. About three weeks ago my bull, eighteen months old, bloated. I gave one and half pounds of Epsom salts, and followed up with salts and oil. He keeps rifting a lot of wind. He is on grass.

2. Same bull appeared hard and sore in the skin when pinched behind the shoulder last night, but was alright this morning.

J. C.

Ans.—1. This is a form of indigestion. Give him, three times daily in a pint of cold water as a drench, two drams each powdered gentian and powdered ginger, and four drams bicarbonate of soda, and add to his drinking water one sixth of its bulk of lime water. It will be better to keep him in the stable and cut grass for him for a few days, and allow him to take exercise in the yard. The amount of food should be limited until his digestion improves. If necessary, give him another dose of Epsom salts.

2. The hardness of the skin could not have been well marked, as it disappeared so quickly. You need not be alarmed about this, it is not serious.

CHRONIC COUGH—SPAVIN.

1. Ten year old horse coughs occasionally, probably once in two or three days.

2. Mare, nine years old, gets stiff in near hind leg when standing, but after driving a few rods she goes sound.

W. H.

Ans.—1. Chronic coughs are very hard to treat, and I do not consider it serious for a horse to cough once in two or three days. You will probably be able to check it by giving each morning a ball composed of one and a half drams gum opium, two drams solid extract of belladonna, fifteen grains digitalis, and one dram gum camphor, mixed with sufficient oil of tar to make it plastic. Roll in tissue paper and administer.

2. The symptoms indicate bone spavin. Get your veterinarian to fire and blister it.

LIKELY FOUNDERED—CURB—BOG SPAVIN.

I have a gelding, six years old, that stands with one front foot ahead of the other when in the barn and his hind feet spread apart. When I try to have him step over in the stall he lifts first one then the other of his hind feet as though they hurt him. He isn't lame and travels well on the road but is worse after a long drive. He eats well and is in fair condition. His coat is soft and slick.

1. What will cure curb?
2. What will cure bog-spavin?

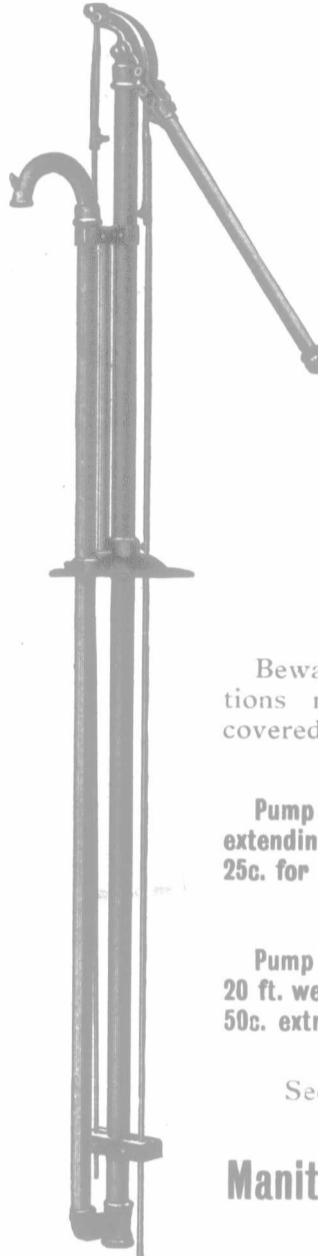
Ans.—From the description you give your horse has stringhalt, or is founder. Feel the coronets and find out whether there is unnatural heat present.

2. High heeled shoe rest, blistering of the curb; some report success from rubbing with a piece of stick, oiling the curb to prevent abrasion.

3. A very unsatisfactory cure to attempt, and unless the animal is lame from it would advise letting it alone.

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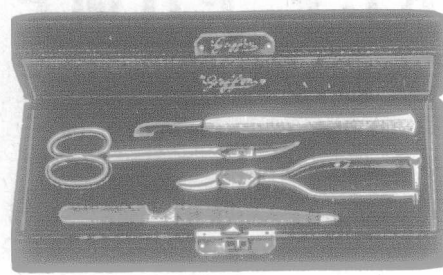
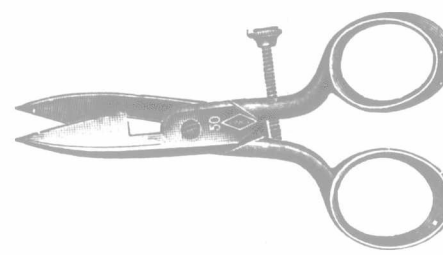
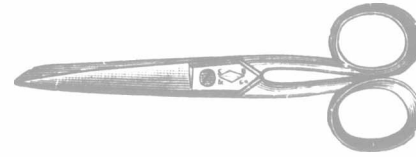
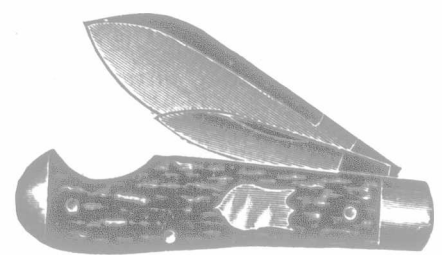
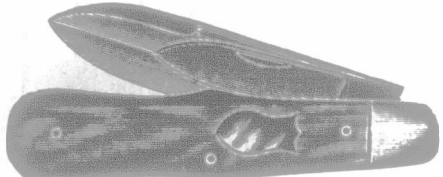
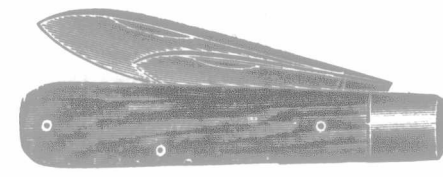
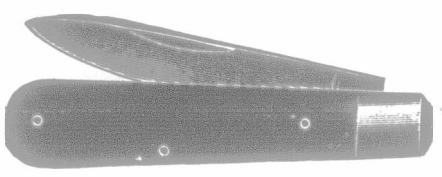
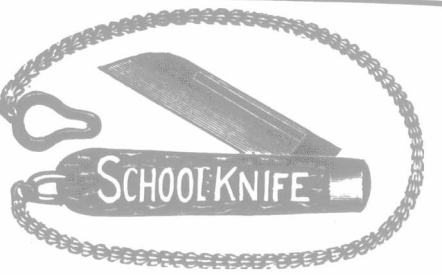
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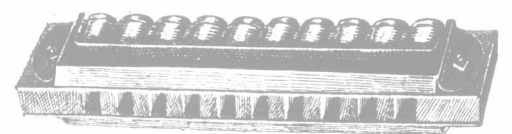
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Farmers Can Afford to Take Risk.

EDITOR FARMER'S ADVOCATE:

In your issue of June 6th, you published in the form of an editorial, a rather severe criticism of the honesty, business ability and stability of the promoters of the Grain Growers' Grain Co. While it must be conceded that any journal published in the interests of agriculture has the unquestioned right to warn the farmers against any line of action detrimental or disastrous to their well-being, still in the opinion of the writer, the "caution" recommended in this instance is hardly necessary and the character of the criticism wholly uncalled for.

In regard to the name being similar to that of the well-known farmers organization, I think the charge that there has been a breach of "commercial honesty" or "sharp practice" on the part of the promoters is wholly unwarranted by the facts in the case.

Having had a lengthy experience in the marketing of grain as a farmer in Manitoba, and knowing something of the impositions and financial loss sustained by farmers in selling their grain during the past twenty years, I am not at all surprised that the "idea" of the farmers marketing their own wheat "was hatched in the fertile brain of a western Canadian farmer." The atmosphere surrounding the farmer's market in the past, owing no doubt, to the amount of "friction" always existing between the farmers and the grain combine has been kept at a temperature sufficiently "warm" to have hatched a South American revolution, had it occurred in the proper geographical locality, as these conditions, however, have had their existence in a northern clime among a cold blooded, phlegmatic people the "hatching" process has only brought forth an innocent commercial enterprise designing injury to no man.

The "scheme" referred to in your editorial had its origin in a suggestion offered at the G. G.'s Convention held in Brandon 1905, by Mr. E. A. Partridge of Sinaluta. The convention thought sufficiently well of the proposition to appoint a committee to investigate the feasibility of Mr. Partridge's proposition and to outline a plan for its consummation in practical form. This committee reported to the G. G.'s convention of 1906, outlining the "scheme" in question and such report was adopted by the convention. It is the recollection of the writer that no resolution or motion was passed at the convention designed to show that the Grain Growers' Grain Co. was to be an entirely separate and distinct body from the Grain Growers' Association. Mr. Jas. Riddell and one or two others expressed themselves, advising the Association not to ally itself to the commercial company in any way, but I do not think these gentlemen were authorized to speak for the entire convention. It must be borne in mind that the committee appointed by the G. G.'s Association are responsible for the name proposed "Grain Growers' Grain Co." and the Grain Growers' Association in adopting the said committee's report adopted the name without question.

Under these circumstances Mr. Editor, your statement that the promoters "are anxious to trade on the success" of the G. G.'s Association is not well founded, and the insinuation of "sharp practice" in connection with the name is an uncalled for reflection upon the promoters.

"The Grain Grower's Association have distinctly declared that they are not behind this scheme."

We are curious to know, Mr. Editor, what action on the part of the G. G.'s Executive or the convention sustains the above assertion. Who "distinctly declared" they were not "behind this scheme"! When and in what form did the declaration take place?

You appear to have "grave doubts of the ultimate success of the new company because in its very inception the company has, in spite of the discussions and protests at the G. G.'s convention, elected to sail under colors belonging to another organization."

I trust that if this assertion is shown to be incorrect and you have been misinformed in the matter, the "grave doubts of ultimate success" will speedily disappear and you will be glad through your editorial columns to give expression to high hopes for the success of the company. Now, Mr. Editor, I will agree to become a life subscriber to the ADVOCATE if you will name one man who in open convention at Brandon protested against the name "Grain Growers' Grain Co." being used by that company or if you will name five Grain Growers who in open convention protested against Grain Growers becoming members of the Grain Co. Even if there had been one hundred protests out of a meeting of perhaps five hundred, I do not see that the Grain Co. was in duty bound to recognize such objections unless the convention passed a resolution to that effect. So much for the actions of the Association.

Now what has been the course of the Grain Growers' Grain Co. in connection with the matter? While the promoters felt that they were under no obligation to recognize the protest of a few grain growers at the convention, still to remove even a vestige of grounds for complaint or friction between two organizations, whose membership and whose interests were likely to be largely identical, the promoters of the Grain Co. decided to organize as a distinct body to include all farmers who cared to take stock in the company regardless of whether they were members of the G. G.'s Association or not. The prospectus of the Grain Co. issued in May last, clearly states that the organizations in question are separate and distinct bodies, which still further, confutes the charge that the promoters desired "to trade under colors belonging to another organization".

You believe, Mr. Editor, that it would "be a good thing" to build a farmer's elevator at every grain shipping point and "until farmers generally are successful in these smaller enterprises go slow on the bigger ones." I agree that this would be about the only way to make farmer's elevators a success, as it would prevent the line elevator companies from "cinching" the farmers at a dozen points to starve out the farmer's elevator at one point. But just give us an estimate of the capital required to run this "smaller" enterprise, Mr. Editor, and then we will have some conception of the error involved in your estimate of the Grain Growers' Grain Company's "bigger" scheme.

I am at a loss to know how to remedy the complaint that "some of the men placed in the front in the organization are not staid and conservative enough" for the enterprise. The blame must rest with those who placed them there. I will not deny that you may know the front rank better than the present stockholders do and a little friendly advice from you to the latter may result in more conservatism being introduced into the front of the Company, but you must remember that conservatism is not always a commendable quality (the Manitoba Methodist Conference will bear me out in this assertion). Conserve only the right and correct the wrong is always a safe precept and one which the promoters are endeavoring to live up to in the formation of the Grain Company.

I am going to make a statement, which in this mercenary age you may find difficulty in believing. The promoters of this company have sufficient means of their own to go into the grain business for purely selfish purposes on their own account, if they so desired. The fact that they are endeavoring to give

AN EDUCATIONAL EVENT.

A great and pregnant event in the history of our province and country is the consolidation of the magnificent educational enterprise at St. Anne's with McGill University, an arrangement by which it is safely vested for all time in a keeping which has so far shown itself progressive, broad and patriotic. McGill University has in the past been simply a well situated foundation to be administered so as to produce the best results its means would afford—means that were constantly being added to by the patriotism of the merchants of Montreal. McGill is indeed a splendid monument to the broad spirit of Montreal merchants; for all that has come to her from any other source has been so minute as to leave all the honor in that quarter.

Time was when McGill had the whole of British North America as her sphere. She is still the least provincial and most national of the country's institutions of learning. It is her supreme interest to nationalize the country as it is that of others to provincialize it. She is more than any other the country's educational centre. It has to be acknowledged, however, that, as institutions in other provinces develop and other institutions in our own, her sphere is more localized and specialized. Except where there are transcendent advantages of personnel or equipment a university derives her undergraduates from a comparatively small radius. The time was when a considerable proportion of her students in law or medicine were French-Canadians; but Laval has supplanted her in this service. It is therefore her special sphere and her special need to develop to the utmost the primary and secondary education of this province, especially among the minority, and to this task she has addressed herself in earnest. Every way in which her advantages can be brought within the reach of the people or can be urged upon them is being tried; witness the Library school now going on, the French Summer school, and so forth. But there never was a more hopeful way of awakening what might be called an educational patriotism on the part of the people than the plan of Sir William Macdonald to introduce nature study into the schools, in forms which should have an immediate effect in improving surrounding agriculture and farm life, in giving the rising generation a pride and interest in their farm homes and in staying the diminution of our people.

If Canada is ever to be a nation it is to be brought about by the different elements of the people living together and not apart. It is not for the nation's good that this province should become exclusively French. Some would even ask whether nationhood would be possible under such conditions. This agricultural college will not only radiate from itself, among French as much as among English-speaking people a knowledge of and a delight in agricultural pursuits and higher farming generally, but a like influence will go forth from all the rural schools in which a joy in nature and a pride in agriculture will be instilled into the young. There is one advantage in this magnificent acquisition of McGill University, which has not been a feature of all gifts to her. Most of these have made her poorer instead of richer. Nearly all gifts to the university have taken the form of new features. They have thus, not only not relieved financial embarrassment, which is chronic, but as a rule involve more expenditure than is provided for or even foreseen. This has not been the case with Sir William Macdonald's gifts, which he has more and more followed up with abundant provision for maintenance, and this, we have no doubt, will be found eminently the case with the new college of agriculture.—Witness, Montreal.

\* \* \*

That man was unfortunate in his experience of humanity who said, "The more I see of men the more I admire dogs." His friends doubtless agreed with him.

\* \* \*

Procrastination is the thief of desire. If you want to hate a piece of work sincerely, put off doing it.

\* \* \*

It is strange that the persons that pride themselves on always saying just what they think, have always thoughts of which no one could be proud.



FARMER'S ADVOCATE

(Photo by W. Way, Okotoks.)

A BACHELOR'S WINTER NECESSITIES.

every western farmer an opportunity to partake in the profits of the business ought to be conclusive proof that the aim of the promoters is not a wholly selfish one. Besides you are doubtless aware that millions of dollars are being lost to the western farmers in the marketing of their grain and the promoters of the G. G. Co., I think rightly consider that if but a small part of this loss could be diverted into capital stock of a grain company, controlled by farmers themselves, it would be only the highest wisdom on the farmers' part to do so. Paradoxical as it may appear to you, Mr. Editor, it is out of this yearly loss that we expect the bulk of the capital to come for the purposes of this Grain Co. If this is not sufficient to conduct a successful grain business, I for one, see no necessity for the existence of a farmers' grain company. But the past history of the grain and elevator business, as well as existing conditions of trade warrant the expectation that the company can produce its assets out of what would, under the present circumstances, be only loss to the farmer. Is it, therefore, a very reckless "plunge" on the part of the average farmer to subscribe \$50.00 or \$100 stock in this Grain Company, when he can pay it out of what he is now losing in the marketing of his grain?

With a proposition of this kind before the prairie farmer, I feel disposed to think that the "caution" suggested by an agricultural journal is rather out of place and the warning to the farmers against the company had been more fitting had it appeared in the form of advice to take stock promptly before it should be all subscribed for.

It is one instance at least where the farmers can well afford to be reckless. GRAIN GROWER.

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To Milwaukee and Chicago. Preferred Train of all others for first-class travel to Chicago.
- 11.00 p.m. The Night Express**  
To Milwaukee and Chicago. Splendid Train for Late Night Travelers.

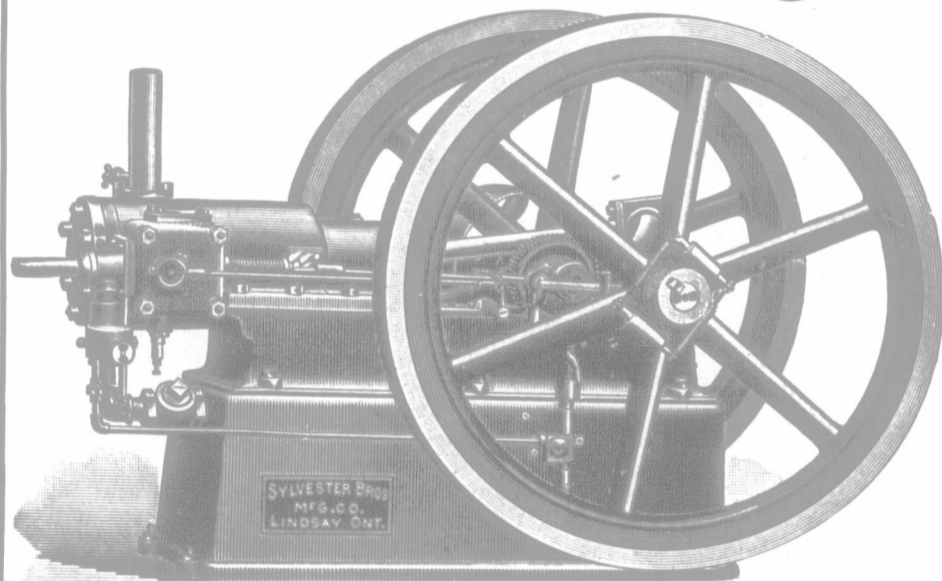
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Used your 6 Hp. in our shop for 3 years; best of satisfaction.—Friesen Bros., Steinbach.  
The 10 Hp. works well.—Chas Wilkinson, Moosomin.

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The 8 Hp. (stationary) ran 32 in. Belle City Separator last fall, threshed 600 bushels wheat per day.—A. M. Bell, Carman.  
My 12 Hp. runs 28 in. separator, with feeder.—Thos. Potts, Dominion City.

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### Miscellaneous.

#### WIFE'S SHARE OF PROPERTY.

In the Northwest Territories how much of a man's property can a lawful wife claim if her husband died without making a will and he leaves no children for heirs?

Alta. JNA.

Ans.—If there are no children the wife is entitled to all; if he leaves children the wife may only have one third and the children two thirds.

#### LOSS FROM FIRE.

I have been feeding cattle for P. Burns & Co. all winter on my land with the idea in view of enriching the soil, but last week comes a fire, which jumped the fire guards, for I am well guarded, and the ground being dry as well as the manure and everything, it burns up the manure, also about 150 fence posts; even my big corner posts are burned off at the ground. Who should be responsible and can I collect for them; also how shall I go about it?

Alta. L. B.

Ans.—It depends upon circumstances. If it could be proved that some one was criminally negligent with fire and if the responsible party were in a position to make compensation, then you might recover, but you would have to prove negligence which might be extremely difficult and expensive.

#### COST OF WALL.

What would be the difference in cost between a stone wall 30x60x8 by one and a half feet thick and one the same length and height one foot thick? I have the stone on my place but would have to haul the gravel. Lime is worth 60c. per bushel, sand 40c. per yard and cement about \$3.50 per barrel.

Alta. E. B. S.

Ans.—It is impossible for us to give the exact cost of a wall in Alberta not knowing what stone masons would charge for their work. With the stone on hand the cost of the materials is a little in favor of the stone but by the time you paid skilled labor to dress the stone and lay the wall the concrete would be the cheaper. If you used cement you would require about forty barrels but for a building that size you would not need to make the wall a foot thick, you might start it twelve inches and finish at eight. All the work with concrete could be done with unskilled labor and so the cost of cement would be largely offset by the labor account.

#### STONE OR CONCRETE.

Is a cement wall six or seven inches thick strong enough to hold a house 16x26 feet and 14 inch studding? Will a cement wall that thick keep frost out of the cellar? Some say frost will not go through cement. Will a cement wall seven inches thick keep frost out better than a stone wall a foot thick, both being the same height out of the ground?

Alta. W. A.

Ans.—Seven inches might be thick enough to hold the walls but it is not thick enough for security and to prevent freezing. Under the circumstances you should make the bottom of the wall about twelve inches thick and taper it in at the top to about nine or ten inches. This would be thick enough to prevent freezing if it did not extend more than three feet above the ground and there was a furnace in the cellar. Otherwise the wall should be about a foot thick above ground. A concrete wall will withstand frost a little better than stone but not to a very perceptible extent.

#### HORTICULTURAL JOURNAL.

Will you please inform me of a good horticultural paper or magazine and the address of same published in Canada?

W. A.

Ans.—The Canadian Horticulturist, Toronto, is about the only exclusively horticultural paper in the Dominion but unfortunately it is decidedly local and is supported by the Ontario Government as the organ of the Ontario fruit growers association.

#### PLANT LIFE OF WESTERN CANADA.

Please let me know if there is a book on the flowers and native plants of western Canada. I think I saw an announcement in the FARMER'S ADVOCATE some time ago, but cannot find it now.

Sask. J. I. N.

Ans.—There does not seem to be a work published on the flowers and plants of western Canada alone. But "Mountain Wild Flowers of Canada" by Julia W. Henshaw will give you a good account of Canadian flowers found in high altitudes, and "Studies in Plant Life in Canada" by Catherine Parr Traill is a comprehensive illustrated work including the whole Dominion. Each of these volumes costs two dollars, and can be obtained from William Briggs, publisher 29-33 Richmond street W., Toronto.

#### CASH DEPOSIT BUT NO GOODS.

A correspondent who does not sign his name, writes that he contracted with a firm in Minneapolis to take certain samples and novelty case for the consideration of a cash deposit and express charges when the goods were received. Since making his deposit he has been notified by the express company that the goods have been shipped but he can get no further track of them nor reply to his letters of complaint either from the express company or from the firm from whom he was buying. He now wants to know what to do.

We suppose that the express company has lost track of the parcel and is trying to locate it, and if our correspondent waits long enough he may get it, but in the meantime if the firm with whom he is dealing is reliable they should provide another outfit as we presume it is for canvassing purposes. It would be a good plan to write to the chief of police at Minneapolis and ask about these people. If they are a bona fide concern give the matter into the hands of a lawyer to settle.

#### CURING BEEF—RUSTING PLOWS.

1. Will you kindly give recipe for curing and drying beef during hot weather?

2. Give address of a reliable firm where ox harness can be bought.

3. Can you give recipe of paint for painting mouldboard of a plow and such like after season's work to prevent rust?

Ont. Z. A. C.

Ans.—1. The following is recommended as a satisfactory method of curing beef: To each gallon of water add one and a half pounds of salt, half pound of sugar, half ounce of salt petre and half ounce of potash. Boil, skim, and when cold pour over the meat. After it has stood in this brine about three weeks take it out and when dry wrap in paper and hang up in sacks or bury in grain.

2. The Great West Saddlery Co., and The Adams Bros. Saddlery Co. are makers of harness of all kinds at Winnipeg, besides whom there are all the local harness makers who could make a set.

3. Rub well with some kind of oil such as raw linseed, or unsalted butter.

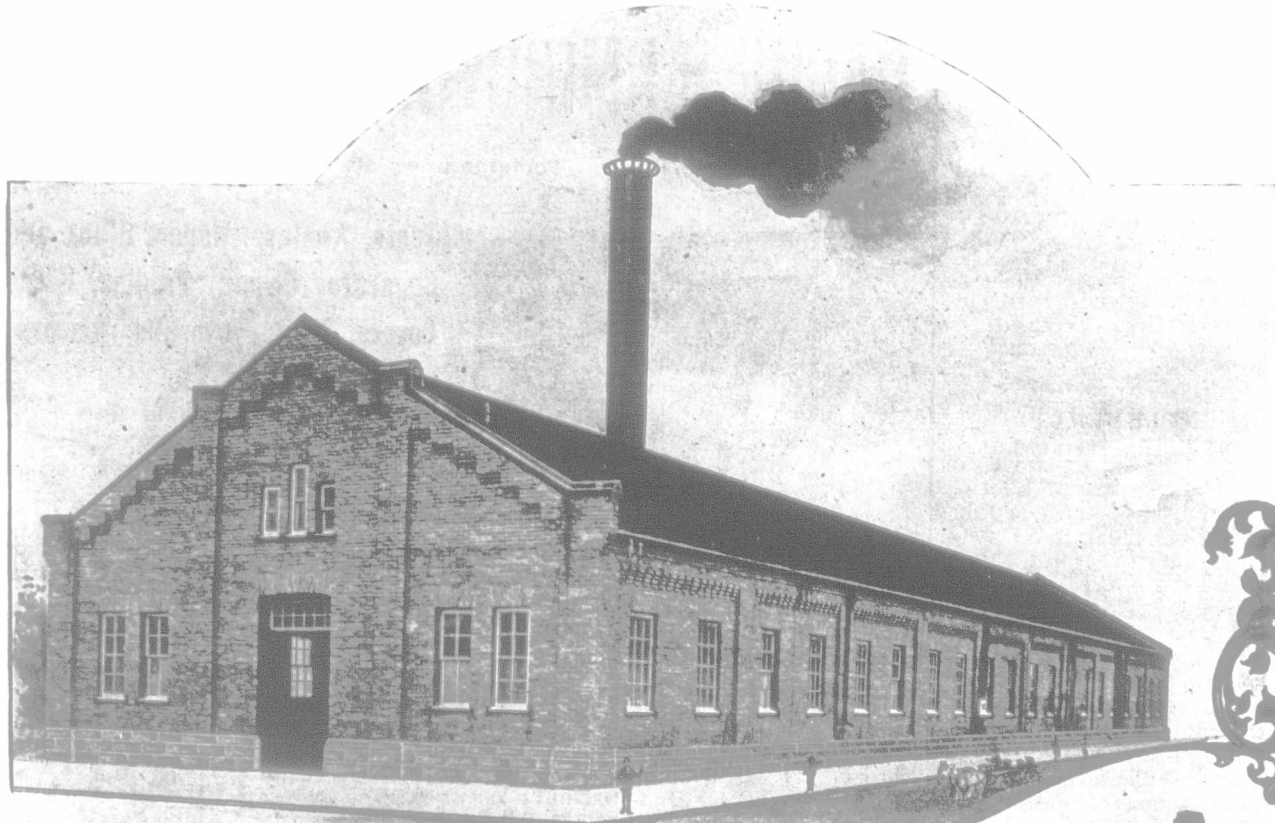
#### PRESERVING FENCE POSTS.

In your last issue, June 27, under the heading of tarring fence posts, the writer, Mr. Jas. B. Ross, does not say what kind of posts his neighbor used; this we would like to know as hard wood posts are very expensive in our district. White poplar will only last about three years, and if by applying tar they would last from ten to twelve years I think it would be of great interest to a number of readers. Kindly mention as to how the tar is applied.

A. J. S.

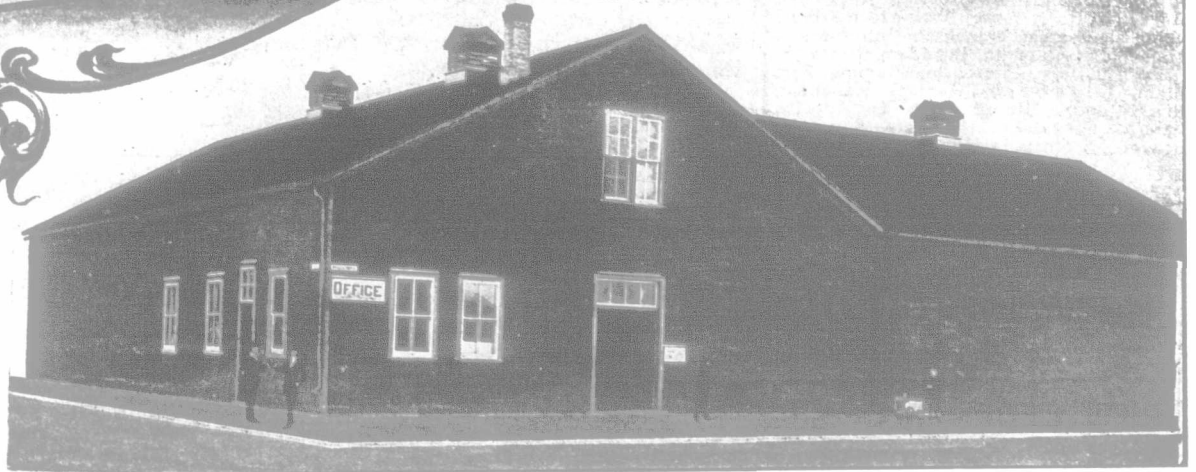
Ans.—We believe Mr. Ross referred to cedar posts but the application of tar has a preserving effect upon all kinds of wood. White wash is also good. The coal tar is heated in a large iron kettle and put on with an old broom or poured over the posts with a ladle and spread with a broom. With white wash the treatment is similar, or a trough might be made and the posts rolled in it. Such treatment will prolong the usefulness of any kind of wood from one third to twice their average age.





#### THE MANITOBA WINDMILL AND PUMP COMPANY.

Herewith we present an engraving of the offices and plant of the Manitoba Windmill and Pump Co., Brandon, Man. It is safe to say that in excellence of appointments, business convenience and mechanical equipment these works cannot be surpassed. Some idea of the enormous trade built up by the company may be gained from the fact that they have on hand large orders in all of the following lines: Steel pumping



pure blood must be discarded which is spread over the country for the use of less pretentious breeders who, were it not that nature is so careless of her favorites would never have the benefit of the best bred horses.

Each year Mr. Seagram makes a draft sale from his stables of horses of first quality which are only let go because they are unable to add a few seconds to their speed. In this way an incalculable value is added to the light horse stock of the country. The fascination of breeding horses that can stand at the head of the list is the chief object of Mr. Seagram's keeping his extensive stables at Waterloo. He has followed this hobby for years and in that time has given a wonderful impetus to horse breeding all over America. It has often been said that to produce the highest types required the sacrifice of much time and money and to those who like Mr. Seagram have so unselfishly given to this enterprise the gratitude of the whole country is due. Continued success to those bold

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and power windmills, gasoline engines, Manitoba wood and iron pumps, all sizes of grain grinders, emery wheels, grain elevators, steel and wood frame wood saws, Daisy Hayes two cylinder force pumps, iron and brass as well as porcelain cylinders, steel and wood tanks, air pressure water works system, pipe dies, vices, cutters, wrenches, pipe and fittings, hose belting, and babbitt metals. The management of the company is in the hands of Mr. Williamson, than whom there is none better fitted by experience, energy and faculty for detail to look after wide commercial and manufacturing interests. If you are interested in any goods turned out by the Manitoba Windmill and Pump Co. get into communication with the firm at once. You will find them at your service at all times and their dealings never fail to result in the maximum of mutual satisfaction.

#### SOME RACE TRACK HEROES IN ART.

Through the courtesy of Mr. Joseph E. Seagram of Waterloo Ont., there now hangs on the wall of our new office on Princess St. Winnipeg, a beautiful reproduction of the eleven horses that carried Mr. Seagram's colors to victory up to 1905 in the greatest classic race in America, the Queen's or King's Plate annually run at the Woodbine track in Toronto. Had Mr. Seagram waited awhile before bringing out this beautiful work of art he could have added this year's winner, Slaughter, to the list thus making an even dozen.

The individuals in the picture with the year of winning are 1891, Victorious; '92, O'Donohue; '93, Martello; '94, Joe Miller; '95, Bonfield; '96, Millbrook; '97, Ferdinand; '98, Bon Ino; '00, Dalmoor; '01, John Ruskin; '05, Inferno.

One who is not in the actual business of breeding horses for such strenuous work as the race track demands can have little idea of what it means to the country and to those engaged in the business. And this is what makes the winning of the plate of such significance to all horsemen, that the horse must be province bred and in the effort to get a winner an immense amount of

unselfish spirits is the hearty wish of every horseman.

#### ADVERTISING BOTH HOUSES.

It is a peculiar belief among the youngsters of many families that the new baby sister or brother is the gracious gift of the family physician, and this belief is generally based upon the solemn assurance of papa and mamma, who tell some fairy story in order to tide over those events that occur occasionally in the best regulated families. Now and then a boy takes the law into his own hands. The young son of a well-known tailor and the young son of a well-known doctor were very chummy, and the former accompanied the latter one afternoon on an advertising expedition. The advertising was done by means of paint brush lettering, being quickly traced over any smooth piece of wood or stone encountered on the way. Well, in the evening the doctor's hopeful returned, and he was asked what he had been doing during the day.

"Advertising," quoth the boy.

"Advertising whom?" inquired the father.

"You and Mr. Brown (the tailor)."

"Me?"

"Yes."

"How did you advertise me?"

"Oh, we fixed up a sign that said,

'Buy your trousers from Brown and your babies from Doctor Jones,' said the boy calmly.

Professor Maria Mitchell was once ordered beer by her physician as a tonic. On the way to visit her sister, Mrs. Joshua Kendall, of Cambridge, Mass., she stopped at a saloon (it was before the no-license regime), and bought a bottle of beer, which she asked her brother-in-law to open for her. The Mitchell family spoke the "plain" language among themselves. "Where did thee get it, Maria?" questioned her sister. "At the saloon on the corner," replied Miss Mitchell, serenely. "Why, Maria, doesn't thee know respectable women don't go into such places?" "I did," said Miss Mitchell, in the manner of one that has done all that could be expected. "I told the man he ought to be thoroughly ashamed of his traffic."

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**Liquor or Tobacco Habit Cured in 30**  
to 60 days—cure permanent. State whether to be given secretly or with knowledge of party. If you have a relative or friend addicted to either habit, send 50 cents for each receipt. Thousands have been cured with this formula. Address, B. J. FINCH; Leavings, Alta.

#### DENATURIZED ALCOHOL THE COMING FUEL.

The continued advance in price of gasoline due to the monopolistic control of the Standard Oil Company has created an intense interest in the use of some other liquid as a heat generator. Denatured alcohol is now the most promising substitute for gasoline and different commercial and industrial associations have concerned themselves in this product to the extent of passing resolutions asking government to remove the duty on this substance. With denatured alcohol there is no experimental stage to be undergone as its uses have already been proven. Denatured alcohol is said to be cheaper, more convenient and less dangerous than gasoline, can be produced in unlimited quantities, and is not easily subjected to monopolistic control. Germany has taken the lead in permitting the adoption of alcohol in motor and other engines of similar construction by removing the taxation that is the chief item in its ordinary price. To maintain the tax on alcohol devoted to other uses that which is exempted is "denatured"—that is, so transformed by the addition of unnecessary chemical substances as to be unfit for use in making beverages or medicines. The denaturizing is effected by two methods known as the complete and incomplete, and many different ingredients are adopted for each, according to the subsequent use for which the alcohol is intended. The

regulations provided are elaborate, and while they must of necessity increase the cost of the alcohol, they still leave it cheaper in many districts than gasoline. During the year 1903 there were 26,080,505 gallons of completely denatured alcohol used for heating, lighting, and various processes of manufacture.

#### DIFFERENT PROCESSES

There is a wide choice of processes available for incomplete denaturizing. Alcohol to be used in the manufacture of ethers, aldehyde, agaricin, white lead, silver bromide, gelatins, photographic papers and plates, electrode plates, collodion, salicylic acid and salts, amine chemicals, and for a number of other purposes is denaturized by the addition of either ten liters sulphuric ether, one liter of benzol, one-half liter oil of turpentine, or 0.025 liter of animal oil to one hundred liters, or about twenty-six and one-half gallons. For the manufacture of varnishes and inks alcohol is denaturized by the addition of oil of turpentine or animal oil, and for the production of soda soaps by the addition of castor oil. Alcohol for the production of lanolin is prepared by adding five liters of benzine to each hectoliter of spirits. The price of denaturized alcohol varies in the different states and province in accordance with the yield and consequent market price of potatoes, grain, and other materials. At the present time alcohol of 95 per cent. purity, which is the quality ordinarily used in Germany for burning, sells at wholesale from 28 to 29 pfennigs (6.67 to 6.9 cents per liter, 1.06 quarts), and at retail for 33 pfennigs (7.85 cents) per liter. It is such advanced moves as this that have enabled the Germans to make headway against a burdensome protective tariff. Congress has already profited by the example, and our own government should give equal favors to Canadian manufacturers and others who may become users of alcohol for industrial purposes.

During the last few years hundreds of mining companies have installed gasoline engines to run power and lighting machinery. In competition with cheap fuels, such as coal and wood, gasoline has not made a marked advance but in regions remote from such fuel and sources of cheap water or electric power, it has been extensively adopted. Whether or not the rapidly increased price of gasoline was justified by the danger of a shortage on account of the greatly increased demand, is a question. The fact remains that the price of gasoline has nearly doubled in a few years' time, and the retail price to-day varies from 20 cents per gallon in the vicinity of the oil regions, to from 40 cents to 60 cents in most of the mining camps of the West.

The public has only just awakened to the fact that the removal of the present tax on denaturized alcohol will make it available as a cheaper and in many ways better fuel than gasoline. Denaturized alcohol may be briefly described as pure grain alcohol mixed with from 10 to 50 per cent. of such liquids as wood alcohol gasoline, etc., in order to make it non drinkable. At prices ranging in price from 15 cents to 30 cents per gallon, it can be made as a by-product at any place where potatoes, sugar beets, corn or grain can be grown. For hoisting, pumping, power machinery, etc., at isolated mines where other fuels are dear, this alcohol will make possible a considerable reduction in expense.

Hitherto the objectionable stench from gasoline locomotives has been one of the items contributing to prevent their extensive adoption for underground mine work. But locomotives having the manifest advantage of this type and burning alcohol, thus eliminate the only objection of mining men, as there are many mining situations to which they are admirably adapted.

A gentleman went into a restaurant and ordered a plate of soup. After a long wait, the waiter brought it in, and placed it before the diner. After examining it, he said to the waiter, "What do you call this stuff?" "Bean soup, sir," replied the waiter. "Yes, I know it's been soup; but what is it now?"—Titbits

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Write at once for descriptions and full information to

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### MORE EATING THAN SEEING.

George Ade, the humorist and playwright, told a story recently of a farmer who went to a large city to see the sights. The rural visitor engaged a room at a hotel, and, before retiring, asked the clerk about the hours for dining.

"We have breakfast from six to eleven, dinner from eleven to three, and supper from three to eight," explained the clerk.

"Wa-al, say," inquired the farmer, in surprise, "what time air I goin' ter git to see ther town?"—*Judge.*

### HIS OPINION OF THE DINNER.

The guests at a large dinner-party did justice to the tempting viands as course after course was served. They were loud in their praises of the Chinese cook of whom the hostess was justly proud. They declared they never eat more delicious or appetizing delicacies. Finally the Chinaman brought in the last course, a huge cake heavy with frosting. He was a converted Chinaman and desiring to honor his religion, he put a motto on the cake that satisfied his conscience. It read: "Prepare to meet thy God."

### CONSERVATION OF SOIL MOISTURE.

The productive capacities of a soil are measured not only by its chemical composition and its physical characteristics, but also by its moisture content. Its maintenance at as near an optimum as may be should be the goal of the husbandman, for this, more, perhaps, than any other one factor, is the measure of the crop's success. Moreover, the available supply is more nearly within his personal control than he is apt to think. So significant a matter, of such vital importance, warrants discussion in some detail.

Water is the main life constituent—

quarters to nine-tenths of plant, and from one-half to four-fifths of animal structure is water. Each needs ample supplies throughout life in order to attain to its full development. Plant life in particular needs water in large quantity and in a special form, while it cannot use it to advantage if in over-abundant quantity or in the wrong form.

Soil water consists in three different physical conditions or "forms," all of them water, chemically alike, but physically unlike and economically different. These are (1) hydrostatic or standing water; (2) hygroscopic or invisible water; (3) capillary or rising water:

(1) The standing water, the free running water of stream and pond, the water of the wells, which permeates and fills the soil at the lower levels and makes swamps and wet places, which rises and falls with rains and drought, the water of the water level or "water table":

(2) The invisible water, enveloping the several soil particles, as it does almost everything on the earth, the pen with which this word is written, the press which prints it, the paper which bears it, the hand which holds the page:

(3) The rising water, passing upward through the soil because of the pull of the capillary attraction of the minute pores or spaces between the soil particles, bathing the rootlets in a dilute solution of plant food, thus affording them both food and drink.

These several physical forms of water are chemically identical. They intergrade into each other, pass from one to the other and back again, under the influence of the sun which draws the water up and the rains which caused it to percolate downward again. The standing water is, speaking broadly, the source of the capillary water. If too



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They do the work and do it well.  
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near the surface it fills the soil pores, drives out the air and drowns out plant growth other than that of an aquatic character. Its main service in crop growth is as a reservoir for the available soil moisture, i. e., the capillary water.

The hygroscopic water is that moisture which adheres to the soil particles and clings there indefinitely, immovably, invisibly, inappreciable, unavailable, useless to plant life but ever present. Its amount is relatively small in soil in good moisture condition, and being of no avail for practical purposes may be dismissed without further consideration.

The capillary water, however, is the true soil moisture, that held within soil interstices from which plant roots feed. Its service is so important in plant growth that special consideration is given in this article to its nature and function.

Soil moisture in humid regions is a derivative of the rainfall. The effectiveness of this source of supply is conditioned on many factors, among which are the distribution of the rainfall, the nature of the soil on which it falls, the moisture needs of the crop and the method of handling the soil.

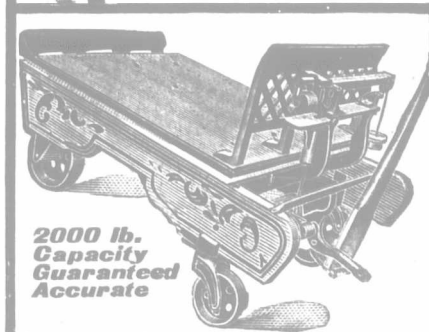
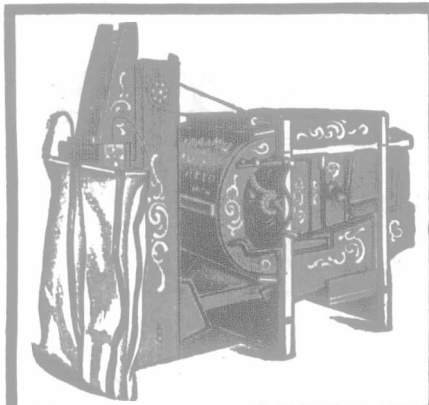
### EFFECTIVENESS OF CAPILLARY WATER.

The distribution of the rainfall is obviously beyond human control. An overdry or overwet season often entails disaster. Yet the moisture which crops use is not necessarily or usually derived from the rains which fall during the growing season. Much of it finds its origin in the ground waters fed by the rains which fell during the non-crop growing season, which sink into the soil depths, there to be held as in a reservoir from which more or less steady and gradual drafts are made during the growing season through the action of the capillarity. Hence it is that while the distribution of the rainfall is uncontrollable, the general meteorological characteristics of the locality being known, the procedure to be adopted in a given case may be adjusted thereunto. Thus, for instance, the system of soil cultivation in vogue in the great California valleys where wet and dry seasons alternate, and where marvellously deep retentive soils are stocked with moisture against the needs of the dry growing season, would not obtain in the East and vice versa.

The nature of the soil on which the rain falls is well understood to be a determining factor. A soil of compact texture, the particles of which are finely subdivided, holds water tenaciously, while one of, open texture, with relatively coarse particles, leaches readily. The one may be so impervious

(Continued on page 1151.)

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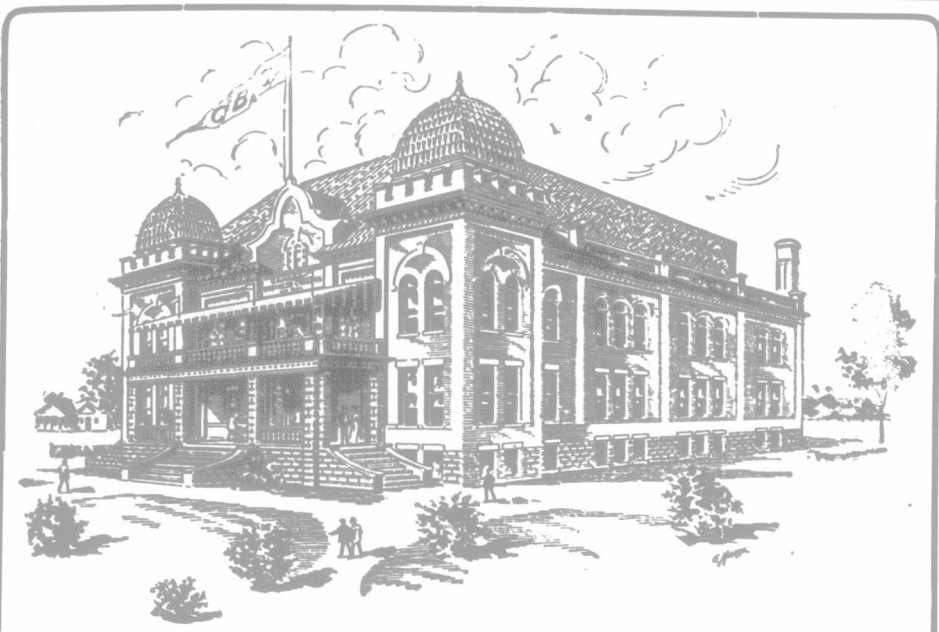
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**Alberta-Pacific Elevator Co. Ltd., Calgary, Alberta**



**THE NEW COLLEGE BUILDING FOR THE CANADA BUSINESS COLLEGE, CHATHAM, ONT.**

We have just received from Messrs. D. McLachlan & Co., the enterprising proprietors of the above popular school, this cut of their new college building, which they have just moved into. As will be seen, it is a magnificent structure, and will make a fitting home for the work of a school that has always stood for the highest and best in the line of commercial training.

This is the first building of the kind in Canada built and used exclusively for business college purposes. Through this last forward move this school now holds a unique position, not only among the business training schools of the Dominion, but in so far as we know, on the Continent. It therefore marks an era in the history of commercial training in this country, which is worthy of special mention, and is a fitting culmination in the work of an institution that for nearly a third of a century has always been in the vanguard in the introduction of the newest and best ideas in connection with high class commercial training. It is also the only business school in Canada which has been running for 30 years without change of management.

We wish the Proprietors, Messrs. D. McLachlan & Co., that great measure of success in their venture which is so forward a move in the cause of commercial education would entitle them to, and trust that they may long be spared to guide the destinies of a school that has already accomplished much in the interests of practical education.

There has been a strong desire for some years on the part of many of the ex-students to hold a re-union of the thousands of those who have attended the Institution during the past 30 years, and the proprietors had thought that the present would be a most fitting time to carry the idea into effect; but they were not able to get satisfactory arrangements with the Canadian Passenger Association to carry this into effect this year, and have decided to call it off until satisfactory arrangements can be made.

Every former student of the Institution is asked to communicate with the proprietors giving present address, so that in the event of making satisfactory arrangements as to time limit of tickets later on, they may be able to send each ex-student full particulars of the gathering when it is finally arranged for, together with a handsome cut of the new building. It is expected the re-union will take place in June or July, 1907.

## FIDDLER.

Having been the owner of Fiddler for almost two weeks, Mr. Hiram Proggins arrived somewhat abruptly at the conclusion that he had made a mistake. Either Fiddler was not the horse for him or he was not the man for Fiddler. From his perch on the grain-box, Mr. Proggins stared in dissatisfied contemplation at the stall where Fiddler's white nose was submerged in the manger. Yes, a mistake had been made.

Fiddler had known it all along. There were horses, plenty of them, that would have suited Hi Proggins. Some horses, you know, won't care a clover-head who owns them. Fiddler was not of this kind. He could make distinctions, and very fine ones, sometimes. The mere sight of Proggins aroused his suspicions, and when Fiddler first felt the touch of the new owner's hands on the reins he was assured, by that subtle instinct common to every good horse, that he and Mr. Proggins were not in accord and never could be.

In the first place, Proggins was glum and unsociable. Fiddler's chief traits were cheerfulness and sociability. Also, he had that which many scientific folks will tell you no animal possesses—a sense of humor. Judging him by a full-face view, you would never guess it. Fiddler had a long head—an abnormally long head—which gave to his frontal expression a solemn, almost lugubrious cast. Perhaps no horse ever carried about such a doleful face. It was grotesquely wobegone.

But view him from either side, get the effect of his parrot nose, not the sly humor of his drooping eyelids, the merry droolery lurking in the mouth corners, the mischievous twitching of his pendent upper lip, and you would find yourself grinning out of sheer sympathy with his jovial mood.

Mr. Proggins, however, did not grin. He never grinned. The face of Proggins was not fashioned for such purpose. Mainly it was whiskered—not with a long, benevolent beard, nor with an aristocratic Vandyke. It bristled with a coarse, scraggy, untractable, sandy-hued growth that suggested irritability of temper. As for the eyes of Proggins, no one might know what they expressed for they were deeply set under bushy brows and further hidden by an overgrown pair of smoked glasses. Those glasses puzzled Fiddler, as well they might, for they gave to the unattractive face of Proggins a weird, sinister expression.

This was unfortunate. Proggins was not a bad fellow. He was simply an unsuccessful inventor, whose disposition had been somewhat soured. Chiefly this was due to misdirected effort, for Proggins had inventive genius of no mean order. But he misused it. Was there anything along impossible or impractical lines, Proggins thought of it and straightway set himself the task of inventing it. He invented a mattress that would turn itself over once in ten days, provided that you wound up the weights and set the clockwork properly. The fact that the great American public did not yearn for a self-turning mattress embittered the mind of Proggins. A lawn-mower that could be converted

into a feed cutter, a hand-cultivator, a churn, or a coffee-grinder was another ingenious boon that the public declined to appreciate.

The two or three inventions which had proved of real value brought him meagre returns because manufacturers' agents had juggled the patent rights to that end. But always and endlessly, despite failure and reverses, were Proggins' best thoughts, most of his income and the greater part of his time devoted to the construction of a perpetual-motion machine, which seemed doomed to be perpetually motionless.

It was this unoriginal folly that had estranged kin and friends, that had caused Proggins to leave town and seek the seclusion of a ten-acre farm off the County House road. There, in unpainted, ramshackle buildings huddled among unpruned trees and surrounded by untilled fields, Proggins lived like a hermit, working at vain things, dreaming vain dreams, and cherishing resentment against a careless world.

About once a week, Proggins reluctantly tramped into the nearest town for supplies and material. With the purpose of making these trips still more infrequent, he decided to buy a horse. Unluckily for both, Fiddler chanced to be the animal which fate and an unsympathetic horse dealer picked out to share his lot.

When you have pulled a post-cart over a suburban mail route for some five years, you come to know a lot of folks, and a lot of folks come to know you. When you are watched for every day by several hundred persons, when you establish intimate relations with a whole neighborhood, then your world ceases to be mere drudgery. Fiddler had found it so. He liked to see them, the women and children, and sometime the men, standing at the gate watching for him. They seemed glad to have him stop, even though he left nothing more than the weekly paper or a patent-medicine almanac. They brought him things to eat—bunches of clover whose honey-laden tops were deliciously sweet red summer apples, and, on baking days, fresh crullers and ginger cookies. He liked his driver, too—a jolly chap who whistled and sang as Fiddler jogged along the highway.

Changes, however, are bound to come. The driver was promoted to the railway division, and the new postman had a horse his own. So Fiddler went to the horse-trader, and from there to the Proggins farm. Sadly did Fiddler miss his friends on the mail route. Here was only this glum-visaged man with bristling whiskers and queer-looking eyes. He neither looked nor acted friendly. But Fiddler was bound to make the best of things. In a dozen ways he tried to be sociable. He had a trick of upsetting the grain measure by an unexpected lift of his long nose when he was being fed. The postman had enjoyed it heartily, and every meal-time they made quite a game of it. But Proggins rapped him sharply with a stick he carried, and refused to enter into the spirit of the joke. He wanted none of Fiddler's good natured nosings, and plainly showed it.

It was clear, too, that he was afraid of the horse, approaching head or heels

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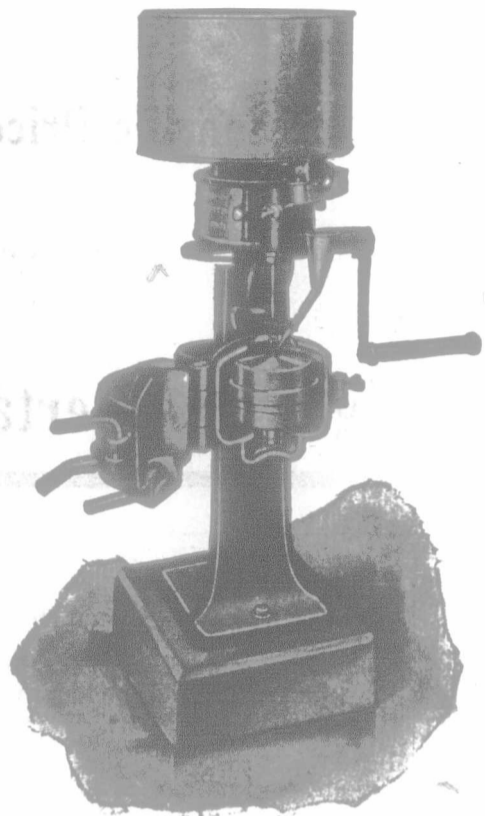
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with much caution. Fiddler, who had never kicked or used his teeth on anyone in all his life, came to enjoy lifting a threatening hoof or laying back his ears, just for the fun of seeing Mr. Proggins dance out of his way.

What was the matter with the man, anyway? Fiddler could not make out. Then there remained the mystery of those smoked glasses. So Fiddler got into the habit of watching his master closely as long as he could keep Proggins within range of his eyes. His were big, round eyes, too, deep and full and strikingly human in their expression. Fiddler could stare out of them in such a questioning way that one was almost moved to ask, "Well, old fellow, what's up; what do you want to say?"

Hi Proggins was not so moved. To him this stare of Fiddler's was intensely disconcerting. Whenever he was at work about the barn he might be certain that those big, round eyes were following him. Fiddler would even crane his neck to watch Proggins shake out the bedding or when he was fastening the traces behind him. This Mr. Proggins interpreted as an evidence that the horse was only waiting for a chance to play him some evil prank. Naturally he grew to dislike Fiddler as well as to fear him.

Once he had Fiddler safely harnessed and had climbed up on the wagon out of range of his blindered eyes, Mr. Proggins's mind was at peace. Sitting humped over on the seat, his thoughts dwelling on some new obstacle presented by the intricate contrivance in his workshop, Proggins would allow Fiddler to jog along wholly unguided for half an hour at a time.

Then it was that Fiddler tasted happiness. Hungry for the sight of horses and men, he improved each trip to town by giving full play to his sociable impulses. He whinnied friendly greetings to every passing team, and often left the road altogether just to rob noses with a pastured horse. Could he overtake a carriage, he would follow it doggedly, if possible with nose on the seat-back. In this way he frightened several old ladies, who roused the absent-minded Proggins from his day dreams to scold him soundly for his impertinence.

Arrived in town, it was Fiddler's delight to stop before the court house or town hall, or wherever was the biggest

crowd, much to the disgust of Proggins, who wished to come in contact with as few persons as possible.

But Fiddler was bent on being sociable when opportunity offered. Twice he forced his way into funeral processions, where he was not at all wanted. Was there a crowd about a travelling faker's wagon in the market square, Fiddler, if not closely watched, would push into the thickest of it. On one occasion he followed a stream of carriages into the fair grounds, and Proggins was brought to his senses by an indignant ticket-collector who charged him with being a beat.

It was always Proggins who was blamed for intrusiveness. No one ever seemed to suspect Fiddler. Even Proggins himself, unwilling to credit the horse with anything more than brute instincts, was not suspicious. He was puzzled, however, when one Sunday, after starting for town under the impression that it was Saturday, he woke from a brown study to find himself in the carriage shed of the Calvary Baptist Church just as the morning service was concluding. Proggins, who particularly disapproved of churches and church-going, had the humiliation of being compelled to drive home in the midst of the Sunday procession. Some say Fiddler wore a broad grin, but probably it was nothing more than his normal expression.

From that day, however, Fiddler was no longer trusted to find his way into town and back. At cost of much mental effort Proggins did the guiding and avoided places where he had no wish to go. Fiddler had to submit, although he eyed longingly every group and gathering.

As Proggins's dislike for the horse deepened, he began to dread the three visits which he must make every day to Fiddler's stall with feed and water. The persistence with which he was followed about by the searching stare of injury disturbed and upset his mind. But Proggins was not an inventor for nothing. Resolutely suspending his tinkering on the perpetual-motion machine, for nearly a week he measured and hammered and worked about the barn. Fiddler watched and wondered, but he could make nothing of it.

Then one morning Proggins did not come to the barn at all. Yet the water-

bucket in the manger was mysteriously filled, the usual two quarts of grain miraculously appeared without a sign of hands, and a big forkful of hay was noiselessly pitched down from the loft. At noon and again at night the phenomenon was repeated, and without sight or sound of Proggins. Fiddler stared and listened, but solve the puzzle he could not.

Still, considering the genius of Proggins, the thing was no great marvel. He had simply built a series of troughs from the pump to the water-bucket, hoisted the grain-box into the loft, and dropped a chute with a string-regulated slide into the manger, and contrived an automatic hay fork. This last, it must be admitted, was really a clever device. The whole arrangement worked perfectly.

The result was that Fiddler's isolation was complete. The lonely monotony of stall-standing was not unbroken even by the brief visits of the unsociable Proggins. It was the most absolute solitude which Fiddler had ever experienced. The farm was a lonesome place at best, and the silence that hung about it like a pall was almost unbroken. In barn-yard or pasture were no lowing cows, not a hen cackled cheerfully; there was not even a dog or cat about the place. The only sound to be heard was the muffled hammering of Proggins in his distant workshop.

And Fiddler didn't like it. He soon became tired of being fed and watered by machinery. He wanted to see someone, even if it were only Proggins. So he revolted. He backed against the barn door until the rusty latch gave way. Then he walked out into the barn-yard and began to hunt company.

Thus it was that Proggins, conscious of some unusual presence, looked up from his work to see the solemn face of Fiddler framed in the open window, and those big, curious eyes fixed upon him with disconcerting stare.

"Get out of here, you beast!" Proggins fairly shrieked. "Get out, you long-faced son of Satan!" and he waved a hammer threateningly. Arming himself with a long pole, he undertook to drive Fiddler back into the stable. But the horse was enjoying his liberty too well to go tamely back into the hateful stall. A merry chase they had of it, through the neglected orchard, about the weed-grown garden, into the road, and back again.

Then Proggins had an inspiration. He would drive Fiddler down to the highway and lose him. That would end the business, would rid him of this troublesome animal. As for Fiddler, he seemed glad enough to go, and Proggins saw him disappear over a hill with a sense of thankfulness. Two hours later, however, a boy from a neighboring farm led Fiddler back in triumph and demanded a dollar. Proggins grumbled, but paid the reward and put a new latch on the barn door.

This was the beginning of a game which progressed from day to day. Fiddler's part was to find the weak spots in the old barn and to go through them. Proggins undertook to repair the breaks and to thwart new attempts. It was a spirited contest.

At first, Proggins tried to gain an advantage by putting a halter on Fiddler, and tying him to a stout stanchion. Fiddler promptly gnawed through the halter rope and declined to allow a repetition of the handicap. His outbreaks were bold and ingenious. Once he forced the door of the cow shed. Another time he backed through the side of the barn, ripping off two loosened boards. And after each escape he went straight to the window of the workshop, as if to taunt the defeated Proggins and challenge him to another prance through the orchard.

Having endured this sort of thing for several days, Proggins became desperate. He had reached what he believed to be a critical stage in his life-work. At any moment he expected to see the various wheels of his machine start into endless motion, and he was working with feverish enthusiasm. But apply himself he could not with that long, white, solemn face leering at intervals through his window and that disturbing stare following his every movement.

"You've done it again, have you?" he growled, as Fiddler made his last

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appearance. "Want to drive me crazy, don't you, you four-legged old Slippery Jack? But I'll fix you. I'll fix you this time." Here Mr. Proggins shook a futile fist, while every wiry hair of his sandy whiskers bristled with anger. "I'll fasten you up now, you blamed old white hoodoo, so you can't get out. I'll do it if I have to build the whole barn over with walls a foot thick."

With this threat, Mr. Proggins impetuously grabbed his hat and started on foot for the nearest sawmill to order a load of lumber.

Reproachfully, Fiddler watched the bent form of Proggins dash down towards the County House road. Then he stuck his long head into the open door of the work-shop and sniffed curiously about. Next to the window was a carpenter's bench littered with tools and shavings and odd pieces of machinery. On the other side of the door was a hand forge, a coffee-pot, and a frying-pan resting on the gray coals.

The rest of the room was largely occupied by a huge, flimsy-looking affair that suggested the combination of a grandfather's clock with a threshing machine. It had wheels and weights and arms and levers and ropes and springs and pulleys. Such a contraption Fiddler had never seen before, and it attracted him. Cautiously he approached the thing, stepping carefully over the creaking floor boards, his neck stretched out, ears pricked forward, nostrils expanding and contracting, and pendent upper lip working tentatively.

All might have ended well and no mischief done had not Fiddler planted one of his hind feet on a saw. The thin steel snapped with a sharp report. Fiddler snorted in alarm and jerked upwards his long nose, striking a projecting lever. There ensued a whirring of wheels, a creaking of pulleys, a confused buzz of cogs. The thing was alive, then? It was some monstrous insect!

Fiddler reared in fright. His head struck the ceiling, and down he came with a grand crash. The machine toppled towards him, and the next that he

knew he was hopelessly mixed up in the thing. So he went plunging madly about, his legs twined and tangled with ropes and springs, his iron-shod hoofs smashing and bending parts at every jump.

This is how it really happened. Mr. Proggins's theory that Fiddler deliberately attacked the machine with malicious intent is wholly absurd. Yet he thoroughly believed it at the time. Perhaps he does still. It is true that when he returned at the end of half an hour having determined to make Fiddler haul the lumber for his own undoing, he found the old white horse dancing frantically on the ruin of the wrecked machine.

"I've had a mighty lot of hard luck in my day," said Proggins, "but I guess that was about the hardest knock I ever got. I was more scared than mad, though I'm not superstitious; but if ever a horse was possessed of the devil it was that old Fiddler. I don't want to see anything like it again. Heard folks tell about their blood running cold, haven't you? Well, mine did when I saw the antics of that four-legged demon. And that grin of his! His jaws were shut tight, but his lips were drawn up until you could see his teeth way back to his ears.

"But his eyes were the worst. They just blazed with deviltry. He had that coffin-shaped head of his up in the air, and he was switching his old white tail and rampaging about that shop as though he meant to make match-wood of the whole business—which he come pretty near doing.

"I couldn't swear and I couldn't cry, though I wanted to do both at once. I just stood there with my eyes sticking out and my hair standing until, all of a sudden, he looks up and sees me. Then he charged through the door at me like a setter going after a rabbit. I yelled and made a dive for the old smoke-house. As I jumped in I slammed the door after me and climbed up on the top beams.

"Guess I must have roosted there nearly three hours before I dared to

come down. I heard Fiddler stamping in his stall as he used to when he wanted his feed. I tip-toed out until I could get hold of the grain-box string, and I pulled that two or three times. The grain quieted him, and while he was eating I slipped around and shut the barn door, bracing it with half a dozen fence rails. Then I walked over and took the night train to the city, where I hunted up a man who makes a business of training vicious horses. And what do you think? That contrary old beast whinnied as if he was glad to see us, and followed the man off as meekly as a mooley cow."

Curiously enough, the smashing of the perpetual-motion machine proved to be the making of Proggins. Quite too discouraged to begin a new one, he abandoned the whole scheme and out of sheer irony applied his genius to the fashioning of a patent stopper for tomato-ketchup bottles. In less than six months he had more money than he knew what to do with.

Nor did Fiddler pass into oblivion. Far from it. Some time or other you will probably arrive at one of the railroad terminals in Jersey City. Should you chance to hit upon the right one, you may see, moving with leisurely steps and solemn dignity through the inbound and outgoing throngs, an old white horse with an abnormally long head.

It will be Fiddler. His business is to haul baggage-vans back and forth along the platforms. Surely, you will say, he cannot lack for society. Nor does he. Every hour of the day folks are shunted in from the far corners of the world to meet him. Men from all lands brush his flanks and carry away on their coat sleeves white hairs from his sleek quarters.

And Fiddler appears to enjoy it all immensely. On his solemn old white face sits contentment. In the midst of train-shed riot he is thoroughly at home. You may see him stand serene and tranquil as a big six-driver camel-back dragging the Chicago Limited slows down with a screech of brake shoes from its

mile-a-minute run, and comes to a hard-breathing stop not ten inches from his nose.

"Hello, old Whitey!" the engineer will sing out, leaning from his cab to smooth Fiddler's ears. "We're back again, you see."

Perhaps no mere traveller was ever more surprised at meeting Fiddler on the station platform than the occupant of a Pullman section who alighted one day from the Washington express. The colored porter who followed him with his hand-baggage seemed to think him a personage, but you or I would have needed but one glance at those smoked glasses and sandy whiskers before exclaiming, "Proggins."

The first sight of Fiddler made him gasp; and no wonder, for as he stepped from the train he found himself confronted with that unforgettable white face. Under his whiskers Proggins turned pale, and had it not been for perilling the deep respect which his dollar tip had evoked from the porter, he would have climbed back into the car and shut the door. Edging around Fiddler and well to the rear, Proggins addressed the man in charge of the baggage-van.

"Nice horse you have there, eh?" "Yes, sir; he's all right, old Fiddle is. And knowin'— Say, he knows more'n lots of people, he does."

"Yes," assented Proggins, "I should judge so."

As he moved down the platform toward the ferry boat, Mr. Hiram Proggins turned to take a last look at the old horse. Fiddler, too, had swung about and presented his profile. It wore a sardonic grin. And Proggins, who had learned how, grinned responsively. —SEWELL FORD, in *Harper's*.

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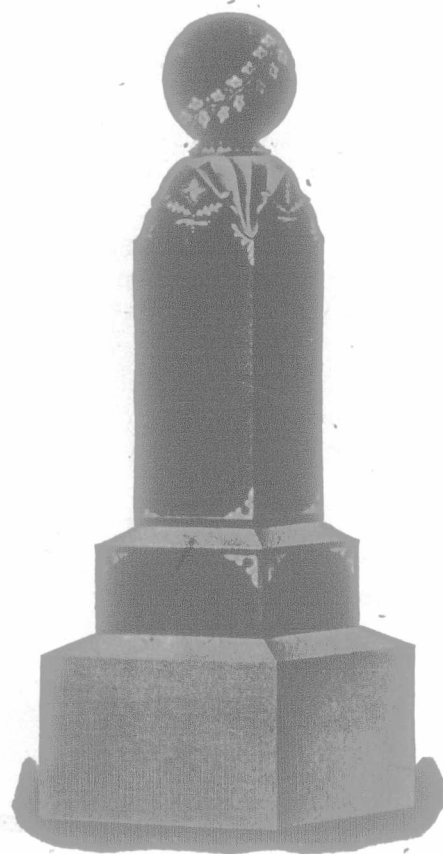
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### Questions and Answers

#### RHUBARB CULTURE.

Please let me know through your paper how to stop rhubarb from exhausting itself by going to seed.

A. O. R.

Ans.—It is possible that the plant has become crowded and root bound, if so, thin it out by dividing the plant up into four or more plants, or transfer a piece of the root bulb to a new setting. Leave the new plant to grow the first year giving it good cultivation and plenty of manure. If the plant is not crowded cut back the seed stems and supply manure. Rhubarb to do well needs a rich, fairly moist soil, and a slightly shaded location, and the plot is the better for having the plants divided every four or five years. Never let it seed.

#### HOMESTEAD CULTIVATION.

A. and B. are homesteaders with their homesteads joining. They built a shanty 12x20 across the line, both live in the one shack. They built granaries and farm about 100 acres on each homestead. They have lived on them eight months each year. Can they get their patents or can they be cancelled?

Alta.

A. B.

Ans.—There should be no difficulty in obtaining patents on these homesteads as the duties with regard to residence and cultivation have been performed

#### THOSE CLYDESDALE FILLIES.

Horse breeders will do well to pin the date of Mr. Prouse's sale of Clydesdale fillies in their hats as this is going to be one of the best opportunities ever offered to purchase heavy draft bone and blood. We have not yet received a detailed record of the breeding of this consignment but Mr. Prouse writes that they are closely related to the lot he sold last April in the city of Woodstock for the average of \$284. As this consignment was picked up in the same districts their sires are such noted horses as Handsome Prince, Clan Chattan, the sire of last year's champion, Royal Chattan, at the H. and A. S. show; Marmion, sire of Mr. Bryce's celebrated Cawdor cup filly, Rosodora, Pride of Blacon, a highly esteemed sire, Sir Hugo, a sire of many an imported one; Drumflower, Fashion Plate, Baron Robgill, who was to be seen last winter in Galbraith's stables at Brandon, and numerous others. On the dam's sides some noted horses are prominent in Mr. Prouse's importations. Such as Top Gallant, Sir Everard, Gay Everard, Clan Chattan, King of the Roses, Montrave Mac, Prince of Albion, Sir James, etc. Further notice will be given next week but the main thing is to remember that some good chances are offered and to get ready to take them.

#### A HOLDING OF THE PLUMB LINE.

At the closing exercises of Cornell University N. Y. President Jacob Gould Schurman, a Canadian by the way, who has climbed to the highest point of distinction in the educational world, delivered an address which for sound common sense, and beauty of expression stands out with particular distinction. After a short introductory he proceeded as follows:

"What is the blight and malady of our time? Is it not the mean and sordid conception of human life which every where prevails? Among all classes and conditions of people do you not find a vitally active if generally unexpressed belief that the life of human beings like the brute creatures about them consists in the enjoyment of material things which perish in the using? To get and to have is the motto not only of the market, but of the altar and the hearth. Because consumption is a function of our bodily organism, and objects to be consumed are nowadays produced on a scale of unparalleled complexity and magnitude, and the energy of the nations is pouring itself into production, we are coming to measure man—man with his heart and mind and soul—in terms of mere acquisition and possession. This practical materialization has been facilitated by the decline of dogmatic theology and the attendant (if temporary) eclipse of religion and mortality. A waning Christianity and a waxing Mammonism are the twin spectres of our age.

Men are born to work and to render service. For a healthy man there is no joy like the joy of accomplishment. Hard work never hurt any sound man. Worry kills; intemperance kills; licentiousness kills; but with the accompaniment of food, sleep, air and sunshine work will never hurt any of you. And without it you can never reach the full stature of manhood; for with the disuse of any power it atrophies and manhood is maimed and shrunken. The call to earn a livelihood is twofold. If you don't you become a parasite on the community and you stunt your own nature.

The vice of the age is that men want wealth without undergoing that toil by which alone wealth is created. Now, gifts apart, there is only one way in which you can get money or money's worth without working for it; and that is by stealing. And a generation which has set its heart on wealth as the chief good in life and is insatiate in its desire of wealth has not scrupled under the cloak of specious names to procure it by "graft" and robbery. The very poor have little chance to steal, though they may scamp their work. But among the rich and well-to-do business and professional classes "grafting" has been so common that the idea of commercialism has become a byword and a reproach. Financiers, capitalists, corporations may be the most conspicuous

sinners; but equally guilty is the merchant who cheats his customers, or the lawyer who shows his client how to circumvent the laws, or the scholar who glorifies his patron's success in business irrespective of the methods by which that success was achieved, or the preacher who transfigures the ruthless oppressor and the robber of six days into the exemplary Christian of the seventh. We are dealing with the virus of a universal infection. The whole nation needs a new baptism of the old virtue of honesty. The love of money and the reckless pursuit of it is undermining the national character. But the nation, thank God, is beginning to perceive the fatal danger. The reaction caused by recent revelations testifies to a moral awakening. At heart the nation is still sound, though its moral sense has been too long hypnotized by material prosperity. Without honesty and fair dealing no society can hold together. Dishonesty is the parent of anarchy. If I have already commended industry to you I now preach integrity. An honest man's the noblest work of God.

SANE AND JUST IDEAS.

And this brings me to a third point. Besides the old-fashioned virtues of industry and integrity, it is too much to expect the college graduates of the United States to carry into their several homes sane and just ideas of the end and meaning of human life? Who else shall save us from the soul-benumbing Mammonism which now threatens to engulf us? Man is a spirit who uses a bodily organism. And when provision is made for bodily wants the concerns of the spirit are of vastly more importance than material possessions.

If we have sane and right views of life and a just perception of the relative values of the things that are desirable; if we eschew ignorance and prejudice and live in the light of intelligence; if we loyally do our day's work and contribute our best service to the society of which we are organic members; if we are honest and trustworthy and regardful of the rights and sensitive to the claim of others; if, I say, we cultivate and realize in ourselves these excellences of mind and heart which have to do primarily with insight and character and service we shall find that the economic problems centering in labor and distribution take on a new aspect and fall into new relations with other and more important ends of life, while they remain forever insoluble either by the way of individual competition uncontrolled by the social conscience or by the way of socialism uninspired by the initiative of individual competition. The one solvent of all these evils is justice—absolute justice.

MERE LAW INADEQUATE.

Property is the creature of law, and law is made by the majority of voters. The problem is to combine the splendid productivity of the actual system with a social serviceableness by which its inequalities shall be justified. Income taxes and death duties are the only methods which justice and expediency have yet devised as legal provisions. But mere law is bound to prove inadequate. The only satisfactory adjustment of the problem of vast fortunes in a democracy is the recognition on the part of their possessors that they hold their wealth as trustees for the benefit of the community and the administration of their fortunes to that end in their own lifetime. But even then the tone of society would be bad were it not also recognized, not only by the millionaires, but by all classes of people, that material possessions are among the least worthy objects which a moral and rational being like man can set before him as the goal of his endeavor. And so without forgetting the lowest I come back to the highest things in life—to culture and knowledge, to industry, honesty, fidelity and justice, to the noble qualities of head and heart which make individuals worthy of admiration and reverence and through them mould and elevate society after the pattern of the commonwealth of God. Who says these things are intangible ideas? They are the very essence of our lives. And though we never fully attain them we must always keep them before us. The mariner steers his ship over the stormy waters by the light of the stars."

## Write for our Midsummer Sale Catalogue

That is if you have not already received a copy. It is filled from cover to cover with bargains, every one of which represents a material saving.

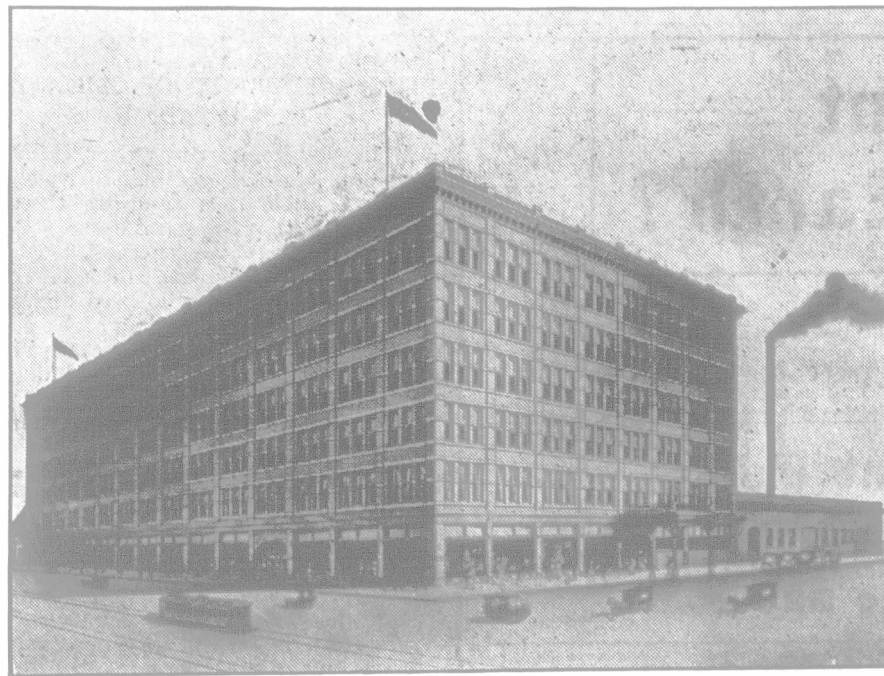
**WRITE AT ONCE**, for there is no time to lose. The sale commenced July 3rd, and will continue until August 15th. When you receive a copy of the catalogue, don't delay your order, for we cannot promise to fill orders for goods when once they are sold out. The reason is this: Orders were placed for many of the goods months ago, to be made up during the factories' slack season. In order to keep the factories busy the manufacturers gave us special prices. And then again, since we placed our orders there have been sharp advances in almost every line of goods, and we cannot sell goods that cost us more money for the same price, for during our Midsummer sale we have sacrificed a good portion of our ordinary reasonable profits.

The lines that we have include women's and misses' petticoats and bathing suits; description; men's and boys' hats; dress goods, silk, and women's gloves, hosiery neckwear; lace and em- and children's headwear; notions; linens and cottons; pictures and wall-paper; footwear, baby carriages, ware, china, books and

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By all means have a copy of the special grocery list; even if you don't buy from us, it will be a good reference to show you what you ought to pay for goods.

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### SOME FEATURES OF SOILS.

Bulletin 123 of the Vermont Station discusses at some length soils and their relation to different agencies. In part it says:

"Soils vary greatly as to chemical composition, and naturally so. The product of disintegrated rock and decayed vegetable matter, they partake of the nature of the materials from which they are formed, mineralogically as well as chemically. Slate and limestone, for instance are highly unlike, and soils derived therefrom are similarly unlike. Then, too, the natural processes of rock disintegration, the uneven weathering of rocks of varying types, the mechanical and chemical action of water, eroding here, dissolving there, have made gravel pits and sand banks, clay deposits and ox bows, have denuded the mountain slopes and enriched the valleys, have rearranged, sifted and sorted the various materials once distributed with some uniformity, but now in many cases concentrated. Moreover, soils have been profoundly affected and modified by glacial action, enriched here, impoverished there. Soils, then are chemically unlike because of their varied origins and processes of formation. None of them contain the essential elements of plant food in the proportions in which plants use them. A large part of the soil performs no chemical function but is simply a

mechanical support and anchorage, a theatre for biological activities, a reservoir for water and for heat. It is the relative shortage of nitrogen, phosphoric acid, potash and lime in the soil, and their relatively large usage by plants which gives them their prominence. It does not follow, however, that soils containing equal amounts of these constituents, even though all conditions are similar, would possess equivalent crop producing powers. Their ultimate origin, whether from rocks which were dense and hard, or from those which were easily disintegrated, would be a factor in the case. The one soil would yield up its plant food reluctantly, the other readily; yet chemical analysis would indicate essentially equivalent crop producing powers.

#### PHYSICAL CHARACTERISTICS

Soils contain not only nitrogen, phosphoric acid and potash in sundry combinations, but also air, water and heat. The proper aeration of the soil, its adequate moisture content, its warmth, are as essential to plant growth as is fertility, using the word in the narrow sense. They contribute to its development in that they are the main agencies at work at the present time in the preparation of available plant food in the soil. This can only be serviceable in plant growth if it is in solution. The relationship of soil air

in opening up the soil and rendering it permeable to water, the relationship of water to solution, and the relationship of warmth to ease of solution are all so well known as to need no remark. A dense and compact soil, being but slowly penetrated by water, yields its plant food but slowly thereunto and successful growth does not occur. Per contra, from a too open and porous soil the water rapidly removes such plant food as is soluble and the crop starves. The ills which follow in the train of over supplies or under supplies of water are well appreciated, as are also those which ensue from a late spring (too little warmth) or a prolonged drought (too much warmth with too little water.)

#### BIOLOGICAL CONTENT

The countless myriads of micro-organisms which live in the soil, though until recently unknown, and their functions but partially understood, are as important factors in soil fertility as are its chemical constituents or its physical characteristics. The modern concept of the soil is that it is a living entity rather than a dead mass; that it is a workshop rather than a storehouse, or, rather, a workshop in a storehouse wherein the tiny plants, too small to be seen save with the aid of a microscope, are actively at work transforming raw materials into available plant food, reducing the relatively

complex dead animal and vegetable matter, manure, stubble, roots, humus leaf mold, etc., into simple forms suited for plant nutrition.

These hosts of helpers are as truly plants as are the corn and clover which because of their busy activities, are enabled to grow. They need air and water and warmth as do those of a larger growth. If either of these are lacking their growth is hindered or ceases. Since their function, viewed from the standpoint of soil management, is the development of available plant food from the soil, and since they are important though not the sole agencies to that end, it follows that such soil conditions as favor their growth enhance, and such as retard their multiplication lessens the crop producing power of the soil. These favoring and retarding conditions are not of a chemical nature, but physical in their character; from which it follows that bags of "phosphate" will not prove a cure-all. Such a procedure simply substitutes added plant food for that which might be developed by natural means from stores already in the soil. He who prepares a good seed bed, who lightens, aerates and pulverizes the soil, promotes bacterial growth and thus develops actual from potential plant food.

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### THE INFLUENCE OF CLIMATE ON SPEED.

The well-known turf writer, Hamilton Busbey, discusses the high altitude, dry climate theory as favoring the best development of the speed horse. Reference is made to the successful experiment made by the late Marcus Daly, of Bitter Root Farm, who bred high class trotters so successfully in a high and dry atmosphere with pure mountain spring water, and the succulent and delicate grasses of the Mountain uplands. Of course, this sounds well, but when we remember that Marcus Daly purchased the best brood mares that money could buy and mated them with the best bred extreme speed stallions, the success of his breeding experiment may more properly be attributed to the mingling of the best blood rather than climate or Montana grass. There is another consideration of moment in view of the fact that you can not race horses in the dry atmosphere of the Rocky Mountain air. Horses to be valuable must race in the centers of population, in a variety of climates. And a breeder who must market his products in the racing centers is interested very vitally in knowing how these airy mountain bred horses will stand the radical change in climate in the denser and damper atmospheres. When we reflect that the champion trotting stallion of the world was born and educated on the yellow sand dunes of the low level and muddy Maumee river of Ohio; and the champion pacer of the world was bred on the flat, low level soil of Indiana, and that the champion trotting gelding of the world was

bred in the ocean salted low level land of New York, and that Kentucky and Tennessee hold their own in comparison with all the higher altitude products, we are disposed to doubt that the highest vital energy in the horse can be produced in the rarest and driest climate. Mr. Busbey is not a mountain prophet. He was bred and reared by the salted sea, in an atmosphere saturated with dampness. Hence we agree with his conclusion, which we quote, "Great race horses have been bred in the moist climate of England, at tidewater levels in New York, New Jersey and Virginia, and in the meadows of Kentucky and Tennessee. There is no one region that can claim a monopoly of vitality producing elements and the conclusion is irresistible that development depends upon the health of the mother and care in rearing the foal."

It is a safe proposition that climate has about the same influence on horse kind as human kind; and while it would seem the most probable that great literary efforts would be best produced on dizzy mountain tops and in the presence of grand nature, such is not the record. For illustration, John Bunyan wrote his best work "Pilgrims Progress" in jail, Cervantes wrote his greatest novel "Don Quixote" in jail. The immortal Tasso wrote his greatest "Jerusalem Delivered" in the damp jail air. Defoe planned that delightful story, "Robinson Crusoe" in enforced confinement and last but not least, Oscar Wilde wrote his "De Profundis" in jail.

No, it is not dry air or high altitude that make great men or great horses, it is blood.—*American Sportsman.*

### THE SELECTION OF SHOW SHEEP.

This is a matter of the greatest importance, which cannot be hurriedly done. It requires many careful inspections, and ought to be done by gradually reducing the first selection by careful drafting down to the required number. So far as regards the old ram or two-shear sheep, the selection is naturally limited, but at no age can any breed be better or more typically represented. In these classes, the majority of champion animals are found, and, further, at no other show-yard age can the visitor or export buyer secure a better or more complete idea of what a ram of the breed should be than when such exhibits are mature sheep.

Then selection of yearling sheep both male and female, requires more care and time, because in most flocks the number from which selection can be made is larger, and maturity and full development have not been reached. The first object to be aimed at is to select only sheep well made, symmetrical, and properly formed. Then come breed type and character—masculinity in the male and sweetness in the female. Wool, too, is a most important point, and no animal should be selected that has not a fleece of even and uniform character. No animal, male or female, should be taken for the show-yard lot that cannot walk well and is not able to carry itself in proper form.

In the case of ewes, it is essential that the select lot should be uniform in color etc., that will enable thoroughly and well-matured pens to be finally selected for exhibition. With the selection of lambs, of both sexes, the shepherd finds a task of very great difficulty. This arises very much from the fact that with the very rapid growth of the lambs, it is almost impossible to ascertain with any degree of certainty how the individual lamb or lambs will grow and develop. For this reason, it is necessary to have a considerably larger number in what is generally termed the show-yard lot. It is often drawn upon to a greater extent than many anticipate, on account of the number of lambs that fail to keep up the touch and handle under the great stress of show-yard work and constant and continuous pushing forward.

In general terms it may be said that the ruling conditions here are the same as in the selection of the yearling sheep except that in this age greater notice should be given to the pedigree, because if the individual characteristics of the parents are known this is a good indication in most instances of what the lamb may be expected to develop into. One of the truest tests of any flock is uniformity of types character, flock likeness and true breed characteristics run-

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ning all through the entire exhibit from the flock. A competitor should always make his selection so that the whole of his entries, no matter the age or sex, could, with hope of success, compete for a prize for the best collection of the breed, were such a prize offered. Nothing is so detrimental to the reputation of any flock, from the stud point of view, as to find it represented by different types of the same breed.

**PREPARATION.**

Many times have I been asked, "When should we begin to prepare our sheep for show?" Almost as soon as the lamb is born. Show-yard preparation is unfortunately blamed for many losses it should be innocent of, and the reason is that in many cases the commencement of this work is put off until the last minute, with the result that the only way in which the proper condition, according to the prevailing idea, for the show-yard can be secured is by inordinate forcing. If, therefore, it is intended for exhibit, let the preparation be commenced as early as possible, and then the necessary condition can be gradually obtained, with the result that little if any loss will be experienced.

For lambs, there is but little time, and hence the risk in their preparation is much greater than among older sheep. With an early selection, gradually reduced as time goes on, and the whole lot kept going ahead, those not required for the show-yard will make full value in the market. Exercise is a very important point in successful preparation. Neglect of this has been the reason for many heavy losses, most of which were quite preventable. The successful exhibitor of horses or bulls, or the successful exhibitor of thoroughbred stock, all know this, but not so, unfortunately, with many a sheep exhibitor. Why this is so is inconceivable, for time and again so many prizes have been lost through neglect of this point, that it might be expected that even the novice would not fail to note it.

One of the most successful shepherds, some twenty years ago, has, time after time, said, "Eh, sir, 'tis not always the best sheep that wins, but in ninety-nine cases out of a hundred it goes to the sheep that is best trained and exhibited."

Let all who aspire to show-yard honors in our sheep classes bear this in mind. The training a ram, ewe or lamb to walk properly, either in the halter or without it, takes time, but it is time well spent, because it adds largely to the chances of success in the show ring. In its natural state, the sheep does not stay in one spot, but moves continuously whilst getting its food, and hence the nearer one can keep the animal to its natural condition, the greater are the chances of success.

Coloring is, fortunately, a practice on the decline, and the sooner it dies out the better. It adds somewhat to the appearance if applied in moderation, but when applied as it still is amongst the Down sheep wools or the Lincolns, in instances it is thoroughly objectionable, and at the same time most detrimental to the best interests of the breed, preventing visitors from examining either the sheep or its fleece.

**SHEEPMAN.**

**SIR CHARLES RUSSELL'S HAND.**

Sir Charles Russell when he was practicing at the bar was a noted cross-examiner, and it was a shrewd witness that could circumvent him. On one occasion at least, however, the laugh was turned on him by an innocently intended answer. He was cross-examining a witness in regard to certain hoof prints left by a horse in a sandy soil. "How large were the prints?" asked the learned counsel. "Were they as large as my hand?" holding up his hand for the witness to see. "Oh, no," said the witness honestly, "it was just an ordinary hoof." The examination was temporarily suspended till order could be secured in the court room.—*Law Notes.*

"I heard the old farmer tell his early crop of summer boarders that he would give them a taste of spring chicken for dinner to-morrow," said the rooster. "Looks to me like he was laying for you."

"Well, it's about time," replied the hen who was beginning to carry weight for age; "I've been laying for him these many years."

(Continued from page 1144)

that water runs off of rather than into it, the other so porous that the drainage is almost complete. Many gradations between these extremes exist. While the dense clays and drifting sands and soils closely allied thereto do not lend themselves readily to treatment, the more intermediate soils may be bettered as to their moisture relations. Soils of a clay type may be so handled as to render them more open and porous, to separate the too closely agglutinated soil particles, to gather considerable numbers of them into crumbs or granules. Liming does this, improving texture, cementing soil particles into masses, opening up and aerating the soil. The use of barnyard manure, the plowing under of green manures are also advisable, though less effective.

Oddly enough a similar treatment of sandy soil works advantageously, since liming tends to lessen the rapidity of percolation of water to lower levels, while the liberal use of manure introduces material of a highly absorptive and retentive character. In each case the ultimate result is the enhancement of the power of the soil to conserve soil moisture for plant uses.

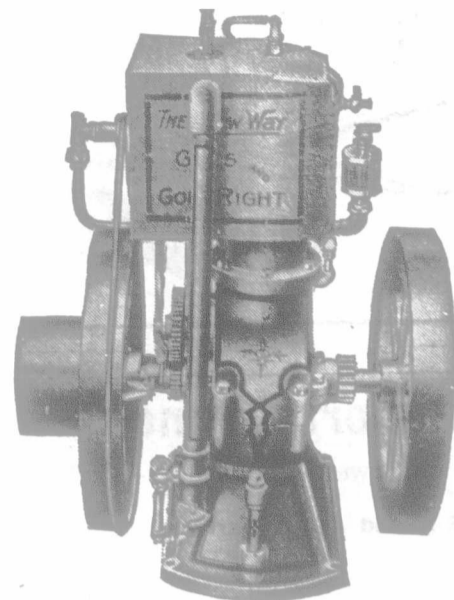
The usage of water by plant growth is tremendous. The amount seems incredible to those not well informed. From 200 to 600 times the weight of the dry matter of the crop is pumped up by the roots into the circulation of the plant and passes off into the air from the leaves, the amounts varying with the nature of the crop and averaging not far from 300 times the dry weight. This means that a ton of hay for instance has used during growth somewhere in the vicinity of 300 tons of soil moisture, that a dry corn stalk weighing a pound has during its four months of growth pumped out of an apparently dry soil and vaporized from the surface of its leaves approximately 300 pounds of water. Large crops of hay, of corn or of potatoes draw several millions of pounds of water from an acre. The variation in the usage of water by the sundry crops is due largely to differences in the character and extent of their root and leaf areas, the inlet and outlet respectively of the moisture. Broad leaved plants naturally are more prodigal in their expenditure of water than are narrow leaved crops. Shallow rooting plants are apt to use moisture more rapidly than do those whose roots penetrate the soil deeper, and it is obvious that they have a less ready access to it. Hence it is that they suffer sooner and more severely in drought than do deep rooting crops. Grasses and cereals are less avid users of soil moisture than are corn, clover, potatoes or most vegetables.

Another factor in this matter of moisture usage is the length of time during which the crop grows. A slow maturing crop can succeed on a soil moisture content which would fail to support one which grows more rapidly. Again, the use to which the crop is put bears relation to its water consumption. Garden vegetables, which owe much of their sales values to their succulence and to the rapidity with which they are forced, need optimum moisture conditions to promote their successful growth, while the slower maturing cereals may be stunted for a time and recover.

The adequate handling of the soil bears a close relationship to the effective usage of soil moisture. The distribution of the rainfall cannot be controlled, although it can be in some measure foretold and provided for; the character of the soil dealt with may not be all one would desire, though it may be bettered through intelligent handling; the usage of moisture by crops is inevitable and the amounts they use cannot be curtailed without lessening crop growth. The handling of the soil, however, be it adequate or inadequate, is within the power of the individual farmer to determine. It is within his grasp. He can profoundly modify it at will, can greatly benefit croppage by proper tillage, or let it suffer from its lack.

The operations of plowing, harrowing and cultivating all have a bearing on the control of the soil moisture. These common farm operations, when carelessly done, may fail to conserve needed moisture; but when carried out with a clear understanding of their relationship

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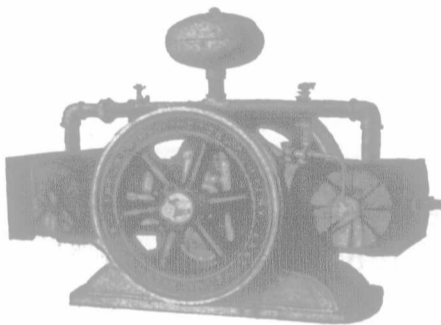
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when through; less weight to move around.

Morris, Man., June 26, 1906—Yours of the 26th at hand and would say in regard to the "New Way" Air-Cooled Engine keeping cool, I have no trouble with it and have been running it through this hot weather. I have no reason to believe but what the air-cooled engine is far superior to water or oil cooled ones. At least I find it so and have tried them all. If there is any other information you wish let us know and I will give you the best I can.—Yours respectfully, RALPH E. EVANS.

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to water saving and of their proper procedure necessary to the attainment of that end, their service as moisture conveyers and purveyors to crop growth is beyond computation. Just what should be that proper procedure, however, is not always easily stated. Infallible rules universally applicable cannot be laid down. There are many variants which prevent the formulation of dicta, such, for instance, as the geographical and topographical location, the physical characteristics of the soil, its chemical composition, climatic conditions, the nature of the croppage. Hence it follows that while principles may be enunciated, their advantageous application must always be a matter of individual judgement.

#### NATURE OF CAPILLARY WATER.

Before the consideration of the specific tillage operations in their relation to moisture conservation is taken up, a clear idea should be had of the method whereby the soil moisture reaches the surface from the standing water levels as well as of the way in which tillage retards its escape from the surface of the soil.

The soil moisture which is really available for crop growth is that which is known as capillary water. The soil is not a solid and impervious mass, but is full of pores; otherwise water could not sink into it. Different soils contain different proportions of pore space, varying all the way from a quarter to a half of their bulk. Even the hardest Macadam roadway contains pore space. These openings between the irregularly shaped soil particles are very minute and are of an infinite variety of shapes. They act, so far as soil moisture is concerned, like capillary tubes. A capillary tube, as its name indicates, being derived from a Latin word meaning hair, is a tube of extremely small diameter. In tubes of this character liquids ascend against the force of gravitation to heights which vary as to their diameters, being drawn upwards the higher the smaller the diameter of the tube in which they are confined. Thus, in glass tubes of the diameters mentioned below, water rises above the level to the heights given:

Diameter 0.1 inch; water rises above level 0.5 inch.

Diameter 0.01 inch; water rises above level 5.4 inches

Diameter 0.001 inch; water rises above level 54.0 inches.

This phenomena is caused by the attraction of the glass for the water. That such a force exists anyone can readily demonstrate for one's self with the simplest apparatus, a narrow glass tube and a tumbler of water. The oil in the lamp saturates the wick in this same manner, being pulled upwards through the interstices between the threads, incidentally saturating them in its passage. In the same manner the blotting paper absorbs ink. Now the soil moisture, drawn from the reservoir of the standing water of the lower levels

towards and to the surface by this capillary action passes off into the air—unless its passage is retarded or stopped. It is vaporized by the sun's rays and by the wind. The action is much like that of the lighted lamp. The oil in the lamp represents the water table, i.e., the level of the standing water in the well, the wick represents the soil and the flame the sun's rays. A few hours of illumination and the oil has been drawn up through the wick, burned and the products of combustion vaporized. A few hours of brilliant sunshine and vast quantities of water have been drawn up through the soil and vaporized from its surface. Immense amounts, thousands of tons annually per acre, are thus lost for immediate and effective service. Water which is thus vaporized from the surface of the soil serves no purpose in agriculture save that of cooling it—sometimes an advantage but more often not—unless perchance there is an excess of water. The process is a natural one and its result inevitable. Neither process nor result can be abrogated; nor would it be desirable to stop their action if it could be done. It is the means whereby the plant roots gain sustenance for plant growth. It is the vaporization which is undesirable; and this, tillage may retard. It cannot prevent it; not means thus far devised can do this; but its extent can be lessened. Tillage retards the evaporation of soil moisture by the severance of the connection of the irregular and tortuous capillary tubes with the surface, by breaking and by clogging them. The widening of the upper portions of the tubes serves to lessen the height through which the water may be raised, while the clogging stops the water at a point just below the obstruction. Just as the San Francisco water supply was cut off by the breaking and clogging of the water mains in April's earthquake, so are the smaller water pipes of the soil broken when it is disturbed by tillage. And, furthermore, just as the water supply was reestablished when the broken conduits were repaired, so is the connection with the soil surface again restored naturally and the soil moisture escapes again, unless recourse is had to frequent stirring of the soil. According, however, to the frequency of the surface cultivation during the earlier months of the crop growing season is the extent of moisture conservation. An infrequent cultivation retards moisture escape for the time being, but the readjustment of the surface soil particles naturally occurring results in a reestablishment of the connection of the surface tubes with those below, a repairing process as it were, and the former condition is renewed. In the absence of irrigation and if timely rains do not occur, the only chance for a maximum crop lies in keeping at it throughout the earlier part of the growing season.—Bulletin, Vermont Experimental Station.

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OBSERVATIONS ON JAPAN.

Jacob H. Schiff, the New York financier, brings back from Japan some interesting observations regarding that people, who were so recently looked upon as an inferior race. After noting that Japan is a country without beggars, without drones and without drunkards, Mr. Schiff says:

"Nothing is heard or seen of the effect of the recent war. The people neither talk about it, nor have they become overbearing or in any manner intoxicated by their great victories, but have quietly gone to work to develop their industries, to increase their commerce and trade and to get a fair control over the new markets which the success of their armies has opened for them."

This is recorded of a heathen nation. Of what western or Christian nation could the absence of a great national swagger be noted, after a brilliantly successful war against a power which the whole world regarded as far mightier in arms? We can only with difficulty forget that large portions of our own country have hardly as yet ceased to boast of the defeat of decrepit Spain, and to take pride in the ruthless conquest of the slightly armed Filipinos. Evidently the heathen Japanese do not class a capacity for fighting as the highest of all human virtues. If they did they would be so intoxicated over their Russian victories that there would be no living with them in comfort amongst the family of nations. — Springfield Republican.

MR. MOODY'S TACT.

Dwight L. Moody once called on a ministerial brother in an eastern town, desiring to spend the next day, Sunday, with him. The minister was agreeable, but said he was ashamed to ask Moody to preach. "Why?" asked Mr. Moody. "Well," was the reply, "our people have got into such a habit of going out before the close of the meeting that it would be an imposition on a stranger." "I will stop and preach," said Moody. When Sunday arrived Mr. Moody opened the meeting and then encouragingly

said: "My hearers, I am going to speak to two sorts to-day, the sinners first, then the saints." After earnestly addressing the supposed sinners he said they could now take their hats and go. But the whole congregation waited and heard him to the end.

A red-faced man was holding the attention of a little group with some wonderful recitals.

"The most exciting chase I ever had," he said, "happened a few years ago in Russia. One night, when sleighing about ten miles from my destination, I discovered, to my intense horror, that I was being followed by a pack of wolves. I fired blindly into the pack, killing one of the brutes, and, to my delight, saw the others stop to devour it. After doing this, however, they still came on. I kept on repeating the dose, with the same result, and each occasion gave me an opportunity to whip up my horses. Finally there was only one wolf left, yet on it came, with its fierce eyes glaring in anticipation of a good, hot supper."

Here the man who had been sitting in the corner burst forth into a fit of laughter.

"Why, man," said he, "by your way of reckoning that last wolf must have had the rest of the pack inside him!"

"Ah!" said the red-faced man without a tremor, "now I remember it did wobble a bit."

"Is the new bookkeeper strictly honest and trustworthy?" asked the silent partner.

"You bet he is!" said the business manager. "He saw so much graft and corruption in the last place where he held a job that he acquired a large disgust for all kinds of crookedness. In fact, I consider him almost offensively straight." — Chicago Tribune.

A physician gives this advice to those suffering from corns: Soak your feet in hot water to which has been added half a pound of bicarbonate of soda. Soak them for a half an hour, after which

remove the thickened part of the corn by peeling it off, not cutting it—this can be done after starting it by raising a little of it with the blunt point of a knife or scissors. Then apply to it collodion, painting it thickly so as to make an artificial skin. It is better to add ten drops of cannabis indica to the ounce of collodion, or ten grains of salicylic acid. If you will persist in this treatment the corns will improve greatly and may after a time disappear. They should be protected from the rubbing of the shoe by means of plasters, with holes in the center. These are usually too thick, and should be made as thin as possible, and still relieve the pressure.

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Every Stove backed by the Manufacturers' Guarantee



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Every progressive dealer handles Empire Stoves and Ranges because the buyer wants an article that meets his requirements.

You want an Empire Queen Range with a reservoir, coal and wood duplex grate, large, roomy oven, and good, substantial, high closet, six nine-inch lids. It will last you a lifetime and will save you money and labor. Ask your dealer to show you the Empire Queen, or if at the fair we have a complete line on exhibition—pleased to show you through.

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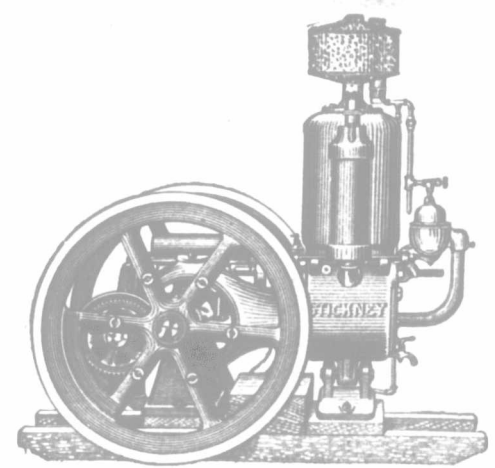
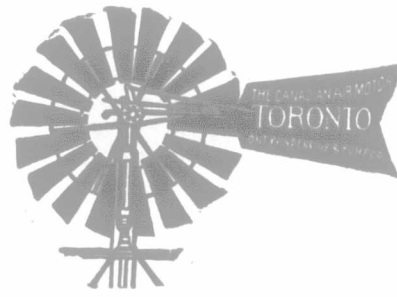
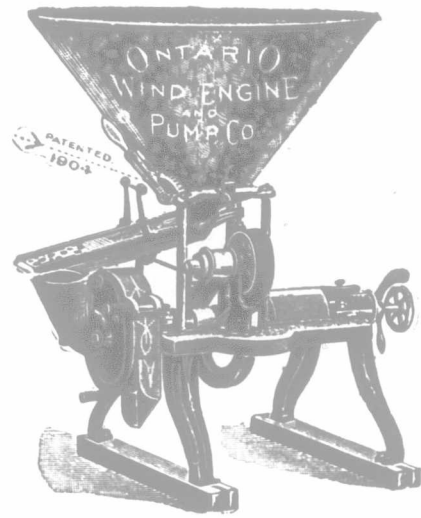
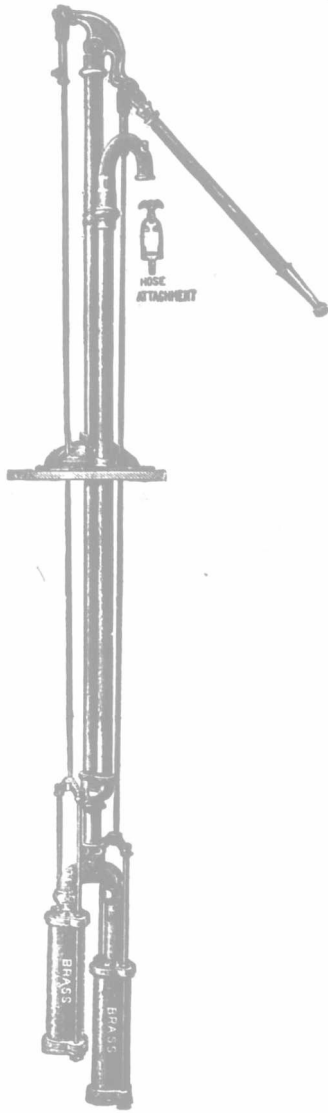
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Take the Belt Line car to Logan and Chambers Streets, or send for Catalogue 96.

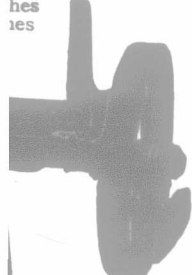


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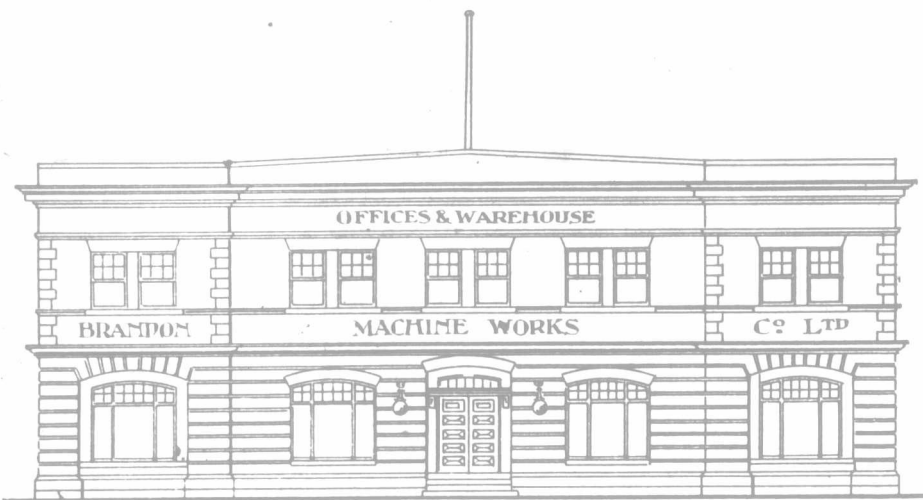




**BRANDON MACHINE WORKS COMPANY, Limited.**

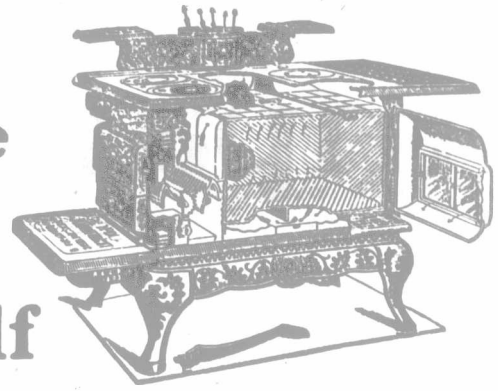
An office and warehouse building designed along lines of comfort, convenience, and no little architectural beauty is to be erected by the Brandon Machine Works Co. Ltd. just across the road from their magnificent factory on Rosser avenue, between Fourteenth and Fifteenth streets, Brandon, Man. As the accompanying illustrations

would indicate the structure will be a credit to the city of its location as well as to the corporation behind it. Brick with stone trimmings will give the building an appearance of solidity that cannot fail to compel admiration. Tenders for construction have been opened and the work should reach completion early in the fall



Front Elevation and First Floor Plan of New Offices and Warehouse for BRANDON MACHINE WORKS CO., Ltd., BRANDON, MAN.

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For  
Yourself**



**So Simple — So Scientific — So Perfect**

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**Farmer's Advocate of Winnipeg Limited**

**MAKING BRITISHERS AND FORTUNES.**

A staff correspondent of the *Toronto Globe* has been visiting the West and supplying his paper with news that is of considerable interest. Recently he visited Dundurn and as his description of the operations of American settlers there is typical and the processes of Canadianizing is going on all over we give some of his impressions;

"I came here from Saskatoon with a Saskatonian friend for no other purpose than to see Mr. E. J. Meilicke, the Minnesota man whom I have already mentioned once or twice as an example of the successful American settler. Dundurn is about twenty-five miles south of Saskatoon. It has no pretensions to size, nor, I fancy, any expectations that it will ever be a metropolis. Still there are a couple of elevators here, a branch of the Northern bank, and several well-equipped stores, and there are many settlers around. The father of the town undoubtedly is the gentleman I came to see. He had just returned from a four-hundred-mile drive—(this is indeed a country of magnificent distances!)—into the Goose Lake, Eagle Lake and Eagle Creek districts, a country lying west of Saskatoon, into which the settlement is pouring at the moment though it is unserved for the present by railways. The C. P.R. and G. T.P. are, however, starting with true railroad speed to build through the country, and the early settlers will reap the benefit of their enterprise. Mr. Meilicke had been out there in company with a Saskatoon land agent, and I should not be surprised if they also reap some advantage from their trip.

**AN AMERICAN STATE SENATOR.**

A few years ago Mr. Meilicke was a member of the State Senate of Minnesota, and he still wears the title of "Senator" among his neighbors here.

**BEGINS TO THINK OF CANADA.**

"It was about 1900," "the Senator" said, "that I first began to think of Canada. I had seen the exhibits of the Canadian western Provinces at our State fairs, and I became interested. Others of our people were interested, too and very soon there was a movement on foot to send a delegation into Canada to make a report on the country. The Canadian Government and the railways were, of course, arranging a good many such trips, without cost to the visitors from the other side. One of my neighbors was always talking to me about the country around Edmonton. He had a son settled in that country, and he was dying to go and settle near him. He was willing to go as a delegate and report on the country, but I knew from his talk that Edmonton was the only country that would suit him. Well I was not going into Canada that way. If I went, I wanted to be free to go where I wished, and not to be bound to any particular neighborhood. I told my neighbor this, and said the same thing to the railway and Government people when they spoke to me on the subject. However, at last it was all fixed, and my neighbor and I came into Canada on a prospecting trip. That was in 1900. Well, of course, nothing would do but my neighbor must go straight to Edmonton, because his son was there. I went with him, but determined to keep my eyes open and stop off at different places as we came back. We went a good deal into the country around Edmonton, without finding exactly what we wanted at the price we had supposed. Land was more or less covered with bush, and was held pretty high, unless we went a long distance away from the railway, and this we did not want to do, because at that time there was no likelihood of a railway coming along soon. We were just about giving up when we fell in with a Scotchman, who had been farming for years in the country. We had to stop in his house over night, and naturally we fell to talking about the land. At last the Scotchman said:

"There's some land here, if the right parties came along."

The Scotch farmer was very wary and close, and for a while would give us no more information. At last I said to my neighbor, 'It's no good; we can't come and settle here unless we've got a pedigree.' However, with a little more coaxing, the Scotchman said: 'Weel, ye'll get no word from me if ye're a Catholic.'

Now, we were alright there, for I was a German Lutheran, and my neighbor was a Methodist, so things began to look up.

"What next?" I asked. "Weel, we want naeboddy here who can't speak English."

"Well," I said to my neighbor, "I guess you ought to be able to speak English well enough, seeing that you are an American born, and I've lived so long in the United States myself that I can almost speak it."

When the Scotchman found that it was for ourselves we wanted the land, and that we came up to his standard pretty well, he was as good as his word, and told us where a half section of good land could be got at \$8 an acre; and my neighbor went out and bought it and is settled on it now. He is not many miles away from his son. And the Scotchman said when he bade us goodbye, 'I've been happyly deesappointed.'

Now I went back to Minnesota after this without making any report. I was a little disappointed over the prices of the land where I had been, and a little nervous at the kind of people I should meet in this country. I am a pretty liberal-minded man myself, and I don't like too strict notions on Sabbath observance and such matters. However, I kept turning the matter over in my mind, and kept hearing all the time more and more of Canada. At last I decided that the people must be alright, judging from all we heard of them, and if there were little things here and there we didn't like we had better compromise on them.

**A SECOND TRIP.**

The railway people were still keen on getting us out into the Edmonton country, and when I spoke of coming up here again to look around they declared it was not worth while. However, here I came, in the spring of 1901, and here I decided to locate. I sold my farm in Minnesota, and myself and three sons homesteaded here in Dundurn, so that we got a section between us.

The ranchers around here had had possession of the country for years, and did not like the idea of settlers coming in. They held a public meeting even to consider the situation, and one man in particular became so excited that his voice shook with indignation when he spoke. He declared that within five years we should all be out of it again, and vowed that some years the drouth was so bad here that even the gophers starved. Then "the Senator" proceeded to tell of his actual removal here in 1901, how he and one or two Minnesotans who quickly followed him organized a Dominion Day celebration on the first of July following, how they had invited to the sports the ranchers around, and had extended the same invitation to the Indians on the neighboring reserve, how everybody had accepted and helped to make the affair successful, and finally how he had himself taken part in the Fat Man's Race, and won it.

**"THE SENATOR'S" HOUSES AND BARN.**

Then "the Senator" took us out and showed us his fields and his barns and his stables, and the new house that he is building for himself. It is the third house he has built here. The first he sold, with some land on which it stood, to Mr. Schwager, another German from Minnesota, who had followed Mr. Meilicke here, and who, like "the Senator," had passed through the State Legislature there. Mr. Schwager, it may be remarked in passing, is farming on a princely scale, and has broken no less than five thousand acres; he came in but two years ago. This first house is really an imposing residence, finished off with elegance and surrounded by a beautiful turf lawn. The second house was built and presented by "the Senator" as a Christmas gift to his daughter, who had just previously married Dr. Wilson of Dundurn, a young Scotchman, who had come there to practise. This is the house in which "the Senator" is living just now, the young couple being in another residence temporarily, while the third house is being constructed on an ample and comfortable scale. Mr. Meilicke has two sections under crop this year, a little more than last year, when his twelve hundred acres brought him in a bumper crop of 45,000 bushels.

(Continued on page 1160)

**THE BIG TRUTH STICK**

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**Electricity Will Cure You**

Take my Electric Belt for what it will do for you. Wear it when you sleep at night, or while you are resting after your work. You will find it a vitaliser, a tonic to your nerves, a rejuvenator of waning vitality. Use it for any ailment which drugs have failed to cure, and you will never cease praising it.

I claim that I can cure you weak men; that I can pump new life into worn-out bodies; that I can cure your pains and aches, limber up your joints and make you feel as frisky and vigorous as you ever did in your life. That's claiming a good deal, but I have a good remedy, and know it well enough to take all the risk.

Owen Sound, Ont., March 15, '06.  
Dr. McLaughlin:  
Dear Sir,—The trouble for which I purchased your Belt has entirely disappeared. It was only after a great deal of hesitancy and inquiry from your patients that I bought one of your Belts, but I am now glad that I did. My back is perfectly well, and I never was so strong or felt so well as I do now.  
Yours truly, GEO. A. STARK.

Dear Sir,—I take much pleasure in writing to you to let you know that I would not be without your Belt for any money if I could not get another as good. I don't think it can be beaten. It has helped me wonderfully, and I cannot recommend it too highly. I feel like a different man entirely. I still beg to remain,  
Your friend, D. JANNISON.

These strong words from grateful men are just fresh from the pen. They should inspire the readers of this paper with fresh hope that there is a cure for them in my remedy.

**PAY WHEN CURED**

To those who are tired of paying without results, and to those who doubt if anything will help them, I make this offer: If you will secure me my pay when you are cured, I will let you have my Belt without paying me one cent in advance.

**Dr. McLaughlin's Electric Belt Cures**

Varicocoele, Rheumatism, Kidney Troubles, Lame Back, Sciatica, Stomach Troubles, Nervous Debility, Lost Vitality, and every indication that you are breaking down physically.

I know that no man remains a weakling because he wants to. I am sure that you want to overcome every indication of early decay that has shown itself on you. I don't think the man lives who would not like to feel as big and strong as Sandow, and I know that if you have a reasonable foundation to build upon I can make you a bigger man than you ever hoped to be. I want you to know that you who can't believe it, and I want you to have my book, in which I describe how I learned that strength was only electricity, and how I learned to restore it; also I want to tell you the names of some men who will tell you that when they came to me they were physical wrecks, and are now among the finest specimens of physical manhood.

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I've got a beautiful book, full of good honest talk about how men are made big and noble, and I'll send it to you, free, sealed, if you send me this coupon. Call for consultation. Free.

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Tin rusts, shingles dry and blow off, tar roofs sag and run, both burn at the touch of a spark.  
Rex Flintkote is good fire insurance because it is spark-proof. It affords perfect protection in all kinds of weather, hot or cold, wet or dry, because it is pure, long-fibre, wool-felt, saturated with an acid, alkali, water-proof material, both sides coated with a water-proof and fire-resisting compound. Any ordinary laborer can lay it as easily as a carpet.

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a big knee like this, but your horse may have a bunch or bruise on his Ankle, Hock, Stifle, Knee or Throat.

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will clean them off without laying the horse up. No blister, no hair gone. \$2.00 per bottle, delivered. Book 8-C free. **ABSORBINE, JR.**, for mankind, \$1.00. Removes Soft Bunches, Cures Varicose Veins, Varicocele, Hydrocele, Ruptured Muscles or Ligaments, Enlarged Glands. Allays Pain. Mfd. only by

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**A HORSE SHOW STORY.**

The following burlesque dialogue, by Herbert Assheton, in *Rider and Driver*, will appeal to quite a few of our readers about this season:

"Do, Pamby?"  
"Hello, Namby! Haven't seen you for an age!"

"But what are you doing in that costume? Do you ride?"

"Why, of course! And bought a horse, too, don't you know. Got it from a chap who's manager of a country show; and, begad, he included in the dicker that he'd make me a judge this summer—what d'you think o' that?"

"You don't say so! I didn't know that you'd taken up the horse fad!"

"Oh, yes! Had to, you see! Really, riding togs are all the rage, and my tailor told me I wasn't up-to-date without 'em, so I've been taking lessons for the last two months."

"By Jove, you're a devil for luck! I've owned three nags, and been riding for nearly a year, yet I only got my first invitation to judge six weeks ago."

"Too bad! But did you go?"

"Sure! Why, you're not in it at all now until you graduate in the ring!"

"That's so! But tell me, dear boy, how you managed it, and what a fellow's got to do."

"Oh, it's easy enough, if the exhibitors don't try to cheat. We're only called on to judge hunters, you know. That's the gentlemen's exclusive end of it; it sometimes takes professionals to do the other stunts. And when I asked Riley, our coachman, what he'd do in my place, he gave me some good points."

"By Jove, Namby, Riley ought to know! He came from over the pond, didn't he? But what did he tell you?"

"He said there were just three things to do. Put up a big bluff; wear your newest boots and breeches, and give all the ribbons to the thoroughbreds."

"That seems like a straight tip! My manager, too, said something about the last point."

"Oh, yes! Riley says you must do that or they'll put you down for a jack."

"But how's a fellow to know the thoroughbreds? That's what gets me!"

"Well, I didn't find Riley's rule altogether infallible; but it comes near hitting the mark. Its all right, anyhow, so long as they don't cheat!"

"Is it difficult to remember? For I find it devilish hard to keep in my mind whether the spavins or forelocks—no, it's the footlocks, isn't it, that come next to the hoof?"

"My dear boy, you don't have to cram all that stuff! It's a dead easy thing the way Riley puts it. The thoroughbreds have long tails and the half-breeds are docked; that isn't hard, is it?"

"Oh, no! That's dead easy, as you say! Here's five dollars for Riley, with

my compliments. I feel much more comfortable."

"But you'd better look out, Namby, and get some hints about the ring!"

"The doose! I'm sure I can distinguish for myself between the docked-tail of the thoroughbred and the long tail of the common horse."

"There you go already; it's just the opposite! But it depends, too, on the honesty of the exhibitors. In my case there was quite a mix-up—and, in fact, I retired from the ring."

"You don't say so! Why, what on earth happened?"

"Well, a sly kind of a fellow had a half-bred horse with a long tail!"

"Stop a second—oh, yes; that's right! Well?"

"And it jumped everything clean—better than all the rest put together, and really, to my mind, it was also the fastest and sleekest horse in the ring."

"What an infernal swindle! What in the name of goodness did you do about it?"

"Well, you see, it was very embarrassing. I heard the president of the show say: 'By thunder, he's given that low-down, half-bred the ribbon over my thoroughbreds!' And I wished at that moment that the earth would open and swallow me up! I turned towards the man and said, 'Pardon me, but aren't you mistaken about that? If you look again you'll see the horse I put the blue ribbon on has a long tail.' And I know my sarcastic tones showed my disgust!"

"By Jove, his insolence was unbearable! He stared at me in the rudest kind of way, without answering a word—and then laughed in my face."

"Oh, that was perfectly horrid, Namby!"

"Yes! And a minute afterwards he said with a sneer, 'Long tail, indeed! You're away off! That ain't a thoroughbred! Should think you'd have seen that with half an eye!'"

"But it did have a long tail, didn't it?"

"Certainly it did! But when I called for the owner he, too, was impertinent and laughed, but he confessed that he hadn't had time to dock the horse, so that clinched it, d'you see? I insisted that he should bring back the ribbon, and made some pointed remarks about the deception—but it was no go."

"That was a dreadfully rough deal, Namby! I think his behavior was beastly. I should have quit there and then."

"I did! Several of the officials gathered around, and I told them that if they didn't expose such a cheat, I'd leave the ring at once."  
"Well, didn't they do it?"  
"No, indeed! That was the worst of it! They huddled together for a minute or two, talking in low tones, while some of them looked over at me with a grin on their faces. Then the manager said they found it impossible to do what I asked; and added something which I couldn't understand, that 'their judgment of heads was better than mine of tails, and they'd better take out the joker, and shuffle for a new deal.'"

"I don't see the point, but I'd have pulled out at once."

"Neither did I, but I wasn't going to pass by such a fraud; so, raising my hat, I said, 'Gentlemen, I'll wish you good morning! I can't endorse anything of this kind, and it's better for me to retire.' So I left."

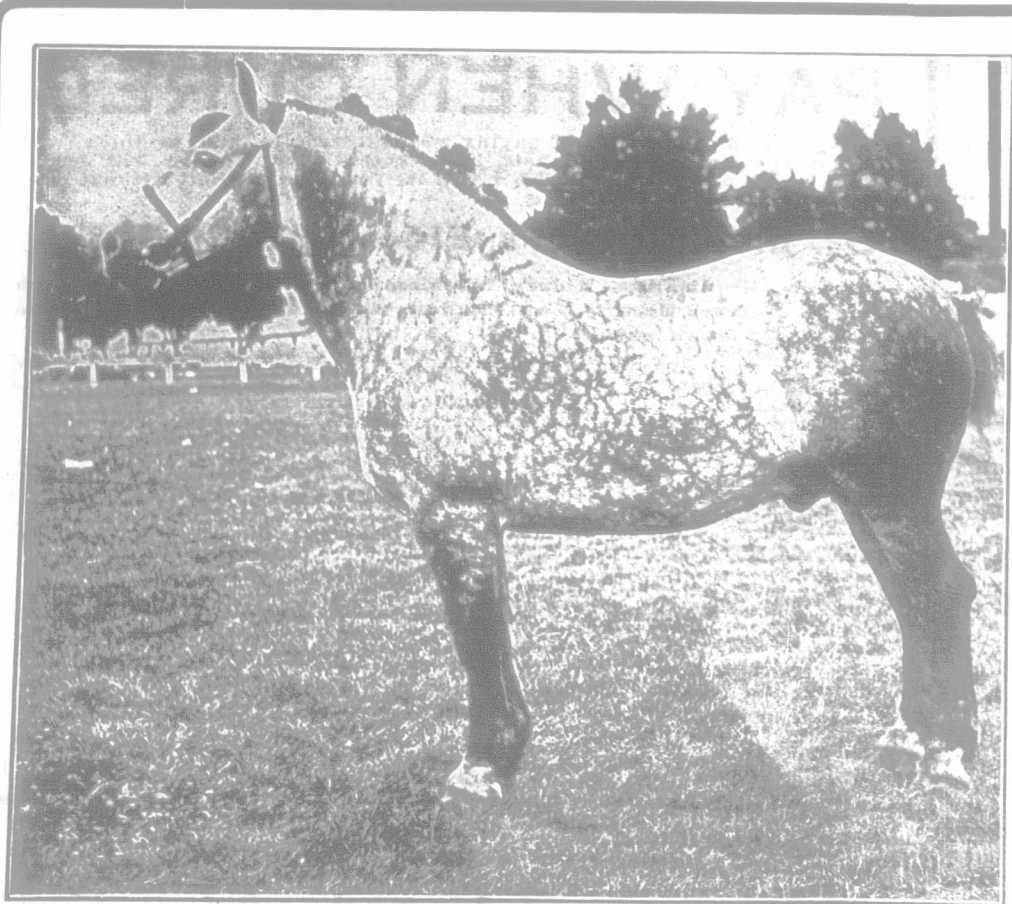
"Really, Namby, I think I shall reconsider my promise! Come and take a drink!"

Melrose Highlands, Mass.  
Dr. S. A. Tuttle,  
Boston, Mass.

My Dear Sir:—Allow me to say that I have kept your Elixir in my house as a family medicine for a number of years, and have found it all you recommend it to be.

As a "cure-all" I believe it stands at the head of all remedies for sprains, lameness, soreness, pain, et cetera, on the market to-day. In my own case it has proved invaluable for a dislocated and broken shoulder. I recommend it to all sufferers.

Yours truly,  
(REV) W. N. RICHARDSON



**LOOK**  
For my Bunch of  
**Percherons**  
and **Shires**

**At the Industrial at**  
**Winnipeg, from the**  
**23rd to 28th July.**

I will make some prices  
during the week that will  
defy competition.

**JOHN H. STOUT**  
At "The Oaks,"  
WESTBOURNE, MAN.

POINTS OF AYRSHIRES.

Acting on the suggestion of the Ayrshire Cattle Breeders' Association of Canada and the United States, a special committee of the Ayrshire Cattle Herdbook Society of Great Britain and Ireland has revised the present scale of points for judging Ayrshires, and the proposed scale is to be submitted for approval at the general meeting of members in July next.

PROPOSED SCALE OF POINTS FOR AYRSHIRE BULLS.

Head.—Forehead broad and clearly defined, 2; horn strong at base, set wide apart, inclining upward, 1; face of medium length, clean-cut, showing facial veins, 2; muzzle broad and strong, without coarseness, 1; nostrils large and open, 2; jaws wide at the base and strong, 1; eyes moderately large, full and bright, 2; ears of medium size and fine, carried alert, 1; expression full of vigor, resolution, and masculinity, 3-15.

Neck.—Of medium length, somewhat arched, large and strong in the muscles on top, inclining to flatness on sides, enlarging symmetrically towards the shoulders; throat clean and free from loose skin—8.

Fore Quarters.—Shoulders strong, smoothly blending into body, with good distance through from point to point, and fine on top, 3; chest low, deep and full between and back of fore legs, 8; brisket deep, not too prominent, and with very little dewlap, 2; legs and feet—legs well apart, straight and short, shanks fine and smooth, joints firm; feet of medium size, round, solid, and deep, 2-15.

Body.—Back short and straight, chine strongly developed and open-jointed, 5; loin broad, strong, and level, 4; ribs long, broad, strong, well sprung, and wide apart, 4; abdomen large and deep, trimly held up with muscular development, 4; flank thin and arching, 1-18.

Hind Quarters.—Rump level and long from hooks to pin bones, 4; hooks medium distance apart, proportionately narrower than in female, not rising above the level of the back, 2; pin bones high, wide apart, 2; thighs thin, long, and wide apart, 3; tail fine, long, and set on a level with back, 1; legs and feet—legs straight, set well apart, shanks fine and smooth; feet medium size, round, solid, and deep, not too cross in walking, 2-14.

Scrotum.—Well developed and strongly carried, 2. Rudimentaries, veins, etc.—Teats of uniform size, squarely placed, wide apart, and free from scrotum; veins, long, large, tortuous, with extensions entering large orifices; escutcheon pronounced and covering a large surface, 4-6.

Color.—Red of any shade, brown, or these with white, mahogany and white or white; each color distinctly defined—3.

Covering.—Skin medium thickness, mellow, and elastic, 4; hair soft and fine, 2; secretions oily, or rich brown or yellow color, 1-7.

Style.—Active, vigorous, showing strong masculine character; temperament mild—10.

Weight.—At maturity, from 1,200 to 1,500 pounds, 4.—Total, 100 points.

PROPOSED SCALE OF POINTS FOR AYRSHIRE COWS.

Head.—Forehead broad and clearly defined, 1; horns wide set on, and inclining upward, 1; face of medium length, slightly dished, clean cut, showing veins, 1; muzzle broad and strong, without coarseness, nostrils large, 1; jaws wide at the base and strong, 1; eyes full and bright, with placid expression, 2; ears of medium size and fine, carried alert, 1-8.

Neck.—Fine throughout, throat clean neatly jointed to head and shoulders, of good length, moderately thin, nearly free from loose skin, elegant in bearing—3.

Fore Quarters.—Shoulders light, good distance through from point to point, but sharp at withers, smoothly blending into body, 2; chest low, deep and full between and back of fore legs, 6; brisket light, 1; legs and feet—legs straight and short, well apart, shanks fine and smooth, joints firm; feet medium size, round, solid, and deep, 2-11.

Body.—Back strong and straight, chine lean, sharp, and open-jointed, 4; loin broad, strong, and level, 2; ribs long, broad, wide apart, and well sprung, 3;

abdomen capacious, deep, firmly held up with strong muscular development, 3; flank thin and arching, 1-13.

Hind Quarters.—Rump wide, level, and long from hooks to pin bones, a reasonable pelvic arch allowed, 3; hooks wide apart, and not projecting above back, nor unduly overlaid with fat, 2; pin bones high and wide apart, 1; thighs thin, long, and wide apart, 2; tail long, fine, set on a level with the back, 1; legs and feet—legs strong, short, straight when viewed from behind, and set well apart; shanks fine and smooth, joints firm; feet medium size, round, solid, and deep, 2-11.

Udder.—Long, wide, deep, but not pendulous, nor fleshy; firmly attached to the body, extending well up behind and far forward; quarters even; sole nearly level, and not indented between teats, udder veins well developed and plainly visible—20.

Teats.—Evenly placed distance apart from side to side equal to half the breadth of the udder, from back to front equal to one-third of the length; length, 2 1/2 to 3 1/2 inches, and not less than 2 inches, thickness in keeping with length, hanging perpendicular, and slightly tapering, and free flow of milk when pressed—12.

Mammary Veins.—Large, long, tortuous, branching and entering large orifices—5.

Escutcheon.—Distinctly defined, spreading over thighs and extending well upward—1.

Color.—Red of any shade, brown, or these with white, mahogany and white, or white; each color distinctly defined. (Brindle markings allowed, but not desirable.)—2.

Covering.—Skin of medium thickness, mellow, and elastic, 3; hair soft and fine, 2; secretions oily, of rich brown or yellow color, 1-6.

Style.—Alert, vigorous, showing strong character; temperament mild—4.

Weight.—At maturity, from 800 to 1,000 pounds, 4.—Total, 100 points.

OLD SCALE.

- 1. Head short, forehead wide, nose fine between the muzzle and eyes, muzzle large, eyes full and lively, horns wide set on, inclining upwards—10 points.
2. Neck moderately long, and straight from the head to the top of the shoulder, free from loose skin on the under side, fine at its junction with the head, and enlarging symmetrically towards the shoulders—5 points.
3. Fore Quarters.—Shoulders sloping, withers fine, chest sufficiently broad and deep to insure constitution, brisket and whole fore quarters light, the cow gradually increasing in depth and width backwards—5 points.
4. Back short and straight, spine well defined, especially at the shoulders, short ribs arched, the body deep at the flanks—10 points.
5. Hind Quarters long, broad, and straight; hook bones wide apart, and not overlaid with fat; thighs deep and broad; tail long, slender, and set level with the back—8 points.
6. Udder capacious and not fleshy; hinder part broad, and firmly attached to the body, the sole nearly level, and extending well forward; milk veins about udder and abdomen well developed; the teats from 2 to 2 1/2 inches in length, equal in thickness, the thickness being in proportion to the length, hanging perpendicularly; their distance apart at the sides should be equal to about one-third of the length of the vessel, and across to about one-half of the breadth—33 points.
7. Legs short in proportion to size, the bones fine, the joints firm—3 points.
8. Skin soft and elastic, and covered with soft, close, woolly hair—5 points.
9. Color.—Red of any shade, brown, or white, or a mixture of these, each color being distinctly defined; brindle, or black and white, is not in favor—3 points.
10. Average live weight, in full milk, about 10 1/2 cwt.—8 points.
11. General appearance, including style and movement—10 points. Perfection, 100 points.

THE RUMOR HAS GAINED circulation that the J. Y. Griffin Co., have ceased operations in the produce line, that is in the buying and wholesaling of butter, eggs, cheese, etc. This report is denied and it is emphatically stated that there has been no change in the policy of the company in this or in any other respect.

THE REWARD OF LYING.

Senator Proctor, of Vermont, once a year tours his state, getting next to his constituents. Two years ago on his tour he was invited by a farmer to dine. The farmer's wife, who was having cabbage and pork for dinner, became so excited because of the high position of her guest that she allowed the cabbage to burn. "I have to apologize for the cabbage," she announced at the meal. "Oh, don't do it," said the Senator. "If there's any one thing I do like it is to have my cabbage burnt just a little." Last year on his tour whenever the Senator took dinner with a constituent he found cabbage burned just a little bit on the table, and had to act as if he enjoyed it. Every farmer's wife of them had passed the news along.

"Why is it, Willie, that you have to stay after school nearly every day?" "Well, ma, I hate to blow about myself, but I'm beginning to believe the teacher must enjoy bein' alone with me."—Chicago Record-Herald.

Embarrassed by letting you off yesterday afternoon because you said you had some necessary work to do, and one of my clerks said he saw you an hour or two later at the ball game. Office Boy—Yes, sir; I was rootin' fur de home team.—Chicago Tribune.

Liquor and Tobacco Habits

A. McTAGGART, M.D., C.M., 75 Yonge St., Toronto, Canada.

References as to Dr. McTaggart's professional standing and personal integrity permitted by: Hon. W. R. Meredith, Chief Justice, Hon. G. W. Ross, ex Premier of Ontario, Rev. John Potts, D.D., Victoria College, Rev. Father Teefy, President of St. Michael's College, Toronto, Rev. Wm. McLaren, D.D., Principal Knox College, Toronto. Dr. McTaggart's Vegetable remedies for the liquor and tobacco habits are healthful, safe, inexpensive home treatments. No hypodermic injections, no publicity, no loss of time from business, and a certainty of cure. Consultation or correspondence invited.

HAWTHORN BANK

CLYDESDALE HORSES, SHETLAND PONIES, SHORTHORN CATTLE

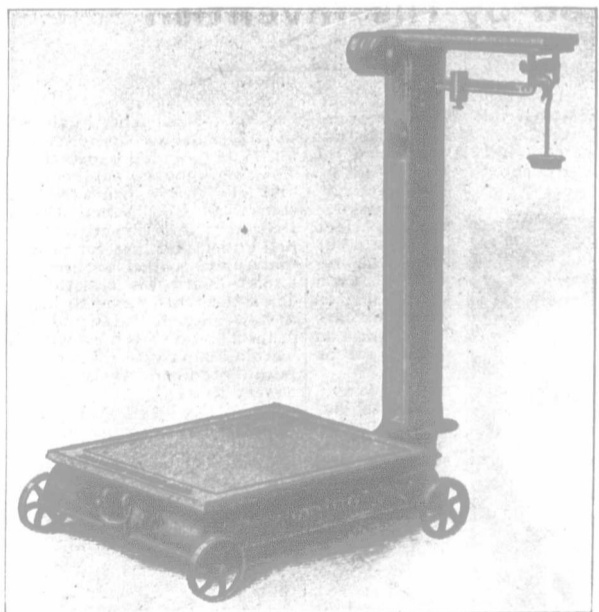
The Largest Importing Establishment in Western Canada. Stallions and Mares, Bulls and Heifers imported and home bred, always on hand for sale. See my Exhibit at the Industrial.

Look me up and tell me your wants. Will be pleased to have you inspect the stock whether you buy or not.

Sale Barn, 50 yards from C.P.R. depot Carberry, Man.

John Graham Proprietor

Fairbanks Standard Scales



The Scale illustrated can be used for any service and is a favorite one to the man in the country.

The Canadian Fairbanks Co.

Limited Montreal Toronto Winnipeg Vancouver

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CHARLSON

# The First Live Stock Commission and Forwarding House

Established In the West


We have unsurpassed arrangements completed for the handling of stock in the Canadian West. Our long experience enables us to secure for you ocean space at the lowest price and on the best steamers, and by so doing, consignments are then saleable in Winnipeg if desired. Should the bid not be satisfactory they could then be forwarded direct. We have also arranged to place one of our men in Europe to watch consignments arriving, so that our patrons' interests will be safeguarded. We are pleased to state that our business last year was double that of the previous year. We are in receipt of many letters of endorsement. If you have stall-fed or grass-fed cattle to dispose of this year, write us and we will be pleased to give you any information at our disposal.

Bankers—Canadian Bank of Commerce.

## H. A. Mullins & Company, LIVE STOCK Salesmen and Forwarding Agents Winnipeg, Man.

SHIP YOUR  
**Senega and Wool**  
TO  
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Also dealers in Hides, Pelts, Furs, Deerskins, etc. Highest prices paid for consignments. Write or wire us before selling.



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## THE DEAF MADE TO HEAR

### The Story of the Electrical Engineer, Geo. P. Way, Whose Lost Hearing Was Restored by His Invention

About eight years Mr. Geo. P. Way, electrical engineer of the Detroit Young Men's Christian Association, could scarcely hear his own engines and dynamos.



Geo. P. Way, Inventor.

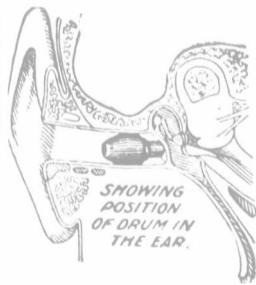
as Mr. Way tells the story, that he was at his post in the dynamo room one day nearly eight years ago, and as the buzzing in his ears bothered him more than usual he placed a curiously shaped tuft of cotton in his right ear. Then a most thrilling thing happened. In the midst of the perpetual silence that is the torment of one shut off from

the sounds of the busy world, there came a terrible crashing sound as of an earthquake, and Mr. Way bounded across the room terror-stricken. Then the amazed engineer sat down in his chair and tried to realize what had happened. Unconsciously he pulled the tuft from his ear. Instantly he returned to the eternal silence that had enveloped him for years. The sound of the machinery came to him as far away; he no longer heard his assistant's curious questions. Then the truth came to him and he realized that a new day had dawned for him. Mr. Way rushed home to tell his wife the good news; they were all amazed. Then for five years he experimented constantly to put his accidental discovery to use.

The Way Ear Drum was the result of his labors, and he wore it with splendid results. Others, of course, heard of the marvel and he was overwhelmed with requests for one of these little ear phones from friends as well as from people of whom he never knew.

Literally thousands of the drums have been sold in every part of the country, and the present volume of sales runs into hundreds of pairs weekly.

With these little ear drums in the ears it is almost impossible for any catarrh to take place. Mr. Way believes that there are very few cases of deafness that his drums will not relieve.



having averaged 36 bushels to the acre. His broad wheat fields lie in front of his house, right beside the little town that has grown up on the site he marked out. He told how the passing commercial travellers had joked him about the stakes he had driven in to mark the boundaries of the new town.

"Do you think you are really going to have a town here?" they would ask him, without getting off the train.

#### THE CHANGE OF FLAG.

As to the change of flag, "the Senator" was frank enough. He would not, he says, have cared to live in Canada had there been any signs of truckling to high-sounding titles and so forth, but he had seen nothing of that. The people were agreeable, the laws were at least as good as the American, the Mounted Police system was the best possible, and succeeded admirably in maintaining the law, and the school system, he thought, much ahead of that of the western States. He was naturally in sympathy with the Liberal party, and had been a Populist when elected to the Minnesota Legislature; but he was not going to consider himself tied to any political party.

I may mention one incident in closing which throws some further light on the practical character of "the Senator." As the settlers came in there were soon children enough for a Sunday school. The Presbyterian pastor, the first on the ground, spoke with Mr. Meilicke, the German Lutheran, and the consequence was that a union Sunday school was started right away, "the Senator" providing the necessary equipment in the way of books, etc."

A southern Judge tells of the disqualification of a jurymen who came before him. The case was a capital one, and the lanky backwoodsman declared determined opposition to capital punishment. Looking at him sternly and in tones somewhat suggestive of wrath, the Judge asked the fellow if he did not think there were conditions so extraordinary as to warrant the hanging of the offender. He said he did not believe anything could make him assent to such a verdict.

"But will your Honor let me explain?" said the disqualified citizen. "I'd like to give the court my reasons."

"I don't wish to hear any explanation from you. Go and sit down."

"Excuse me, Judge, but you must hear my reason."

"Well, then, give it, and go along with you."

"The reason I am opposed to capital punishment, your Honor, is that my old mammy taught me it were a sin to kill anything that wasn't fitten to eat."—*New York Tribune.*

United States Senator Hear enjoyed telling of this actual occurrence on a car on which he was a passenger.

The Senator was going home one winter afternoon, toward dusk, and happened to notice a man running after the car and vainly trying to attract the conductor's attention. The Senator notified the conductor, who stopped the car.

The belated passenger, who was somewhat under the influence of liquor, had

no sooner climbed aboard than he delivered himself of the following remarks:

"Shay, Mr. Conductor, does thish road run to 'commodate the passengers, or the passengers run to 'commodate the road?"

A certain Congressman from Virginia had long retained in his employ a colored man by the name of Ezekiel. One morning the master left the house, leaving behind him a letter he had forgotten. Some time in the afternoon he remembered the communication, and, as it was of some importance, he hastened back home, only to find that the letter was nowhere to be seen in his library. He had a distinct recollection that the letter had been left on a table. He summoned Ezekiel and asked if he had seen the letter.

"Yes, sah, yo' lef' it on yo' table."

"Then where is it now?"

"I mailed it, sah."

"You mailed it! Why, Zeke, I had not put the name and address on the envelope."



H. CATER, BRANDON, MAN.

A PROMINENT PUMP MANUFACTURER

"Jes' so, sah! I thought it was one of dem anonymous letters."—*American Spectator.*

"Judge," said Mrs. Starvem to the Magistrate who had recently come to board with her, "I'm particularly anxious to have you try this chicken soup."

"I have tried it," replied the Magistrate, "and my decesion is that the chicken has proved an alibi."—*Philadelphia Press.*

"So you long for the time when the airship will be a commercial reality?"

"Sure," answered the baggageman with some enthusiasm. "Think of droppin' off a trunk at a way station from a height of about two miles!"—*Louisville Courier-Journal.*

Mr. Way will be in Winnipeg at the Queens's Hotel, July 23rd to 28th inclusive. All who are deaf should be sure to call on him, as it will cost nothing to learn whether he can help you or not.

If you are unable to visit Winnipeg during the Fair week write to Mr. Way at his home office, 701 Majestic Building, Detroit, Mich. Tell him the cause of your deafness and how long you have been deaf.

**WHAT IS CALLED FOR.**

The work of the Insurance Commission has not been notable for vigor and earnestness in searching into the methods of insurance companies but enough has been brought out to show that funds given over to insurance companies in trust for the benefit of the insured have been used for other and wholly different purposes. The avowed purpose in creating one company was to provide an \$8,000 job for the son of one financial magnate; at a time when this company's account at the bank was overdrawn it was induced to use its credit in furnishing funds for the purpose of keeping a stock-jobbing son-in-law of this same magnate on his feet; moneys of other companies have been used to boom the selling price of speculative stocks in which those in control were interested; the practice of buying securities the Government had refused to authorize, because of their speculative and risky character, appears to have been universal; and the system of manipulating accounts for the purpose of deceiving the Government and through it the people as to the actual position of insurance companies seem to have been equally common.

What is called for is a system of inspection that will inspect, and certain provision for the jailing of directors and presidents who falsify returns or use for personal ends funds committed to them in trust.—*Sun.*

**FREE TRADE IN STAMPS.**

Why should there be a body of licensed stamp vendors with the privilege of selling postage stamps on commission? Can any sane person give a reason for

this survival of a relic of feudal times? If the postal revenue of Toronto has reached the boasted total of one million of dollars per annum, it means an absolute waste of ten thousand dollars per annum in this one city, for the local item of news announcing the inspector's intention of prosecuting anybody who sells without a license gives the interesting information that the pay of the licensed vendors is one per cent. To make one dollar the vendor has to sell five thousand two cent stamps! Think of it. Obviously the object in obtaining a license must, therefore, be the tradesman's desire to oblige his regular customers who purchase goods in his shop. Why should not every shopkeeper have the privilege? Why should any commission at all be paid when it is clear that the great majority of shopkeepers would feel themselves compelled to have stamps for sale, and be glad to act gratuitously at that? It is not pretended that the inspector or any other postal authority exercises surveillance over the licensed vendors; and it cannot be contended that the political patronage involved is worth talking about. The new Postmaster-General cannot do better than signalize his accession to office by the abolition of the present system, and by allowing everybody to buy stamps at the post-office in such quantities as he pleases, either for his own use or for transfer to those who want them. A great public convenience, and the saving of a considerable sum of public money, would be effected thereby, while the danger of counterfeiting would not in any way be increased. If country postmasters poured more stamps into the city than they now do, directly or through their customers, with the view of increasing their own income, they could be met with the inauguration of a scale of salaries based on population, which is a far more sensible method of remuneration than that now in vogue, which sets a premium on small chicanery and deceit.—*News.*

Tuttle's Elixir Co.,  
Boston, Mass.

Gentlemen:—I think it my duty to write and tell you that I consider your Family Elixir the greatest preparation on earth for the instant relief and speedy cure for poisoning from the "Gypsy and Brown Tail Moths." I tried many different preparations but received no relief from any of them, but after applying your Elixir three times, the irritation, itching and swelling was all gone, and I will be pleased to tell anyone of my experience.

Yours truly,  
ALBERT J. PILGRAM.

**FARMER'S ADVOCATE  
AND  
HOME JOURNAL**  
**Oldest  
Best  
Only**  
**WEEKLY MAGAZINE IN  
WESTERN CANADA.**

**Molassine Meal**

Which is giving such widespread satisfaction all through Europe, can now be had in Canada. Read what satisfied users have to say.

**Testimonials**

JOHN MORTON & CO., LIMITED, Exchange Buildings, Coventry.—"We are very much pleased with the Molassine Meal, which we have used in our stables for a considerable time. It has greatly improved our horses, which are constantly employed at heavy work and on long journeys. They are better able to do their work and are quite free from complaints of all kinds. Worms are entirely eradicated by its use."

GEORGE ARMSTRONG, Kettering, Northants.—"I milk 30 cows, and have used Molassine Meal for them the whole season, and have never had better or sweeter butter or given my customers such satisfaction. In fact, since using it, I never had butter come so quickly or keep sweet so long. My calves have done wonderfully well on it; for ewes and lambs it is excellent. It is a good feed to use when giving the cows turnips as it prevents the butter tasting of the turnips."

PROFESSOR McLAUGHLIN YOUNG, F.R.C.V.S., F.R.S.E., F.R.P.S., F.Z.S., Aberdeen and North of Scotland College of Agriculture, Marischal College, Aberdeen, reports:—"A brown horse in a most emaciated state and quite useless (condemned by the S.P.C.A.) weighed only 847 lbs. on the 7th November, 1904. The horse was weighed on the 18th November and scaled 896 lbs. On the 18th December it was still improving and showed a total gain of 98 lbs. in about six weeks while feeding with Molassine Meal."

W. J. EVANS, Three Burrows, Scorrier, Cornwall.—"Molassine Meal has been found of great value to milk cows, as it increases both quantity and quality, and vastly improves the color of the butter."

If you are interested write for special prices and information to

**J. H. MAIDEN, 425 St. Paul Street, Montreal**  
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Canadian Agent

**Alberta Lands**

**A Sunny Climate, Good Soil, Water  
and Cheap Fuel**

We have 80,000 acres for sale in the world-famed and fertile Battle River Valley—Easy Terms and Right Prices.

Would you like an improved farm near Didsbury? Only \$7.60 an acre.

Mixed farming land, 2 miles from school, church and post office, 17 miles from a large city. Only \$9.00 an acre. There are 800 acres in this piece.

Quarter Section, 160 acres improved for \$1440, nothing better in the country. THESE ARE SPECIALS.

**THE NORTH WEST REAL ESTATE CO.**  
CALGARY, ALTA.

# COMFORT SOAP "IT'S ALL RIGHT."

USE IT—For your own sake.  
 USE IT—For the soap's sake.  
 USE IT—For the sake of the premiums.

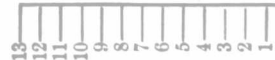
"COMFORT" is a pure, sweet, wholesome soap, dealing sudden death to dirt, without harming either tender hands or delicate fabrics. For wash-day, and every other day, you'll find it the quickest, easiest, CLEANEST soap you ever used. Take advantage of our liberal premium offers—cut the trade-mark from every "Comfort" wrapper, and save them to exchange for any of the handsome articles in this list that may please your fancy.



BEAUTIFUL RINGS

- B 2—Baby's Child's Gold-Filled Chased Ring.** Single stone setting. Fair quality, should last a couple of years. For 50 Comfort Trade Marks, or 10 Trade Marks and 10c.
- R 23—Gold-Filled Band Ring, set with three stones.** All sizes, Baby's, Misses' and Ladies'. For 50 Comfort Trade Marks, or 10 Trade Marks and 15c.
- R 131—Gold-Filled, three stones, Emerald, Ruby, Amethyst, Turquoise, or Opal.** For 100 Comfort Trade Marks, or 10 Trade Marks and 25c.
- R 187—Gold Filled, single stone, Emerald, Amethyst, Turquoise or Opal.** For 100 Comfort Trade Marks, or 10 Trade Marks and 25c.
- B 8924—Handsome Gold Filled, two stone Opals in twin setting.** For 50 Trade Marks, or 10 Trade Marks and 15c.
- R 9—Fancy Chased 14k. Gold-Filled Ring.** For 100 Comfort Trade Marks, or 10 Trade Marks and 25c.
- R 1722—Gold Filled, single stone, Emerald, Amethyst, Turquoise, Opal.** For 50 Comfort Trade Marks, or 10 Trade Marks and 15c.
- R 31, 33—Gold Filled Fancy Band Ring, Belcher setting.** Choice of Emerald, Ruby, Amethyst, Turquoise, Opal. Manufactured in Misses' and Ladies' sizes. For 100 Comfort Trade Marks, or 25 Trade Marks and 25c.
- R 26—14k. Gold Filled Ring, Tiffany Setting.** Choice of Amethyst, Emerald, Ruby, Turquoise. For 150 Comfort Trade Marks, or 25 Trade Marks and 50c.
- Ladies' or Gentlemen's Solid Gold Shell Oval Wedding Ring.** Manufactured especially for us, and guaranteed to wear five years with ordinary care. For 100 Comfort Trade Marks, or 25 Trade Marks and 25c.
- R 102—Solid Gold Shell "Princess" Ring.** Choice of Diamonds or Garnets. The stones are doublets, an exact imitation of the real gems, and will last a lifetime. Free for 200 Comfort Trade Marks, or 25 Trade Marks and 50c.
- Lady's Signet Ring.** Gold-filled, with two of your initials engraved thereon. Free for 100 Comfort Trade Marks, or 10 Trade Marks and 25c.

### TO GET THE RING SIZE WANTED.



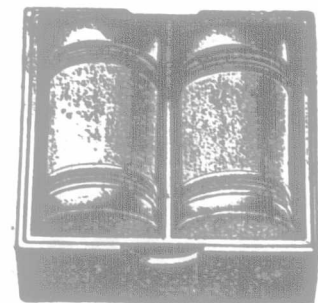
Measure with a piece of string around the second joint of the finger for which the ring is intended. Cut off the exact length of string which encircles the finger, and place one end at 4; the figure which the other end of the string touches will be the size of ring wanted. When sending for a ring, send that number, as well as the premium number of the ring desired.



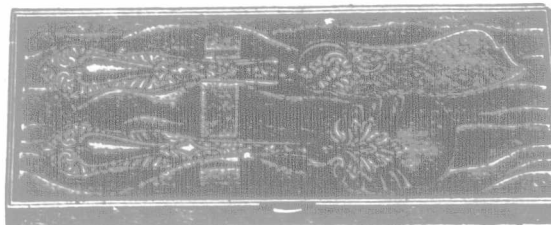
**Chased Silver Filled Chain Bracelet with lock and key,** for ladies or children, both sizes. Free for 100 Comfort Trade Marks, or 25 Trade Marks and 25c.



This **Serrated Bread Knife** free for 50 Comfort Trade Marks, or 25 Trade Marks and 10c.



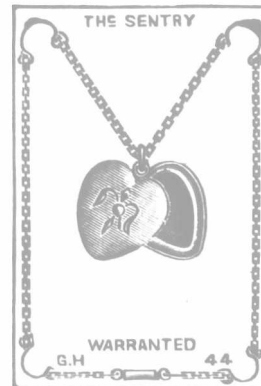
**Silver Salt and Pepper Shakers.**—The pair free for 50 Comfort Trade Marks, or for 25 Trade Marks and 10c.



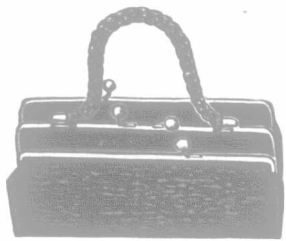
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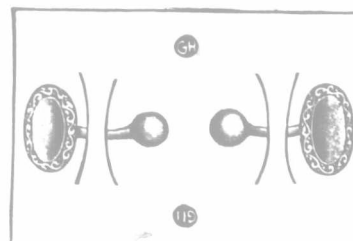
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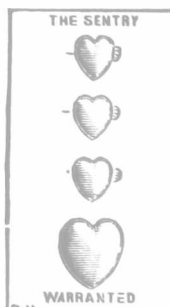
**T 44—Gold Plated Cable Link Neck Chain, with Roman Gold Charm.** Stone setting. Locket opens. Space for two photos. Free for 100 Comfort Trade Marks or 25 Trade Marks and 25c.



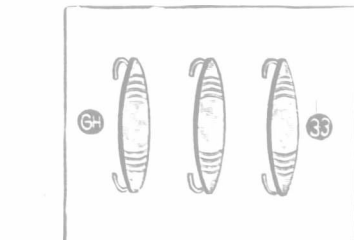
**No. 28458—Elephant Grained Ladies' Hand Bag.** 8 inch 4-balled frame; 2 compartments, 1 fitted with purse; moiré lined; braided handle; 4 1/2 in. deep. Free for 400 Comfort Trade Marks, or 25 Trade Marks and \$1.00.



**L 119—Rolled Gold-Plated Link Cuff Buttons.** Bright finish. Sent for 50 Trade Marks, or 10 Trade Marks and 15c.



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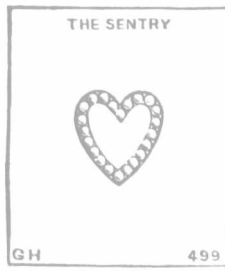
**A 33—Mother of Pearl Beauty Pin.** Three to each set. Set sent for 25 Comfort Trade Marks, or 5 Trade Marks and 10c.



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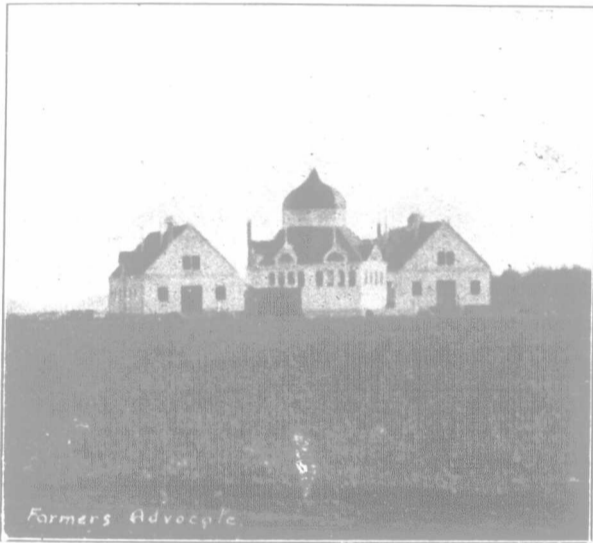
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**Manitoba Agricultural College.**

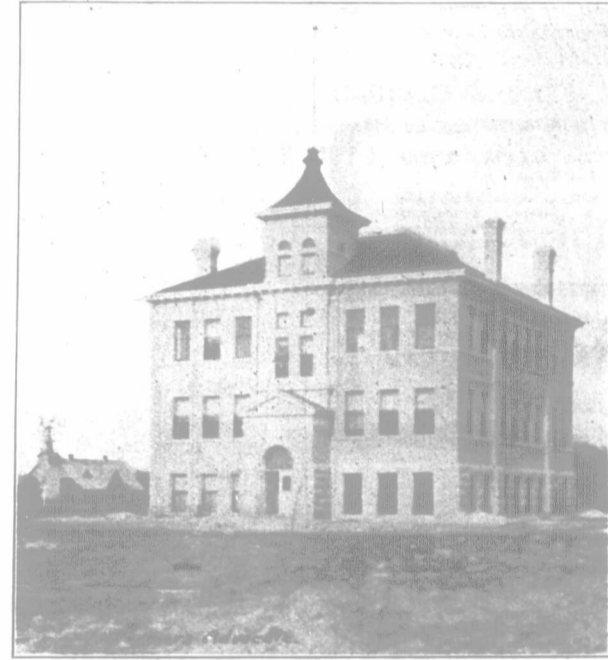
On this page we present illustrations of the buildings erected on the Manitoba Agricultural College grounds. They are located on the bank of the Assiniboine river about three miles from the heart of Winnipeg. At present the electric car tracks are being laid toward the grounds and the line will run between the college buildings and the stables. The main building is divided off into class rooms, offices, kitchen, dining-room, dormitories, and gymnasium and is the central edifice upon the campus. The dairy building is located behind and to one side of the main building toward the river. It is used for experimental dairy work, class room study, and for a time will be the abode of the natural science department. In time it is the intention of the government to erect a girls' building on the opposite side of the campus from the dairy school.

The stables are so arranged that horses and cattle will be kept at opposite ends and the large central enclosure used as a judging pavilion. A foreman's cottage and piggery are now in course of construction and the power house is already completed.

An inspection of the buildings convinces one that everything will be in first class order to proceed with practical and academic work by next November, when the college will enter upon its first year of agricultural education. Manitoba is particularly fortunate in her selection of teachers for the new institution. The professors are men of continental repute in their particular branches and are full of the enthusiasm of youth tempered by the discretion of practical experience. W. J. Black is principal and professor of animal husbandry; W. J. Carson is professor of dairying; W. J. Rutherford is professor of agronomy and Fred Torrance, D.V.S., is professor of veterinary science. A horticulturist will in all probability be appointed in the near future.



STABLES AT THE M. A. C.  
as seen from Principal's Residence.



DAIRY BUILDING  
M. A. C.



PRINCIPAL'S RESIDENCE  
M. A. C.

**Undesirable Hogs for Bacon Production.**

There are a number of classes of undesirable hogs being marketed for bacon at all seasons of the year. These include unfinished, overfat, prematurely finished hogs, and sows that have been used for breeding purposes. Of these the unfinished animals are most objectionable, and during the season of 1905 have been marketed in numbers out of all proportion to what they should be.

According to reports from a number of the large packing companies the proportion of unfinished hogs is increasing, running at times on the average as high as twenty one per cent. of the total receipts at the packing houses. This is a very serious matter from the standpoint of all concerned as such pigs dress poorly, giving a low percentage of carcass, and they make such inferior meat that the reputation of Canadian bacon stands in danger of serious injury if the present proportion of these pigs continues to go forward as bacon.

Why hog raisers persist in sending this unfinished stuff to market is not easy to understand, unless it is the comparatively high price of coarse grains which are necessary in finishing these animals, perhaps in some cases the fear that the high values for hogs which have prevailed for some time would suddenly drop. These, however, are not valid reasons when the injury such animals do the trade is considered. The "rass" or unfinished hog is a serious menace to the bacon industry and the time has come when the farmers, the buyers and the packers ought to co-operate against him.

One of the leading Canadian pork packers and exporters speaking of the objections to the unfinished hog says:—"He won't make good bacon; he is an unprofitable hog to ship alive, an unprofitable hog to slaughter and when he is made into bacon it is thin and tough and has to be sold at a heavy reduction on select goods." Another packer says:—"The thin unfinished hog is not a bacon producer at all and should be kept back and fed up until it weighs not less than 180 lbs. When thin sides are converted into bacon they invariably cause trouble as well as direct

monetary loss." Still another packer expresses his views upon the light hog. He says:—"The chief objection to unfinished hogs for bacon is that they shrink in killing about 5 to 8 per cent. more than when they are finished, which consequently makes the bacon so much dearer; and in the Old Country they do not want sides weighing less than 50 lbs. which means that the hog must be at least 160 lbs. and be in good flesh in order to produce 50 lbs. sides; anything below 160 lbs. makes bacon which is undesirable and hard to sell."

In England the buyers refer to the bacon from thin hogs as "skin and misery." Some of them have become very emphatic in their denunciation of it, stating that the bacon trade has already received serious injury from it, and the sooner it is stopped from being sent over the better it will be for the trade; if it continues to be sent as it has been for the past few months the trade will soon cease to exist. A hog that is too thin to make bacon of a desirable weight and quality is similar to any other inferior product inasmuch as it lowers the value of the better goods and seriously injures the trade to which it belongs.

**OVER-FAT HOGS.**

Notwithstanding the fact that the over-fat hog has been preached against for years by those interested in the development of the high-class bacon trade, and the fact that the price paid for these animals is frequently cut to the extent of one-quarter of a cent to one-half a cent per pound for live hog, the supply of overdone animals continues much too great more especially during the late fall and winter season. The demand for the pork from such animals is becoming less and less, and as a rule the bacon from such hogs will have to be sold at say an average of five shillings per 112 pounds less than prime lean.

fault of the breed to which it belongs, nor the character of the animal, but rather to the over generosity of the feeder who has kept his charge confined in close quarters and forced it along from an early age to the finished animal of short dimensions and insufficient weight at from four to five months old.

**SOWS.**

Too many of the cargoes of hogs that arrive at the packing houses contain more or less of sows that have reared one or more litters of pigs. These can rarely be used as bacon producers; the great majority are not bacon animals and never should be sent to market in "bacon" condition. As a rule those that are not too heavy are too thin in flesh and therefore may be classed as unfinished; and those that are well enough fleshed are too heavy to yield sides suitable for the bacon trade. The presence of so many of these sows in shipments of bacon hogs is largely due to the too common but unwise practice of turning off brood sows while still young instead of allowing those that are promising to remain in the herd as matrons for a number of years making good mothers of large litters. While it is true that some first litters turn out to be well doing, vigorous animals, the great bulk of them are not so strong as litters from older sows. To continue to breed only from these immature sows, turning them off after the first litter, is to perpetuate weakness rather than strength in the individuals of the herd which will in time show itself in a race of swine that are not good thrivers and are prone to ailments and weaknesses that will seriously interfere with profit-making in pig rearing. To market young brood sows in medium flesh is to injure the bacon industry both directly and indirectly—directly in lowering the average quality of our bacon, and indirectly in weakening the constitution of our bacon herds.

The question will arise, what is to be done with the animals that have outlived their profitable usefulness

in the breeding herd. It has been shown that it is not in the interest of the industry to turn them off as bacon animals. It is the animals of this class that may be depended upon to supply the heavy pork and lard trade and for this purpose they should be made thick fat. How to make them so at a profit is a question of importance. A thin sow placed in a pen and fed almost exclusively on grain will in all probability "eat her head off" before she is thick fat, but there are better ways of fattening such an animal. The diet of an old sow or "stag" should be composed largely of such cheap foods as mangels and sugar beets, if in season, or pasture crops such as clover, alfalfa, rape, etc., a vigorous sow or stag getting an abundance of any of these foods will gain rapidly and if given a moderate grain ration will soon be fit for the market.

The best time to place a thin sow in the "feed lot" is in early summer after her spring litter has been weaned and she has dried off. If turned on a luxuriant pasture and given a small grain ration gradually increasing it, she will as a rule in from 8 to 12 weeks be fat enough to meet the requirements of the market. While the gains made by such an animal have cost high per cwt. it should be remembered that she has given a profit many times over as a mother and it is the last hundred or two of gain that renders her entire carcass of marketable value.

**Immigrants Go to the Factories and Not to the Farms.**

Press reports from Toronto say that the bulk of the newcomers, allured by the higher wages offered by manufacturers are going to the factories rather than to the farmers, who however, have offered \$25 a month and board. It would seem that the solution of the labor difficulty on Ontario farms is to "raise more children" on the farm and bring them up so that they will not want to leave the farm homes of the country. It is lack of proper knowledge and in some cases faulty bringing up that drives the child from the farm to the town.

There is a demand for bacon made from these light well finished pigs but it is so limited that there is always danger of an over supply when the price is sure to fall several shillings per cwt. and the stock becomes a drag on the market. The pig of this class is not the



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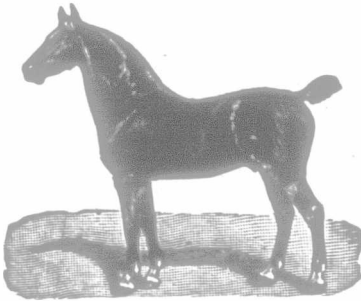
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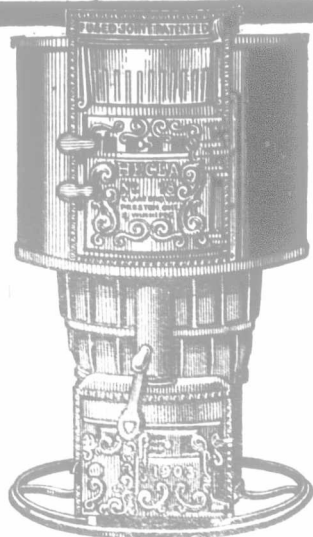
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## AN ARTIST'S FREAK.

AN ANECDOTE IN THE LIFE OF A  
GREAT MUSICIAN.

About the close of the month of September, in the year 1832, all the artistic world of Paris was shocked by a most distressing report. From mouth to mouth, and from house to house, the ill tidings travelled, and nowhere were they related but with the profoundest regret. A morning paper announced that Nicolo Paganini, the finest violinist the world had ever seen, had been taken suddenly and seriously ill at the conclusion of one of the concerts of which he was the brilliant star and sole attraction. Both amateurs and artists at first were ill-inclined to put much faith in the paragraph, consoling themselves with the reflection that with great men such reports are frequently exaggerated, and sometimes entirely erroneous. Unfortunately, the report was only too true. Paganini had been "burning the candle at both ends." An intermittent fever, such as often attacks overworked men with slender constitutions, had got the great artist in its grasp, and gave occasion for serious uneasiness on the part of his medical attendants. Paganini, whose emaciated condition was proverbial, only seemed to live by mere accident, and now there was some anxiety lest his frail and nervous frame should give way under the fierce attack of fever.

The doctors put their heads together, and unanimously prescribed perfect rest and a wholesome and strengthening diet.

On the following day to that on which the newspaper paragraph appeared, Paganini was installed as an inmate of a celebrated private hospital in the outskirts of Paris. At the time of which we are speaking, this Villa Lutetiana, as the place was called, had a certain reputation of being frequented by patients of distinction. To the principal house of the establishment, which was a roomy and most convenient one, was attached a charming garden, looking over a pleasant and well-wooded park.

One of the principal features of the establishment was to give every patient his entire liberty. Each inmate lived there as he liked, dining either in his own apartments or in the large hall. When the evening came, those who were fond of conversation or a game of cards, betook themselves to the public drawing-room; there was the garden and a romantic avenue for those who wished to get as much fresh air as they could; while, of course, for those who enjoyed perfect quiet and a cosy perusal of the latest romance, no better place could be found than their own private apartments.

Paganini was notably a man who loved shutting himself up, and being of a particularly nervous disposition, was glad to get away to his own room, and to be free from the chattering and buzz of conversation, which was, of course, inseparable from the public salons.

But this isolation of his was not appreciated by the majority of the guests. They had got a great lion among them, and no doubt wished to make the most of him. The uncharitable remarks made about the unfortunate fellow behind his back were as amusing as they were contemptible. There were four or five old ladies at the establishment who were particularly noted for picking the poor man's character to pieces.

"Have you seen this great genius, my dears?" one would say. "If you have not, I am sure it is not such a very great loss. He is a perfect bear. He never takes any notice of anybody, or exchanges a syllable with a soul. When he does appear among us, he sits in the remotest corner of the room, or away

in the most secluded part of the garden, and never fails to creep away if by chance any one approaches him. If these are manners, I don't think so very much of them."

"Oh, but you don't know," another would remark, "there's a mysterious story about him. They say that he leads a most melancholy and distressing life. Some love affair, you know, which no one dares allude to."

"Ah, but that has really nothing to do with it," a third, naturally wiser and better informed than the rest, would chime in. "Paganini is a miser. It's an undoubted fact. There is no secret whatever about it. Don't you remember that concert that was given the other day for the poor creatures that were turned out of house and home by the inundations? Well, he refused to have anything to do with it, and they say it was because he makes a rule never to play for charities. Not like the majority of professional people, is it? But after all, only look at the man's face. What more could you expect?"

These charming little ebullitions of feminine caprice, based literally upon nothing, were duly committed to memory, and innocently and artlessly conveyed to the ears of Paganini. Who could have been his informant? Well, we shall see that by-and-by.

Paganini, notwithstanding what he heard, never in the slightest degree altered his mode of living at the Villa Lutetiana. He lived entirely to himself, walked alone among the trees of the avenue and in the park, content with the pleasure of reading and re-reading a packet of old letters, which packet was day by day increased. There was one kind friend, at least, who did not forget the poor sick man.

With the aid of much sleep, and the benefits of this quiet and regular life, Paganini, little by little, gained back his health and strength.

It is not quite correct to assert that his life was quite a lonely one. There was one bright ray of sunshine which lighted the almost dreamy darkness of each day Paganini spent in the Villa. The artist had one friend, and one friend only in the household—Louissette.

"Who was Louissette?" may well be asked. The answer can soon be given. Louissette was a sparkling, pretty little damsel, fair-haired and silver-voiced, whose duty it was to attend to the patients. Paganini's quick eye soon detected her, and he made a special request that Louissette might be his sole attendant. Louissette was devoted to her distinguished master, and Paganini took an extraordinary interest in Louissette. Every morning, when she arranged his breakfast, she amused him with her imitations of the peculiarities of various people in the Villa, and detailed to his intense satisfaction, all the ordinary gossip of the place. All the smiles that lighted up Paganini's face during his banishment were flung there by Louissette.

One morning Louissette came in as usual, but all her gaiety was gone. The musician, who was busy carving out a paper-knife from a block of ivory, saw at once that something was amiss.

"Why, Louissette, my child, what is the matter? I can see by your red eyes that you have been crying. What has happened?"

"Something dreadful, sir."

"Nothing so dreadful that it can't be got over, I suppose."

"Well, sir, I don't know; I hardly like to—"

Paganini fixed his large black eyes full upon poor Louissette's face.

"Ah," said he, without removing them, "I can guess what is the matter with you. A love affair, I suppose?"

Louissette did not answer. She only blushed very deeply, and that was quite sufficient answer for Paganini.

"Come now, my poor child, tell me all about it. Perhaps I shall be able to do something for you."

Louissette dried her eyes with the end of her little apron.

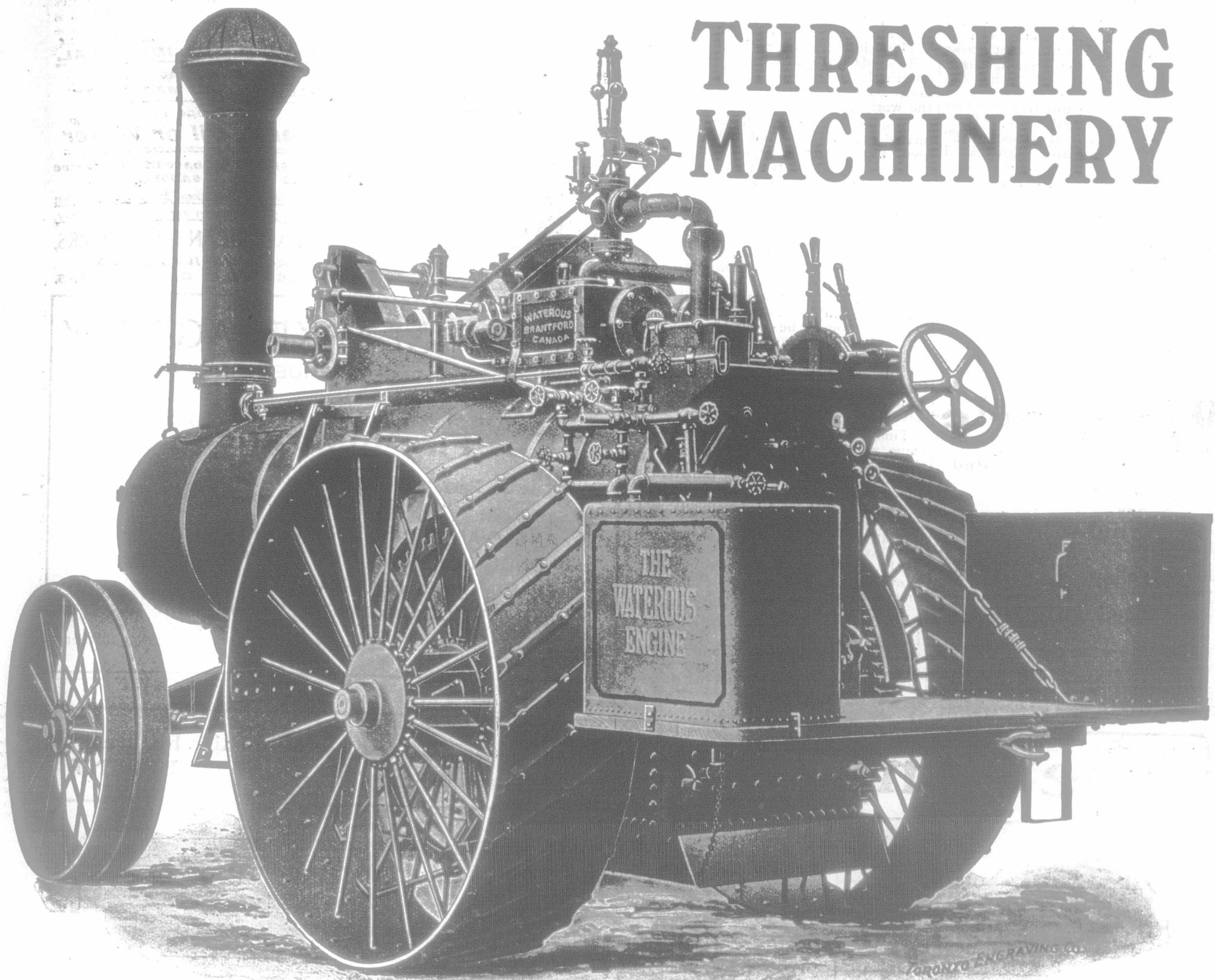
"Well, Louissette," continued he, "is it the old story? Broken promises, faithless swain, and pretty Louissette in tears—is that it?"

"Poor Henri," sighed Louissette. "Yes sir, he has left me, but it was not his fault, poor boy."

"How so?"

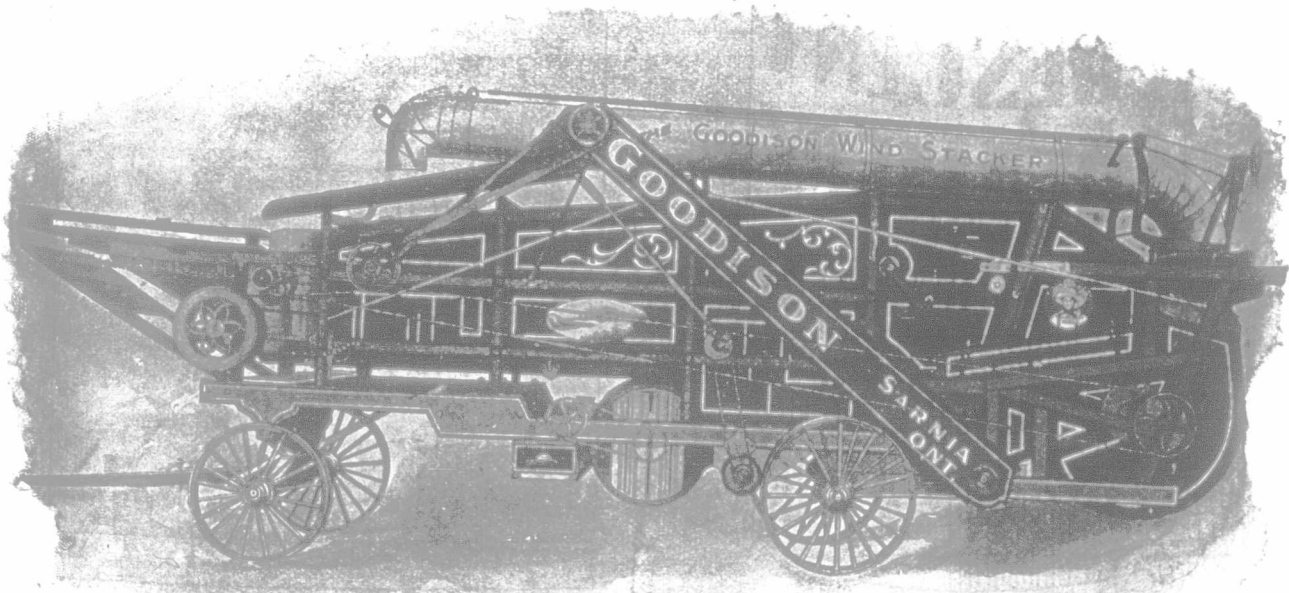
"Henri has just turned twenty one, sir, and he was obliged to draw for the conscription. He drew an unlucky

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number, they have taken him away, and now he is miles and miles from here on guard at Lille, with a musket across his shoulder. This is grief enough for a poor girl, is it not, sir? But what can I do?"

"Can't you get a substitute?" Poor Louissette smiled sadly. "You are laughing at a poor girl," said she. "A substitute! How can I afford that?"

"How much would it cost?" "Oh, ever so much this year, as there is a chance of war. I could not get any one under fifteen hundred francs."

Paganini took Louissette's hand in his, and pressed it affectionately.

"If that is all, Louissette," said he, "You may dry your tears. I'll get you fifteen hundred francs somehow or other; trust in me, and we will see what can be done."

When he had said this, Paganini made a note on his tablets. This is

what he wrote: "Remember to give a concert for Louissette and her lover."

Time slipped away, and winter came. Towards the end of November, Paganini's doctor said to him, in reply to his question as to when he might go into the world again:

"We must not undo all the good we have done. I can't think of letting you away from here till the spring."

"Very well, doctor," said the artist, "I suppose I must obey."

Paganini continued to live the same humdrum sort of existence. He mixed no more than he had ever done with the other inhabitants of the Villa, and Louissette's conversation was still his only amusement. His promise to the poor girl in the matter of the fifteen hundred francs was still constantly in his mind, and he determined that the very first moment he could depend upon his strength, he would carry out his project.

"In the course of the winter I shall be able to manage it," thought he: about January or February, I will get them to advertise a concert."

Time wore on, and Christmas Eve came, with its kindly glow of charitable thoughts and happy faces. All was much the same at the Villa Lutetiana. Indeed, in some respects, where at such a season of the year there might well have been some improvement, none was at all visible. The old ladies gossiped as much as ever over their coffee in the drawing-room, and were hardly more charitable than when they were first introduced to us.

In France there is a charming custom—not unlike in many respects to a certain old-stocking English theory—most cherished by children, and held in great veneration by all Parisian families. On Christmas Eve, an old shoe—

or "sabot," as they call those heavy wooden clogs that the peasantry of France delights in—is placed in the chimney-corner when every one retires to bed. The fancy is that when all is hushed and quiet for the night, some

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Fig. 31

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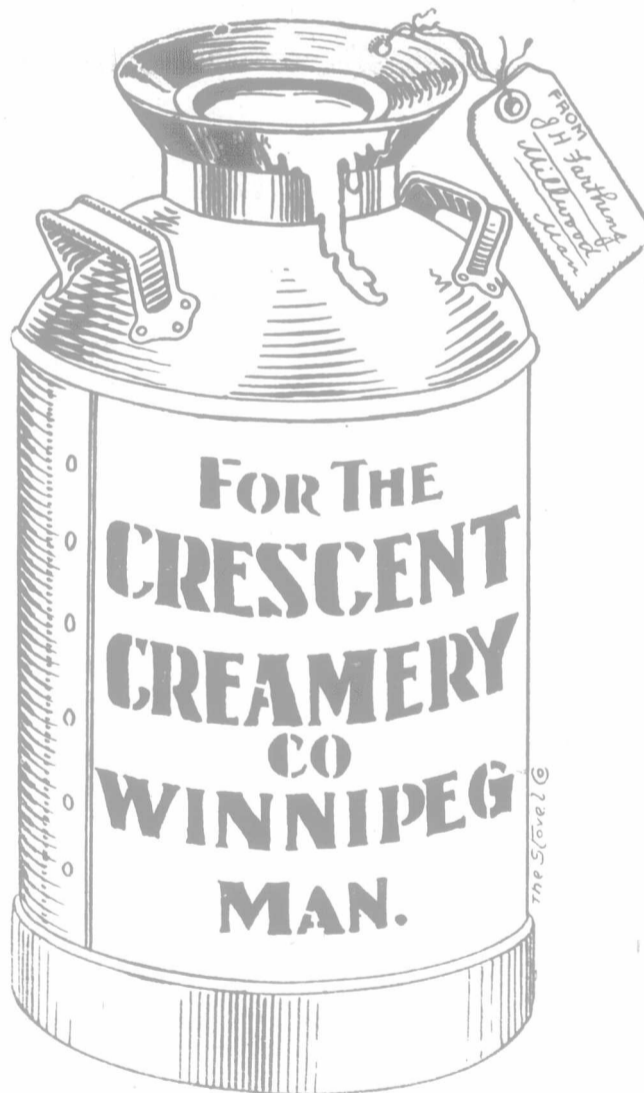
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**BEFORE**

I work and dig and scrub each minute.  
 And then I find there's NOTHING in it.  
 I must look round and try to find  
 Some way to dodge this daily grind.

HE GAVE US A  
 TRIAL COSTING  
 NOTHING.



**AFTER**

I'm glad I've hit the proper scheme,  
 I skim my milk and ship my cream.  
 I hear the chugging churn no more,  
 Yet, make MORE money than BEFORE.

MORAL—  
 EACH DAIRY CAN  
 BE MADE TO PAY  
 IF YOU ONLY FIND  
 THE PROPER WAY.

When in Winnipeg Inspect Our New Creamery

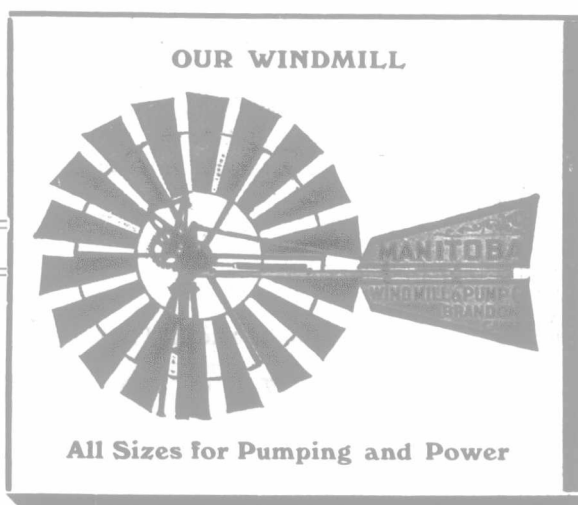
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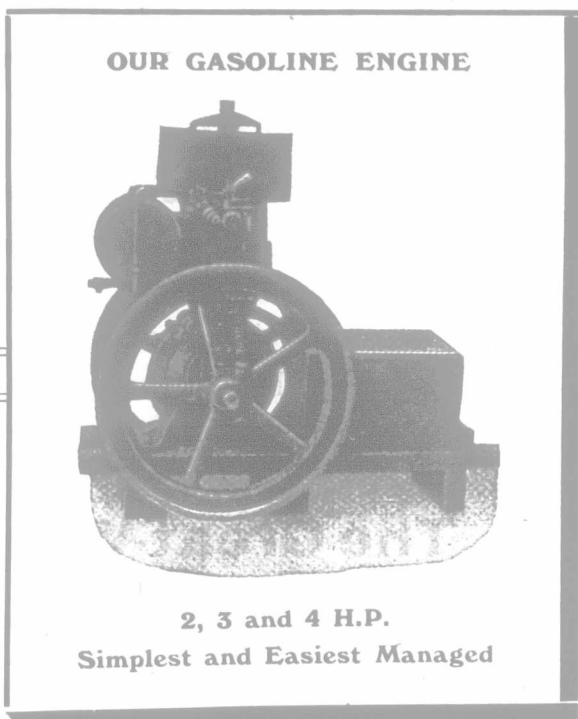
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Grain Elevators  
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City call upon us at our magnificent factory,  
far and away the best in the West . . . . .

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Limited

Box 301

BRANDON, MAN.

good-natured fairy comes tripping down the chimney laden with toys, bon-bons and other childish delights, which are duly deposited in the wooden shoe, all ready to receive them. There are very few French children who do not wake at daybreak on Christmas morning and scamper, bare-footed, into the sitting-room, to see what the fairies have sent them.

Over their breakfast, on the very Christmas Eve to which we are now alluding, those charitable old ladies who were so fond of saying spiteful things about Paganini, discussed with some vehemence the wooden-shoe custom, which was supposed to have been slightly lost sight of. They were evidently hatching some plot, for they chuckled grimly to one another, and were noticed to leave off talking altogether if anyone accidentally approached their charmed coterie.

"You are quite sure it is all arranged for this evening?" said one.

"Don't you fear. Keep your countenance, and all will be right," was the answer.

And so the day passed quietly away, and no further allusion was made to the wooden-shoe controversy, the old maids' plot, or Paganini's whims and oddities.

After dinner, in the evening, Paganini was sitting in a quiet corner of the drawing-room that he loved, reading a novel and drinking a cup of coffee. The old maids were at their whist and their scandal. Suddenly was heard a noise, as of voices in dispute, outside the room which made the old ladies prick up their ears, but which did not appear to have the slightest effect on Paganini.

"What can all this disturbance be about?" asked one of the whist party.

Louissette here made her appearance and gave an answer.

"Please, ladies," said she, "a porter has brought a large box, and we don't know what to do with it."

"Who is it for?"

"The address is so badly written that none of us can tell."

"Then you had better bring in the box."

Louissette, with the assistance of the porter, proceeded to do so. It was a large wooden box, securely fastened, and on it was written in very large letters, "With great care." Under this direction, but in much smaller letters, were the words, "For M. Nicolo Paganini."

"What made you say that the address was badly written, Louissette?" said a harsh-featured, wizend old lady, a martyr to gout and bad temper. "It is as plain as can be. The box is for our illustrious companion."

Paganini still paid no attention to what was going on. He was intently occupied with his book, and did not heed the old ladies and their tittle-tattle.

He started at the sound of Louissette's voice. She came to his side and spoke to him.

"Monsieur Paganini, here is a box for you."

"A box? What box?"

"The box which the porter has just brought in, and which the ladies have been talking about."

"I heard nothing. Let me see what it is."

He swallowed his coffee, and went towards the porter, who was still standing sentinel over the treasure.

"Where did you bring this from?" said Paganini.

"From the bureau, sir. I know nothing about it, except that it is said to have been forwarded from Orleans or Lyons."

"That is very strange," said Paganini; "I don't know anyone in either town. Who on earth could have sent it?"

"Well, that does not so very much matter, monsieur, does it?" said Louissette, softly. "The box is directed to you, so I suppose it is yours. You will take it in, will you not?"

"Certainly, Louissette, and we will see what it contains."

Paganini paid the porter and dismissed him.

"Shall I take the box up to your rooms, monsieur?" said Louissette, evidently in a very curious frame of mind.

"No, we will open it here," said Paganini, looking directly towards the whist party, who appeared to be intent on their game, and entirely oblivious of Paganini and his box.

The process of opening was easier said than done. After the lid of the box had been wrenched off almost angrily by Paganini, there was much to be done before the contents were visible. Wadding after wadding of hay was followed by roll upon roll of paper. Each separate covering of paper was secured by enormous seals and intricate twines of string.

"Well, what is after all that padding?" said one of the old ladies, who could not conceal her impatience.

There were still more coverings to be unbound and unsealed before anyone's curiosity could be gratified.

At last the most secure fastening of all was cut, and Paganini held up to the astonished company—a wooden shoe!

"Is that all?" tittered the old ladies, with an injured air. "We need not have stopped our game for that."

"Only an old shoe, after all," sighed Louisette, who ill-concealed her disappointment.

"Only an old shoe, after all," repeated Paganini, with marked emphasis, and without taking his eyes from the quartette at the whist table. "A very good practical joke, no doubt, and one that must have caused its promoters a vast amount of amusement. This present has been sent me as a direct allusion to and a taunt upon my supposed avarice. I can see through it all. A present of a wooden shoe on Christmas Eve is sent to Paganini, in order to compare him to the little children who are always asking for presents, and are seldom liberal themselves. It does not require much intelligence to see through this feminine jest. But never mind, the concoctor of this scheme meant me to believe that this box contained a present of great value. He or she, whoever it may be, shall not be disappointed. I tell you, Louisette, and every one here assembled that not many days shall pass before this old wooden shoe is worth its weight in gold."

Paganini was strangely excited, and every one in the room looked at him with astonishment. They did not understand what he meant, but they felt, somehow, that he would keep his word.

Three days passed away, and Paganini never appeared in the day time, or took his accustomed seat in the drawing-room after dinner.

Louisette was asked the reason and her answer was that Paganini was not as well as usual, and was obliged to keep his room. Even Louisette did not know the real cause of his absence. She had seen him, it is true, hour after hour, at work with knife and chisel and the sharpest instruments, and she had heard that at feats of dexterous carpentry the great violinist was almost without a rival; but she did not know that, by dint of patience and exquisite ingenuity, the old wooden shoe which she had seen taken out of the box on Christmas Eve was being changed into a violin which in tone and finish would not have discredited Amati.

Paganini's labor was rewarded. He gave the old shoe a soul, and the world was to hear the result.

Very soon blue bills, placarded on the walls of the Villa Lutetiana, and liberally distributed all over Paris, announced to the world that a concert would be given on New Year's Eve, at which Nicolo Paganini would make his first appearance after his serious indisposition. The popular artist promised to play ten pieces, five upon an ordinary violin, and five upon a wooden shoe. The price of admission was fixed as high as twenty francs a head, but it was added that the proceeds would be added to a charitable purpose.

The good news of Paganini's recovery and speedy reappearance spread like wildfire in Paris. For three months past hardly a soul in Paris knew what had become of the illustrious artist. The whole musical world indulged in transports of joy, and it is needless to add that a few hours after the announcement appeared, not a ticket for the concert was to be had for love or money. Paganini had given strict injunctions that only a certain number were to be sold. The largest theatre in Paris could have been filled over and over again, but he had set his heart upon playing in the Villa Lutetiana.

There was an element of what we should call "sensation" about the whole affair of the artist. A concert in an elegant establishment like this villa,

given by one of the most distinguished of all artists after a three months' absence—variations first upon a violin, and then upon a shoe—these were the items of gossip discussed over and over again, until the long-looked-for New Year's Eve came at last.

The carriages of all the notabilities in Paris thronged to the gates of the Villa Lutetiana, and amidst a hush of breathless excitement, Paganini, violin in hand, made his appearance in the room.

There was not a trace of his recent illness left. He looked as young again as when he had isolated himself from the world. With one bright smile at the recognition he received, and with but little preface, he dashed at once into a brilliant fantasia, and, quite lost in the fury of his art, he literally intoxicated his audience with his magic power.

"He cannot improve upon that," they said. "He never played better in his life."

Prepared, however, for any prodigies of skill from one who had previously done what no living man had accomplished on the violin, the dilettanti waited in an agony of excitement for the variations on the "sabot."

After a short interval Paganini reappeared with the treasure in his hand. A silence that was almost terrible, and then from the new instrument poured forth sounds so sweet as to draw tears from the eyes of almost every one in the room. The artist seemed to be carried away by the excitement he was causing, and put his whole soul and grand intelligence into the musical drama he was reciting. There could not be a doubt about its meaning. It was the return of the conscript. There was the roll of the drums, the excitement of military life, the pang of pain at the soldier leaving his companions, the loneliness of the journey, the approach to home, the meeting of the lovers, the tears of joy and ecstasy of indissoluble happiness.

A burst of wild applause greeted the last brilliant passage of Paganini's almost superhuman effort. Again and again did the villa ring with the excited cheers of the audience. The ladies flung their bouquets at the artist's feet, and the men rushed up to him and seized him by the hand.

Even the four old ladies who had composed a certain whist party, to which allusion has before been made, could not refrain from the general excitement which was around them.

"It is simply magnificent," they said; "we should not have judged him so harshly. He must have a good heart."

Up in a corner of the salon, half hidden by a curtain, stood a simple little girl. She was crying as if her heart would break. It was Louisette.

The drama of the conscript's return had gone straight to her heart.

The concert was a magnificent success and when it was all over they totalled the receipts.

They amounted to two thousand francs.

And then Paganini called Louisette to his side.

"My little friend," said he, "we have been lucky enough to obtain five hundred francs more than was required to procure a substitute for Henri. Take all the money. What is over will do to defray Henri's expenses on his way home."

Louisette could not keep back the tears of gratitude which came welling to her eyes. But Paganini took her kindly by the hand and said:

"You have been an affectionate and faithful little handmaid to me, and you, too, must have your reward. I will give you something to start in life with. This old shoe—perhaps you will like to call it a violin now—is yours; I always intended that it should belong to you. You can dispose of it as you think fit, and I cannot help thinking that it will realize sufficient to give you a handsome dowry."

Paganini was quite right. A wealthy Parisian amateur purchased the instrument of her, and the price he paid for it was six thousand francs.

And so Louisette got back her lover from the way through the instrumentality of Nicolo Paganini. The kind part this famous violinist played in the matter must ever rebound to his advantage, however much it may be considered "An Artist's Freak."

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A Fruit Farm of 45 acres, consisting of 600 fruit trees bearing and small fruits. About 35 acres under cultivation; soil, black loam, with clay sub-soil. Good nine roomed dwelling and barn, 30 x 90, with lean-to. Price \$6,500—\$4,000 cash and balance on mortgage at 6 per cent.

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with rigid cartilages, but are we right in doing so? Because if a sidebone is forming there is hereditary taint in that animal almost to the same extent as if the cartilages were ossified and immovable. Still the fact remains that we are anything but agreed on this point.

As to unsoundness generally, we naturally cannot all expect to see things in the same light. That some definite guidance ought to be offered us on points of difference which frequently occur is certainly my opinion, especially with a view to helping the young practitioner, who errs too much on the side of safety I am sure; perhaps not having sufficient confidence in his own judgment. We must not forget we have a very responsible position to perform. Purchasers imagine that if a horse is passed as sound by their veterinary adviser they have a positive assurance of the horse being all right at the time of purchase, and a sort of guarantee that when they come to sell the animal he will pass sound again, but when another opinion is taken on re-sale they often find they are mistaken."

Especially are the above sentences worthy of cognizance when one hears the authoritative pronouncements of the so-called 'expert' judge at fairs.

#### BUNT OR STINKING SMUT.

Mr. G. H. Clark, Seed Commissioner, Department of Agriculture, Ottawa, in his evidence before the Parliamentary Committee on Agriculture, June 4th and 5th, ultimo, presented at the request of the Committee a statement re the condition in respect to bunt or smut of the wheat crop in the Provinces of Manitoba, Saskatchewan and Alberta.

Mr. Clark showed representative samples of smutted wheat, as loaded in the cars at point of shipment, and also the same grade after being elevated, and explained the methods of cleaning and scouring at the lake fronts. This cleaning process cost from 2 to 3 cents per bushel, in addition to the shrinkage of from two to five per cent. in weight. The value of wheat that has been scoured for smut, ranges from three to five cents per bushel less than it would have been had it not been smutted.

From 1905, to March 31st, 1906, 46,890 cars were inspected at the Winnipeg Inspection Office, of which there were 2,834 rejected I, and 3,361 rejected II, or 13 1-16 of the total crop, which is a larger aggregate than the six previous years combined.

In considering the causes for this outbreak of stinking smut in the 1905 crop, he attributed it to the use of weak and shrunken seed from the rusted crop of 1904, to the prolonged cold though moist weather during the early spring of 1905, and to the depreciation in the inherent vigor of the wheat crop, taking the crop as a whole, due to the use of wheat for seeding purposes that had been cut before it was fully ripened.

In some instances, too early seeding and too deep sowing, increased the danger from smut. Smut is capable of attacking the plant only during the very early stages of growth, and before the wheat plant has developed a green leaf. Any factor which tends to weaken the vital energy of the seedling, or depreciate the inherent vigor of the plant, renders it much more susceptible to such diseases as smut and rust.

In the hard-wheat belt of the Provinces of Alberta and Saskatchewan he had found, in almost every smutted crop examined that a large proportion of the heads which carried smut balls were comparatively weak plants which produced only one head of grain, and in many of these heads not more than two-thirds of these grains were displaced by smut balls, the upper portion of the head, as a rule, containing apparently sound grains of wheat. Although it was not definitely known whether grains from diseased plants were capable of perpetuating the disease, despite treatment effective in destroying the vitality of the smut spores attached to the grain, he was of the opinion, which is borne out by the results of experiments with the use of rejected wheat after being carefully treated, that Western farmers have small hope of entirely eliminating the disease, if they continue to use seed wheat taken from a smutted crop, no matter how effectively they treat their seed.

Mr. Clark stated that, while much could be done to maintain the vigor of the crop and the yield and quantity of the wheat by the use of the fanning mill, a much further step in advance is the practice of providing each year ten acres or more of the best and cleanest land on the farm to grow pure seed. This seed wheat should be allowed to get fully matured before being cut. The practice, also, of selecting perfect heads, true to the desired type and variety, to furnish seed for a breeding plot or base of supply of pure seed, has proven a practicable and profitable means of keeping varieties pure, and also increasing the yield and improving the quality of the grain.

Re the treatment of seed to destroy stinking smut, he advised the hot-water treatment where practicable, as it does not impair the vitality and vital energy of the seed to the same extent as poisonous solutions. The wheat should be immersed in water ranging from 132 to 135 degrees F. for five minutes. A solution of copper sulphate, 1 pound dissolved in 8 gallons of water, has given apparently satisfactory results, although it is not known definitely exactly what strength of solution is necessary to kill the spores that are in contact with it for five minutes.

One pint of formalin to 25 or 30 gallons of water, is an equally cheap and effective remedy, and he believed it would largely succeed bluestone as a smut preventive within the next five years. The effect of poisonous solutions such as bluestone or formalin on the vitality of the seed and the vigor of the plant, renders the use of such preventives a choice between two evils, of which the lesser is recommended. Farmers in the West have, however, in their anxiety to overcome the pest, been using too strong solutions, thereby not only diminishing the vital energy of the seedling, but actually killing an unnecessary percentage of the seed.

Referring to the Seed Control Act, Mr. Clark stated that it was having a wholesome influence in encouraging the production, sale, and use of clean seed. The discrimination, ranging from 50c. to \$2.00 per bushel paid to the farmers for grass, clover and other seeds, in favor of the clean article, would have a good effect. The quality of seeds offered by the retail trade had been much improved since 1902.

Official seed inspectors, who are the district representatives of the Seed Branch, had visited most of the seed merchants in all of the provinces during the past three months. About fifteen cases of violation of the Act are now under consideration.

Outlining the general plan to improve the Western wheat crop by the use of better seed, detailed information was given of arrangements with agricultural societies, by which the latter furnished substantial prizes for fields of 10 acres or more, to be judged before harvest, and from the viewpoint of seed purposes. In providing funds for seed fairs, of which 27 were held in the province during the recent winter months, the officer of the Seed Branch located in the West would have direct charge of the work, and supply competent judges for the field competitions, and judges and lectures for the annual seed fairs. These field competitions will be judged by score, according to the following scale of points:

- Suitability of variety, 10 points.
- Freedom from weeds, 25 points.
- Freedom from other varieties and other kinds of grains, 20 points.
- Freedom from the attacks of rust, smut and insects, 15 points.
- Vigor of growth and uniformity, size of head, strength of straw, and apparent yield, 20 points.


The Provincial Department of Agriculture for Saskatchewan and Alberta have arranged to give an additional grant to each agricultural society conducting these field competitions.

#### OH, MEMORY!

There is no doubt that the tying of a piece of string round the finger is a really good aid to a poor memory; but there is a well-authenticated case of a man holding a piece of cotton around his finger in the morning to remind him to get his car out. On the way home to dinner that evening he noticed the piece of cotton.

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A common furnace may cost you \$5 or \$10 less than a "Sunshine," but if it eats this up the first winter in extra fuel, what do you gain? Nothing, but all the annoyance and extra work that go with a poor furnace.

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## McClary's

LONDON, TORONTO, MONTREAL, WINNIPEG, VANCOUVER,  
ST. JOHN, HAMILTON.

"Ah, yes, I remember!" he said, and smiling proudly, he entered the accustomed shop, and sat down before the accustomed artist.

"Er—yes, sir?" said the artist, puzzled inquiry in his tones.

"Eh—oh, yes; cut my hair, please," commanded the absent-minded one curtly.

"Why, certainly, sir, if you wish it," said the artist. "But you won't mind my mentioning the fact that I cut it this morning, will you?" *Evening Mail.*

#### EVERYTHING.

In a little New England village lived a lawyer famous for drawing wills, in which branch of business he had long enjoyed a monopoly of the business of the county.

On the death of a certain respected citizen there was much speculation as to the value of the property, and the village gossip undertook to find out the facts. He hunted up the lawyer and said, rather bluntly: "I suppose you made Blank's will?"

"Yes."

"Then you probably know how much he left. Would you mind telling me?"

"Not at all," replied the lawyer, deliberately. "He left everything he had."—*Sci.*

The following extract is from the report of Superintendent Macdonel, D.S.O., Battleford:

"The following case came to my notice as illustrating how diametrically opposed to a white man's views an Indian's may be. An Indian at Onior Lake was sentenced to one month's hard labor at Battleford for lodge roling his squaw, having pleaded guilty to the charge. He appeared an intelligent, hard-working, decent young fellow, so when signing his release I said, "Well now you are free mind you don't beat your squaw any more." He replied, "I never beat her at all; it was my mother-in-law gave her daughter a bad beating, and my father tell me that if police come I must say I did it, because it would be shameful to let my mother-in-law go to jail." So I did." I wonder how many white men would miss the chance of locking up their mothers-in-law, by saying nothing of taking the punishment on their own.


#### LITERARY TONICS.

How many persons ever think of the medicinal properties of the cheap editions of literature that we are blessed with now-a-days? Yet there is often wonderful curative power in a well chosen bit of fiction or book of verse. People will rush off to the doctor or fly to the chemist and spend money on patent medicines, when instead they ought to patronize the bookseller. Nothing serves better to turn one's thoughts from worry than a good novel or a volume of ethics, requiring thought and study.

In the treatment of diseases, especially those nerve troubles that vex our fast-living generation, literature is beginning to figure largely, and now it is not an uncommon thing for physicians to prescribe special reading for their patients. In books—bright books, right books—lie many a sufferer's hope. Melancholia even might give way to the influence of a story such as "Three Men in a Boat," and as much good be derived in this way as harm has been wrought to sensitive nerves by the reading of extravagant and gruesome fiction.

It seems to me that in our reading we make a mistake in trying to keep up with all the latest fiction, instead of finding something that will revive the sense of humor or convey an impression of fresh fields and new-found friends. The lightened mind will almost invariably react beneficially on the jaded body. The heavy mental worker will find a solace in Longfellow's poems. After a day of fever and fret he picks up his volume and perhaps reads "The Day is Done," and the lines that are steeped in the spirit of twilight's quiet, fall on the wearied spirit like the touch of a cool hand on a painracked forehead. Here is medicine indeed. Prescriptions could be given in multitude. An ailing small person might be pleased with Lewis Carroll's "Amusing Fancies"; a tired woman-patient lost in her own concerns, should have the genial "Mrs. Wiggs of the Cabbage Patch" introduced to her. The library is the best possible chemist's shop. Books may be better than bottles. *—St. Stephen's Club Paper.*

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THE ALABASTINE COMPANY, LIMITED, PARIS, ONT

**THE PROCESS OF DIGESTION IN CUD CHEWERS.**

The cow and sheep are ruminating animals, and, their natural diet being herbage, we find the digestive apparatus adapted to deal with bulky and relatively indigestible materials. Improvements in stock feeding have led to great changes in the nature and composition of food stuffs, and perhaps our breeders may in the distant future evolve animals capable of thriving on a diet of purely concentrated food. Until this end is attained we must not tax nature's patience too heavily in this connection. It is quite evident that the digestion of hay, straw and chaff is an expensive item in animal nutrition. Much energy is wasted on a great mass of useful vegetable tissue. The up-to-date stockman must supply a ration of the greatest concentration, consistent with the proper performance of the digestive functions. It is a well-known fact that sheep and cattle must be supplied with bulky food, but this fact should not deter our expecting one day to see the homestead stocked with sheep and cattle able to put on flesh rapidly on a diet of compact, rich substances alone. The hope is not a futile one. We have

seen wonderful instances of evolution in the development of farm animals, and the power of un-inheritance is gradually diminishing the traces of those conditions which nature deemed compatible with a wild and insecure state of life.

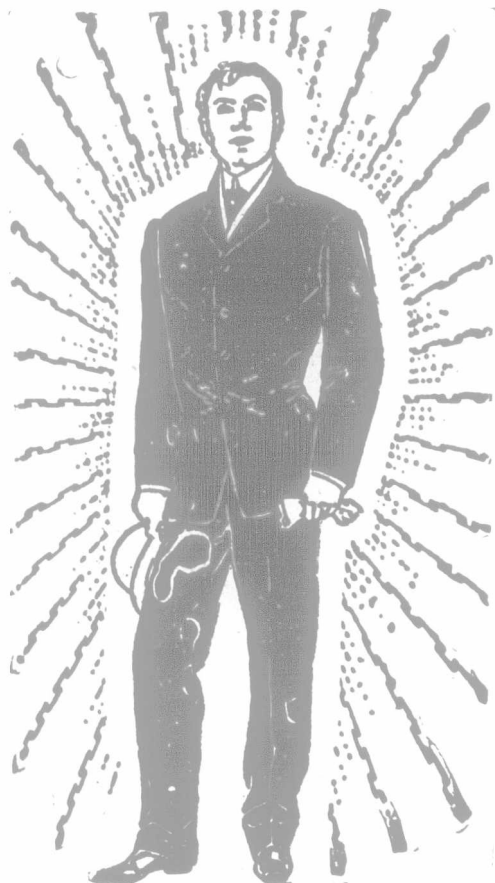
There is a vast difference between the wild cattle of Chillingham and the modern Shorthorn—a creature of evolution, and the man who proposes to breed and feed high-bred stock must possess some intelligent notion of the structure, functions, and requirements of the specialized animal machinery he controls. Otherwise he may undo the work of centuries. Old time method must be abandoned as they only lead to disastrous and, in many instances, fatal results. Bad management continued over a few years will convert a herd of valuable stock into a state of original mediocrity. In every industry invention and efficiency are eagerly welcomed. Can agricultural pursuits exist on the prestige of obsolete systems? No. If we would have agriculture take her place as the leading industry of the world we must make science subservient to her interests, and we must develop the minds of our husbandmen in order that they may appreciate the wonderful phenomena that work for and against their welfare. The time when the land furnished wealth for naught is gone, and old time systems of stock management cannot obtain in the face of modern competition.

The ruminant stomach is a wonderful and exquisite organ. The oesophagus leads from the mouth into the first stomach or paunch, and also by means of a muscular groove above the reticulum into the manyplies, from which the food passes into the reed or true stomach.

The dentition of the cow and sheep is similar. There are no incisors on the upper part of the mouth, and very rarely canines. The lower canines, one on each side, are in the same series as, and similar to, the incisors, of which there are six. These teeth grind against the hard upper gum. The tongue is very rough, and when grazing the animals pass it round a tuft of grass and draw the herbage into the mouth. There are six premolars and six molars, three on each side of both the upper and lower parts of the mouth. There is a gap between the canine and premolars on each side of the lower jaw. The food when taken first into the mouth is chewed slightly and moistened with the juice secreted by salivary glands, which occur in several parts of the mouth (we will deal with the functions of the various digestive juices and the composition of the food, later). When swallowed, the partly-masticated mass passes into the paunch. After feeding the animal usually lies down and soon begins to "chew the cud." This operation consists of the regurgitation of the food from the paunch back into the mouth, where it is thoroughly chewed, a copious secretion of saliva accompanying the process. The food is again swallowed but now instead of entering the gullet it passes along the groove above the reticulum into the manyplies. This organ is lined with folds, similar to the pages of a book, and between them the food passes, and eventually enters the reed or true stomach. The food remains here for some time—half an hour to an hour, according to the composition, and is then passed on to the duodenum. The partially digested food is conveyed along the intestines by the peristaltic action of the muscular wall into the rectum or hind gut. Digestion begins in the mouth and ends in the large intestine, and as the soluble and insoluble matter passes along, the former is absorbed so that when it reaches the rectum nothing but indigestible matter remains. This then is a rapid survey of the passage of the food through the alimentary system, without considering the various physiological actions which proceed simultaneously, and also subsequently.

The food of sheep and cattle may consist of grass and clover, hay, straw, roots, meal, grain, and cobs. Water, when plenty of roots are supplied, is sometimes withheld. This is erroneous, because water facilitates the action of the ferments in the digestive juices, by dissolving the food particles, and acting as a vehicle for their distribution. The chemical composition of the above

## FREE TRIAL UNTIL CURED



**My offer to all who lack Strength and Vigor, who have Rheumatism, Lumbago, Sciatica, Lame Back, etc., is:—Use my Invention until Cured, then pay me. I ask not one Penny in advance or on deposit.**

A man in good, vigorous health is full of electricity. The eye and brain sparkle with it, and his nerves and muscles are strong and elastic as steel. He is successful in business or his occupation, and his wit and general good nature makes him sought after by all. Could electricity be seen he would appear as in the illustration—emanating "something" you instantly feel as you approach him. This "something" is simply his natural electricity. We call such men "magnetic." Are you one? If not, don't you want to become one? During 40 years practice in Electricity I have aided more than a hundred thousand to become so. Men have come to me broken down from overwork, worry, or abuse of nature's laws, having exhausted all medical and drug treatments and apparently past aid, suffering tortures from Nervousness, Exhaustion, Varicocele, Rheumatism, Lumbago, Sciatica, Lame Back, Wrecked Stomach, etc., and even these I have helped to regain their health and strength—made them men like the above. I can do the same for any man who will use my invention, and who is not too far gone for help.

### I Cure you before you pay me One Penny

My treatment is very simple. I use Electricity as given by my famous Dr. Sanden Electric Herculex Body-Battery (latest patent, Mar. 7, 1905). Worn only during time you sleep, it fills your body full of the soothing, strengthening current, and in the morning you awake full of life and vigor, prepared to face the world however you find it. Two months' use generally cures the worst cases. Use the Herculex for that length of time, and if you are well, pay me. If not, return it—price when cured from \$5 up. Liberal discount if you pay cash for it.

As the originator and founder of the Electric Body-Battery system of treatment, my 40 year's success is the envy of many, and my Herculex is, of course, imitated (what good thing is not?), but my great knowledge to advise and direct my patients is mine alone and cannot be imitated. It is given free to all who use my invention until the cure is complete. My Herculex is guaranteed to give a current instantly felt, or I forfeit \$5,000, and to last for at least one year.

Call or send for My Electric Herculex to-day, or if you want to look into the matter further, I have two of the best little books ever written on electricity and its medical uses, which I send free, sealed, upon request.

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AND UNDERMINING HEALTH BY USELESS WORRY—NEW VITALITY OBTAINED BY USING

## Dr. Chases Nerve Food

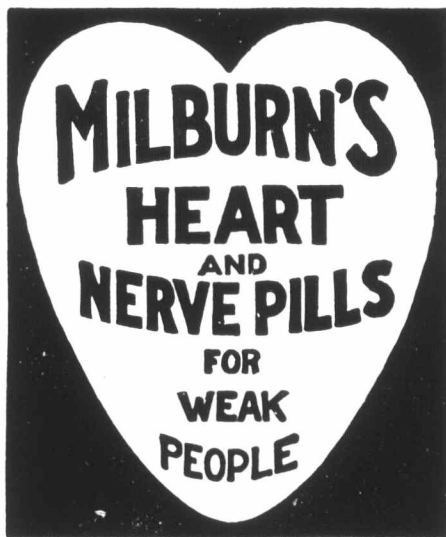
Brain and nerve force is squandered in a way which would be utterly condemned in the use of money. And of what value is money as compared with health?

By useless fretting and worry, by overwork, and by neglecting to take proper nourishment, rest and sleep, strength and vitality are frittered away and no reserve force is left to withstand the attack of disease.

Dr. Chase's Nerve Food is valued because it actually increases the amount of nerve force in the body, overcomes the symptoms arising from exhausted nerves, and gives that strength and confidence in mind and body which is necessary to success in life.

Nervous headache, brain fog, inability to concentrate the mind, loss of sleep, irritability, nervousness and despondency are among the indications of exhausted nerve force. These are the warnings which suggest the necessity of such help as is best supplied by Dr. Chase's Nerve Food.

If you would be healthy, happy and successful, test this great food cure, 50 cents a box, at all dealers, or Edmansson, Bates & Co., Toronto.



These pills cure all diseases and disorders arising from weak heart, worn out nerves or watery blood, such as Palpitation, Skip Beats, Throbbing, Smothering, Dizziness, Weak or Faint Spells, Anaemia, Nervousness, Sleeplessness, Brain Fog, General Debility and Lack of Vitality. They are a true heart tonic, nerve food and blood enricher, building up and renewing all the worn out and wasted tissues of the body and restoring perfect health. Price 50c. a box, or 3 for \$1.25, at all druggists.

food stuffs varies widely. Hay and straw furnish little nutriment relative to their bulk, but they are necessary for reasons previously discussed. They form the bulk of the excreta, the cellulose, and its modifications, of which fodder is mainly composed, being indigestible. Roots supply carbohydrates chiefly, as sugars and some mineral salt. They contain from 85 to 90 per cent. of water, and have a laxative effect on the bowels. Meals and grains are rich in nitrogenous matter, and possess a relatively high percentage of mineral matter. Water is present in quantities ranging from 10 to 12 per cent. Grains are rich in nitrogenous albumin matter, fats or oils and carbohydrate. All food stuffs contain more or less waste material, but this decreases with concentration. That is in specially prepared products. We see that the various forms of food is supplied

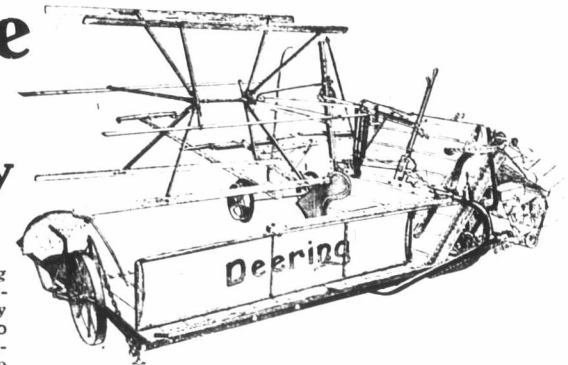
contain albuminoids, fats, carbohydrates, minerals, water, and indigestible substances.

### THE DIGESTIVE FERMENTS.

We may now consider the digestive process in detail. The saliva secreted by the glands in the mouth contains an active ferment ptyalin, which converts carbohydrates (starches) into soluble and diffusible sugars without itself undergoing any change. The oesophagus is a cylindrical muscular channel, taking no part in the digestion of food, but forming the common duct to the various digestive organs. The paunch, into which the food first passes, is a large muscular bag, very elastic, and lined on the inside with numerous absorbing villi and secreting glands. In this organ the food is "churned" and moistened to a pasty consistency, this forms the cud. The villi absorb some of the digested carbohydrates. These villi are small conical projections on the wall of the stomach. They are enveloped in a permeable cellular membrane, and each is provided with numerous capillaries. The villi are most active in the duodenum and are less numerous in the large intestine. After the regurgitated cud has been chewed it is conveyed to the mannyplies, the folds of which are thickly covered with papillae. These filter the digested portions of the food as it passes along. The mannyplies is the seat of the disease known as dry murrain, and when post mortem examination is made the spaces between the folds are found to be packed with dry, indigestible, vegetable tissues. The digestive tract is completely blocked, and the efficacy of any drench may be ascertained by observing the distance it has penetrated into the compressed mass. From the mannyplies the mass enters the true stomach or reed. Here gastric digestion takes place. The gastric juice, which is secreted by numerous glands in the wall of the reed, contains a ferment, pepsin and some free hydrochloric acid. The ferment converts insoluble albuminoids into soluble and diffusible peptones. The acid favors the action of the ferment and also acts upon the carbohydrates. The gastric juice has a slight, solvent action on oils. Absorption, secretion, and digestion proceed concurrently, and after a short time the food enters the duodenum, into which the bile from the gall bladder and the pancreatic juice flow. The latter contains several ferments the most active being trypsin, which completes the unfurnished work of the fat ptyalin and pepsin and renders the fat diffusible. The bile has little or no direct action on the food. Its alkalinity facilitates the work of the trypsin which, unlike pepsin, acts better in an alkaline medium. In some cases the bile dissolves fats and its action on cell membranes enables them to allow the passage of minute drops of oil. Absorption by the villi is very rapid as the food is constantly in motion. Absorption and secretion are kept up as the food passes along the intestines, but near the rectum these processes diminish and cease on reaching the end of the large intestine. Some of the absorbed food, however, is not suitable for animal nutrition and this, consisting chiefly of nitrogenous substances, is passed out in the urine. These rejected materials are separated in part by the liver as the blood containing the assimilated food from the digestive organs passes through it. The final filtration is the work of the kidneys, which act like blood scavengers. The carbohydrates refuse is expired as carbon dioxide gas, and some of the fat is exuded in perspiration.

The albuminoid constituents incorporated into the animal system are muscular tissue, hair, hoofs, horns and chiefly concerned in the formation of cartilage. The carbohydrates supply energy chiefly as also do fats, the most of the latter, however, is stored up in connective tissue folds. The mineral matter goes to the skeleton and various tissues. All the cells of the body are more or less bathed in water. An interesting feature in digestion is the part played by bacteria. These minute organisms enter the alimentary tract from the food or body by way of the mouth. The animal's hair is always covered with particles of bacteria. These are transferred to the body with the food. Bacteria decompose animal

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When a field of grain is harvested with a Deering, you won't find crow's feed scattered all about; you won't find the grain lying in

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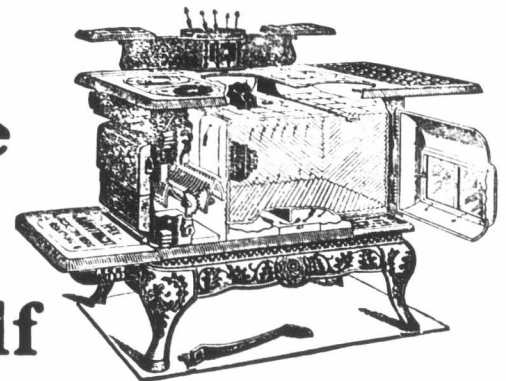
The Deering line of harvesting machines is complete and includes, besides grain and corn harvesting machines, a complete line of hay-making machines—mowers, tedders, various styles and sizes of rakes, hay stackers and loaders.

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and vegetable matter resolving it into alcohol and lactic acid arise. The simpler chemical compounds. The proteins are converted into soluble albuminoids. All these processes take place in the absence of air, the decomposition of the excreta and urine is continued by other bacteria. *Farmers' Gazette.*

Frank A. Vanderlip described the discomfiture of a lawyer blackballed by a club. "He was so mad," said Mr. Vanderlip, "that he actually had the audacity to write to the club's secretary and demand the name of the man who had blackballed him." The secretary's reply to this outrageous and absurd letter struck me. It was: "Dear Sir, I have received your letter, but the name of the person who blackballed you. His name is..."



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