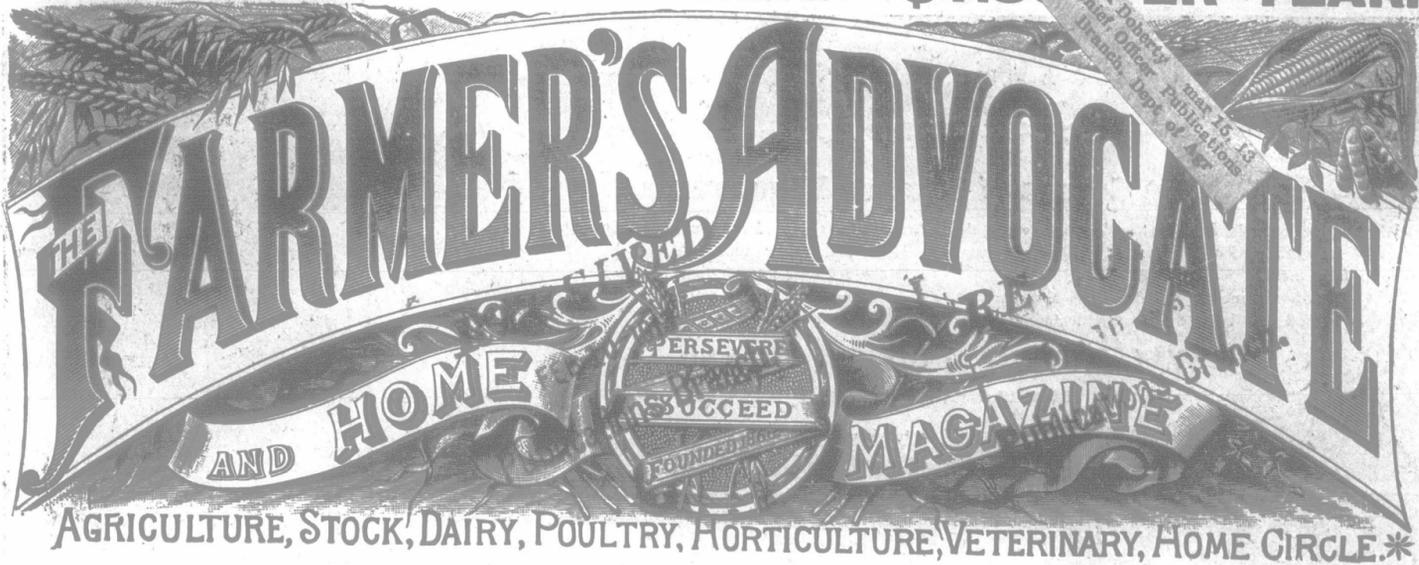


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AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE.*

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VOL. XLVIII.

LONDON, ONTARIO, FEBRUARY 6, 1913

No. 1063

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THOUSANDS of women are members of the Purity Flour "Boost Club." To join, just get a sack of Purity Flour. Try it for bread, pies and cakes. The results will make you an enthusiastic booster for Purity Flour. You'll call your neighbors in to see the beautiful big loaves of bread. You'll invite your friends in for supper to try your wonderfully light cakes. You will have grandma or mother in for dinner to show her you can beat her in making pie crust. And you'll boost so strong for Purity Flour that very likely you'll be asked if you own stock in the Company.

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YOU couldn't ask for anything fairer than that. And every grocer who handles Purity Flour will stand by that guarantee. If your grocer hasn't Purity Flour in stock he can get it for you.

PURITY FLOUR

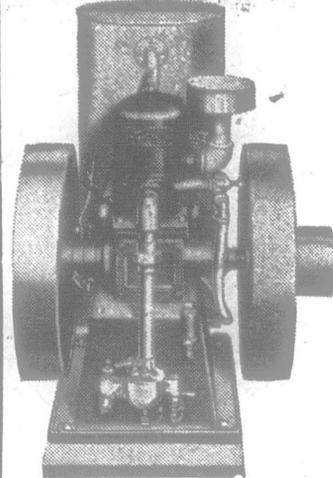
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Strong, Reliable and Easy to Operate. Send for Circular.

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ANY PERSON who is the sole head of a family, or any male over 18 years old, may homestead a quarter section of available Dominion land in Manitoba, Saskatchewan or Alberta. The applicant must appear in person at the Dominion Lands Agency or Sub-agency of the district. Entry by proxy may be made at any agency, on certain conditions, by father, mother, son, daughter, brother or sister of the intending homesteader.

Duties—Six months' residence upon and cultivation of the land in each of three years. A homesteader may live within nine miles of his homestead on a farm of at least 80 acres solely owned and occupied by him or by his father, mother, son, daughter, brother or sister.

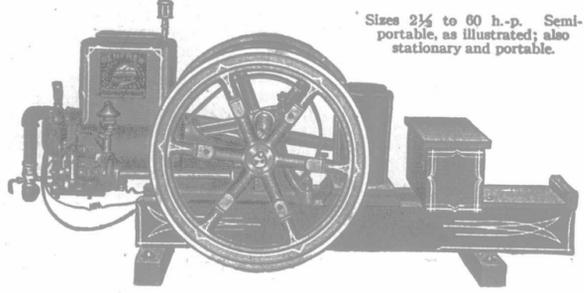
In certain districts a homesteader in good standing may pre-empt a quarter-section alongside his homestead. Price \$3.00 per acre.

Duties—Must reside upon the homestead or pre-emption six months in each of six years from date of homestead entry (including the time required to earn homestead patent) and cultivate 50 acres extra.

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So remarked an agent who has handled many different makes of gasoline engines in the last twenty years. “Why,” he said, “that special governor of yours would make any man want the

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The governor that the agent spoke so enthusiastically about is, we might say, one of the principal features of the Renfrew-Standard engine. It is undoubtedly the most efficient governor yet devised—immensely superior to the old fly-wheel type. It controls the engine perfectly, allowing speed to be changed at will while engine is running, and automatically cutting off the supply of gasoline and electricity from batteries should engine exceed speed for which it is set. The simplicity and durability of this governor also makes the Renfrew-Standard engine especially adapted to withstand rough usage.

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THE
SALVATION ARMY
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From such districts will come the very class of men, boys, and housekeepers required by Canadian farmers.

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A Gilson “Goes-Like-Sixty” Engine with New Features and Latest Improvements.

**MORE VALUE
MORE POWER
MORE SERVICE
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Does satisfaction mean anything to you? Does money saved in fuel, in time, in repairs and expense bills appeal to you? Get Gilson Facts, and find out how the Gilson 60-SPEED engine does the greatest variety of work—how it gives the maximum satisfaction—saves money in equipment, and yields 100% service at lowest cost. Every engine covered by a cast-iron guarantee.

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These are mounted on truck, with four and five interchangeable pulleys, and pump-jack. Drop us a card to-day, and we'll send you full descriptive literature. We are making special prices to the first purchaser of these engines in every locality. Write NOW. Agents wanted.

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If you are troubled with stumps, give our “Patent Samson Stump Extractor” a trial. It has now been in use in Europe for the past three years with the greatest success. By its assistance, two men will do the work of three men and a horse. It can also be used for felling trees.

WRITE US FOR DETAILS.

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**NO-MONEY-IN-ADVANCE
PAY AFTER IT HAS PAID
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LET US SEND YOU ANY OF THESE SPRAYERS—to try for 10 days, then if you buy, you can pay us cash or we'll wait till you sell your crop, then you can pay us out of the "extra profit." We pay freight. Wholesale dealers' prices.



Man-Power Potato and Orchard Sprayer.
Sprays "anything"—potatoes or truck, 4 rows at a time. Also first-class tree sprayer. Vapor spray prevents blight, bugs, scab and rot from cutting your crop in half. High pressure from big wheel. Pushes easy. Spray arms adjust to any width or height of row. Cheap in price. Light, strong and durable. **GUARANTEED FOR FIVE FULL YEARS.** Needn't send-a-cent to get it "on trial." You can get one free if you are first in your locality. Write today.

Horse-Power Potato and Orchard Sprayer.
For big growers. Most powerful machine made. 80 to 100 gallon tank for one or two horses. Steel axle. One-piece heavy-angle-iron frame, cypress wood tank with adjustable round iron hoops. Metal wheels. "Adjustable" spray arms and nozzles. Brass ball-valves, plunger, strainer, etc. Big pump gives vapor spray. Warranted for five years. Try this machine at our expense with "your money in your pocket." See free offer below. Write today.

Fits-All Barrel Sprayer
Fits any barrel or tank. High pressure, perfect agitation, easy to operate. Brass ball-valves, plunger, strainer, etc. Automatic strainer. No "cup leathers or rubber" about any of our sprayers. Furnished plain, mounted on barrel, or on wheels as shown. Five year guarantee. It don't cost you "a cent" to try it in your orchard. Get one free. See below. Write today.

FREE—Get a sprayer FREE.—After you have tried the sprayer and are satisfied that it is just as we recommend it, send us a list of the names of your neighbors and we will write them and quote them price and have them call and see your machine work, and for every Fits-All Sprayer we sell from your list we will credit you with \$2.00 or send you check if you have paid cash.
For every Man-Power Potato and Orchard Sprayer we sell we will credit you with \$3.50 or send check.
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We do all corresponding and selling. All you need do is to show the sprayer. Many have paid for their sprayer in this way. This offer is good for only the first order in each locality. Don't delay. Send the coupon or post card NOW.

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Send me your Catalogue, Spraying Guide, and "special offer" on the sprayer marked with an X below.
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Order our famous collections: Farm Garden Collection, 26 selected varieties, \$1.00, postpaid; Trial Collection, 18 selected varieties, 50c., postpaid; Childrens' Collection, 15 selected varieties, 25c., postpaid.
"Our Ideal" Mangel has proven the largest yielder in last year's co-operative experiments.

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The Coupon will bring our new book "Better Buildings." It will also put your name on our list to get our plans and Building Service—Free.

Our Service to Our Customers:

- We Plan Barns.
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Factories at
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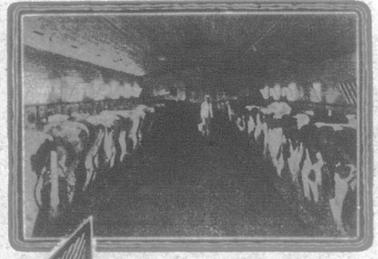
Metal Shingle & Siding Co.
Preston, Ont.

Please send "Better Buildings" free.

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Address.....

Paper London Farmer's Advocate.



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When your cows are lined up like this, the manure falls into the gutter and makes barn cleaning easy, keeps cows cleaner and healthier, improves quality of milk, increases your profits.

The B.T. Sanitary Barn Equipment

helps prevent tuberculosis, big knees, ruined udders, abortion, etc. Puts dairying on an improved business basis. Pays for itself every year.

FREE: Our two books tell all about BT Equipment. Stalls, Stanchions. Bull pens are described in this Stall Book. Feed, Litter Carrier and Feed Trucks told about in this Litter Carrier Book. Sent on request. State if building or remodeling. Bestby Bros., Ltd., 40 Hill St., Fergus, Ont.

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WELLAND COUNTY, ONT.

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Some of the profits of the Farm cannot be better invested than in a short-term Life or Endowment Policy

The Federal Life Assurance Co. issues most desirable forms of contract.
Consult any agent of the Company or write to the Home Office at Hamilton.

The Federal Life Assurance Co.
HAMILTON ONTARIO

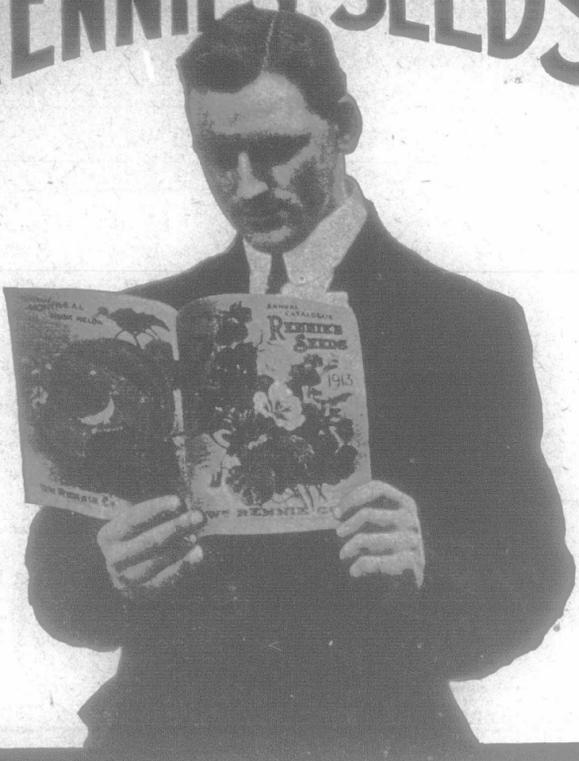
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500 St. Paul St., cor. St. Peter, Montreal, P.Q.

PLEASE MENTION THIS PAPER.

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FREE
 An instructive 64-page illustrated catalogue
 Brimful of what you want to know about the labor-lightening, time-saving features of the most economical and efficient agricultural implements ever invented—

Planet Jr

No. 4 Planet Jr Combined Hill and Drill Seeder, Wheel Hoe, Cultivator, and Plow sows seed accurately and works quickly and thoroughly.
 No. 11 Planet Jr Double Wheel Hoe, Cultivator, Plow and Rake works both sides of plants at one passage, until crops are 20 inches high. Indestructible steel frame and steel leaf-lifters.
 Send postal today for the catalogue!

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WRITE FOR NAME OF OUR NEAREST AGENCY

Why Be a Donkey-Engine?



See That Lock! It Can't Slip!



Saves Backs! Abolishes Hitches!

Don't let heavy hoisting turn your back into a donkey engine. Simplify your hoisting with a

Jumbo Safety Hoist and Wire Stretcher

Here's a wonderful little labor-saver that you can try for 30 days free—a hoist that holds the load in mid-air as well as hoisting it up. Thousands of farmers are tickled at the way this hoist saves work. It's the handy way to lift wagon bodies, swing butchered hogs or anything else you want to hoist. It's a peach of a wire stretcher, too. It will save labor—earn its cost in scores of different ways.

How It Works—In the upper block of the Jumbo is an automatic lock which engages the pull rope the instant you let up on it. The heavier the load the tighter the grip. Yet so simple in construction, so perfect in action, that the mere pull necessary to lift the load is sufficient to release the lock.

Simplicity is the secret of the Jumbo's big success. It is the only self-locking hoist on the market with patent adjustment for ropes of all conditions. Made of best steel, critically tested and inspected before shipment. Shipped for 30 days' FREE use anywhere; guaranteed everywhere.

Besides the Jumbo Safety Hoist and Wire Stretcher, we make nine other sizes Hall Hoists, capacity 400 lbs. to 4 tons. Mail your name and your dealer's for the catalog and that BIG FREE OFFER—right now!

HALL MFG. CO.
 956 Main St., Monticello, Ia.

"BAKER"

No Friction Windmills

Mechanically Correct NOW, and Always Have Been

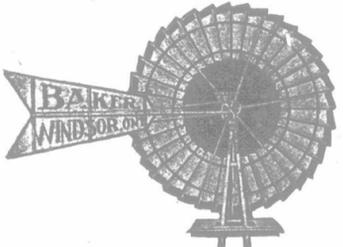
Originators of the Hub and Stationary Spindle in Windmill Construction—the ONLY PROPER PLAN of Carrying the Weight of the Wheel.

No part connected by the revolution of the wheel can be thrown out of line, while with other mills the weight and leverage of the wheel keyed to the shaft will wear out the boxing and gears. The wheel and gearing will become out of line, requiring repairs and new parts. The use of the stationary spindle on all "BAKER" mills enables us to bring the wheel close to the tower, which greatly lessens wear-friction and permits us to place wheel within a few inches of the pump-rod. Supporting the weight of the wheel directly over hub reduces friction, and substantiates our claim that it is the easiest running mill made, and has won for the "BAKER" the reputation of being a non-friction mill, in which class it has no competition.

The "BAKER" (built on a hub) has a long constantly lubricated bearing on both sides of the wheel. Other mills with wheel keyed to a shaft have bearing only on the inside, thus causing leverage, friction and excessive wear on boxings, which cannot be avoided in "shaft mills."

Any geared windmill with wheel keyed to a shaft, whether so-called single or "double-geared" mills, the weight of the wheel and consequent friction will soon wear out the boxings, causing the pinions to bind and the gears to cut-out, and the wheel will become out of line and dip toward the tower.

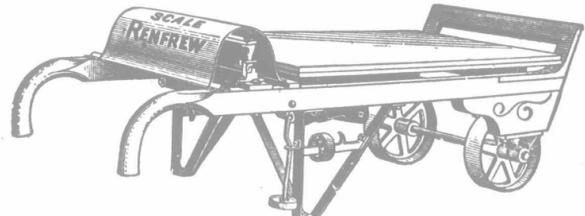
With "BAKER" Windmills the wheel is carried lightly and with little or no friction, and even in the event of wear, the wheel will always be balanced and the gears cannot become out of mesh. Write for booklet.



THE HELLER-ALLER CO.
 MANUFACTURERS OF
 Wind Engines, Pumps, Tanks, Etc.
 WINDSOR, ONTARIO, CANADA.

Saving the Farmer's Profit

THE MISSION OF
The RENFREW Handy Two-Wheel Truck Scale



Daily loss—that's what inaccurate scales mean to the farmer. Loss on everything he sells by weight.

Stop it now. Let the "RENFREW" do your weighing, and get every cent of profit on your produce that you should get.

"RENFREW" accuracy is guaranteed by the Canadian Government—which means protection against loss through underweighing.

The "RENFREW" weighs anything from one pound to 2,000 pounds—and you can wheel it to anything you want to weigh. Are you interested?

Mail this Coupon Now for this Free Booklet, "The Profit in the Last Ounce." It tells interestingly about the business side of farming—and how money is saved with a "RENFREW" Handy Two-Wheel Truck Scale.

THE RENFREW SCALE CO.
 Renfrew, Ontario

AGENTS:
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 CALGARY—Reynolds & Jackson
 EDMONTON—Race, Hunt & Giddy
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Mail Now Coupon
 Please send me free of charge the booklet, "The Profit in the Last Ounce."
 Name.....
 Address.....
THE RENFREW SCALE CO.
 Renfrew, Ontario

BEST RESULTS ARE OBTAINED FROM ADS. IN "ADVOCATE."

The Farmer's Advocate and Home Magazine

PERSEVERE AND SUCCEED ESTABLISHED 1866

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1879

Vol. XLVIII.

LONDON, ONTARIO, FEBRUARY 6, 1913.

No. 1063

EDITORIAL.

Will some of our agricultural scientists undertake to explain precisely why clay land, in Canada, usually proves better adapted to alfalfa than equally well drained loam? Is it a question of alkalinity or what? An interesting point awaits disclosure here.

If the production of milk is not making the advance in Canada that some regretfully think is the case, is it not because the dairy farm which requires so much manual labor is the most seriously short-handed? We must have feeders and milkers as well as cows.

With the chartered banks declaring dividends of from ten to fourteen per cent., fat reserves being laid away, and borrowers warned of having higher rates to pay for their loans, the depositors will naturally expect to see something doing by the urbane clerk who marks the rate of interest on the margin of the little book in which the savings deposits are credited. Why not?

A few excellent hints on advertising were offered the other day by Peter McArthur. Tell facts, he says, instead of pumping hot air. Make the facts appeal, but stick to facts. Such advertisements are instructive. They create good business, and do not re-act. It is not good business to push a good article with untrue claims. More and more strongly does experience emphasize the great truth that Honesty is not only the best ethical principle, but the best business policy.

If electricity can obviate the necessity of hired help in the farm home, its economy for many farmers is indisputable. The wages and board of a girl amount to two or three times the cost of two horse power of electric energy. Of course electricity will not do all that an efficient maid can accomplish, by any means, but by lightening work outside and inside the house, it should enable many families to get on nicely alone, where paid domestic service is, at present, the alternative of over-work.

In estimating rations, remember that much of the silage weighs light this winter, having been made from shocked corn that had lost much of its moisture before filling. We find that a big ensilage forkful of our silage weighs about 13 pounds, as compared with 15 to 18 pounds last winter. And it was made from extra well eared Longfellow hill corn, whereas the previous year it was made mostly from rank-grown dent corn, also well eared, but averaging a bigger percentage of stalk and leaf than the crop from which we filled in 1912.

If the Dominion Grange wishes to extend its influence and become an important factor in molding public policy, it should turn its attention toward constructive criticism. At present it is largely destructive. Habitual indulgence in this line of attack begets an attitude of mind which the general public scarcely distinguishes from "knocking." There are many keen thinkers in the Grange, and their criticisms are usually incisive, but lose some of their effect for the reason mentioned. It is easier to win support for a good policy proposed to supersede a bad one, than for a policy of mere demolition.

Electric Light Per Horse-Power.

A very important practical point in determining the economy for farm purposes of electric energy purchased on a flat-rate basis is the amount of current required for lighting. There are some power operations, such as milking and cream separating, that synchronize with lighting. What is the minimum load which will run a milking machine or a cream separator, and keep a few necessary lights going at the same time?

A four-unit milking machine of the kind most commonly used in Canada at present can be run with about one and a half horse-power. A cream separator, suitable for farm purposes requires less than half a horse-power. In either case this would leave an odd half horse-power available for lighting. How many lights will this run? With the carbon-film lights in common use, a horse-power of electric current will run 13½ sixteen-candle-power lamps.

The same horse-power, turned into the most efficient makes of Tungsten lamps, will supply thirty twenty-five-Watt lamps, each producing 18 to 20-candle-power of light, which is whiter and more agreeable than the light from the old-style fixtures. The Tungsten lamps are a little more expensive and not quite so long-lived, the filaments being subject to breakage by jarring, though not nearly so much so as was the case with those first made. A prominent foundry in the city where this paper is published has lately equipped its plant with Tungsten lamps, using spring shock absorbers in places where vibration is greatest. A carbon-film 16-candle-power lamp ordinarily retails at 25 cents, and a 32-candle-power at 30 cents. A Tungsten 18 to 20-candle-power ordinarily retails at 55 cents, going considerably higher with some makes as the candle-power increases.

Through the Hydro-Electric Commission, however, the hydro departments of various municipalities have been able to secure certain makes of Tungstens which they can retail at a uniform price of 40 cents apiece, for those of 25, 40 and 60 watts capacity. Tungstens are the newer and much the more efficient lamp and especially adapted for use with switches, which reduce jar. No doubt farm users of hydro will be enabled through the Commission to obtain them at a minimum cost.

The Day of Electricity.

The day of electricity in Ontario farm practice has arrived. Current is already being used by a few farmers in a tentative way with gratifying results. Estimates are being established, data secured and experience obtained, which will make out such a case for hydro-electric energy as a farm power, that demand for it will develop to an enormous extent. We venture the prediction that within five or ten years electric distribution wires will be as common a sight in some parts of rural Ontario as telephone wires are to-day. This statement is made soberly, deliberately, and with a clear knowledge of the essential facts bearing on the problem. We have not jumped at conclusions. While all along hopeful of the advantages of hydro-electricity for farm purposes, we have persistently stayed our enthusiasm with facts and figures.

With the co-operation of Prof. Wm. H. Day, of the Ontario Agricultural College, we have gone into the subject thoroughly. Following Prof. Day's notable contribution to our 1907

Christmas Number, we referred to him a number of practical questions which, in the light of some carefully conducted original experiments he answered through "The Farmer's Advocate" of March 21st, 1912, with the following general summarized results:—

Assuming electricity at a flat rate of \$50 per horse power and gasoline at 20 cents a gallon, the cost of grinding grain was a trifle higher with electricity when the current was used 3½ hours per day. When the current was used only one hour per day the cost was very high as compared with gasoline, but when it was fully employed for 12 hours per day, the cost of grinding was less than one-third the cost of grinding with gasoline at 20 cents a gallon. This left out of consideration labor, oil and durability of motors. These experiments were very welcome, because they brought the comparison of hydro-electricity and gasoline down out of the cloudland of generalities in which it had been enveloped, and gave the rural public a basis to figure on.

Again lately, at the Ontario Experimental Union meeting in Guelph, Prof. Day contributed an estimate that at 20 cents a gallon—the price of gasoline is higher than that now—less than thirty dollars a year would buy the gasoline necessary to do all the grinding, pumping, cutting, pulping, washing, sawing, separating and churning on a hundred-acre farm. Yet notwithstanding Prof. Day's experiments and estimates, which may be accepted without question except for the advance as noted in price of gasoline, we have finally come to the conclusion that electricity is the farm power of the early future. In some cases it may, perhaps, be generated by gasoline, in others by small local waterpowers harnessed to private or co-operatively owned dynamos, but thousands upon thousands of farmers will use the current supplied through the Ontario Hydro-Electric Commission. Why?

Because it will do many things that are impracticable with other forms of power, and when harnessed up to all the purposes which can be found for it on an up-to-date farm, its continuous employment will bring down the cost per unit of energy to a very reasonable figure indeed, even allowing the present high estimate of \$50 per horse power, which will undoubtedly be reduced as time goes on, whereas the prices of gasoline and coal are rising, and will continue to rise. The case for hydro will, therefore, improve from year to year. Even on the present basis a very strong plea can be made for it on large dairy farms, especially where milking machines are in use. Here is what is being, or shortly will be, done on an Oxford County farm with two horse power costing \$100.00 per year:

Milking thirty cows by machine, running a cutting box, grain grinder, drag saw and buzz saw, emery wheel and grindstone, root pulper and fanning mill. Moving the motor once a week to the house, they operate the washing machine. Other household attachments such as electric flat iron, electric air heater, electric water heater, electric body warmer, electric vacuum cleaner, and electric toaster, are operated by merely connecting them up to the electric light wires and other connections specially provided when wiring the house. In addition, both house and barn are well lighted, and a large beacon light, outside the house, is kept burning, except when there is heavy demand on current for power purposes.

Supposing hydro had no advantages whatever



ary to lift the lock. The Jumbo's big locking hoist on cement for ropes steel, critically mounted. Shipped re; guaranteed

hoist and wire her, we make her sizes Hall capacity 400 4 tons. Mail name and your for the catalog at BIG FREE R—right now!

Profit dy scale



an to the ghting, and ould get. Canadian s through 00 pounds— interested? in the Last —and ho Scale.

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Please send me free of charge booklet, "The fit in the Last

SCALE CO. Ontario

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL
IN THE DOMINION.

PUBLISHED WEEKLY BY
THE WILLIAM WELD COMPANY (LIMITED).

JOHN WELD, MANAGER.

Agents for "The Farmer's Advocate and Home Journal,"
Winnipeg, Man.

1. THE FARMER'S ADVOCATE AND HOME MAGAZINE is published every Thursday. It is impartial and independent of all cliques and parties, handsomely illustrated with original engravings, and furnishes the most practical, reliable and profitable information for farmers, dairymen, gardeners, stockmen and home-makers, of any publication in Canada.
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as a farm power, think what it means in these days of scarce domestic help, to have some of the heavy work of the household, such as washing and sweeping, done by electricity, to say nothing of electric flat irons, toasters, ovens, etc. This great advantage of adaptability to household purposes would alone carry the day for hydro. It will go far to solve the great problem of lightening work in the farm home. It is true that, to men operating on a small scale, the cost of the current as at present quoted is high, but we have the best of grounds for believing it will be progressively reduced, for the avowed object of the Hydro-Electric Commission is to keep the enterprise on a cost basis. A greater obstacle is the capital outlay necessary to equip a house and farm so as to take full advantage of current purchased on a flat-rate basis. But this, too, will be solved in time. Some may contract for a small amount at first, and use it for lighting, cream separating and other purposes requiring but little power. Then it will be but a matter of ingenuity and a very little expense to rig up a line shaft and run half a dozen implements, such as the root pulper, cutting box, chopper and others, thus saving a great deal of the owner's or hired man's time. An electric motor is very durable, is simplicity itself to operate, is easily portable, and requires scarcely anything in the way of repairs.

Of course there will be many other forms of farm power used for a long while to come. Every new discovery serves to stimulate interest in the subject, emphasizing the economy of substituting mechanical or electrical for muscular energy. There are many sections that cannot yet be economically served by hydro, but where available it presents very strong claims for attention.

TAKE NOTICE.

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Sometimes subscribers pay local people, publishers or postmasters, who fail to report promptly, which causes trouble.

If you have not paid for 1913, please send us express order or postal note.

Federal Aid to Agriculture.

Hon. Martin Burrell, Minister of Agriculture, in the House of Commons, at Ottawa, introduced a resolution providing that a sum, not exceeding \$10,000,000, be paid out of the Consolidated Revenue Fund during a ten-year period, beginning March 31st, 1914, for the purpose of aiding and advancing the farming industry of Canada by instruction in agriculture, including the work in veterinary colleges. Beginning with approximately \$680,000, which includes \$20,000 to be shared among the veterinary colleges, the first year the sums granted will go on increasing until 1917, when some \$1,080,000 will be reached, and continue thereafter at that amount approximately until 1923. The amounts allotted are according to population:—

	1913	Yearly Increase	1917-23
P. E. Island	\$26,529.85	\$1,306	\$31,753.73
N. Brunswick	44,509.93	4,902	64,117.87
Al'erta	46,094.95	5,219	63,970.91
B. Columbia	47,334.76	5,467	69,202.57
Manitoba	51,730.05	6,346	77,114.09
Nova Scotia	54,288.45	6,858	81,719.21
Saskatchewan	54,296.29	6,859	81,733.32
Quebec	159,482.40	27,896	271,068.32
Ontario	195,733.32	35,147	336,319.98

The work is planned on educational lines, to be conducted continuously by the provinces as indicated by the Federal Government about as follows:

Establishing agricultural, dairying, and horticultural schools.

Developing short courses in agriculture. Agricultural teaching in the elementary schools.

Work by qualified instructors, travelling or located.

Demonstration trains. Nature study. Domestic science.

The provinces are to spend the money. To guard against duplication to provide for co-ordination, two supplementary institutions are contemplated.

(1) A general annual conference of representatives of the Dominion and the provinces.

(2) A publication office may be established to disseminate information as to agricultural progress.

The two great problems which the Minister hopes by these means to aid in solving are: (1) the heavy burden of the cost of living, and (2) the still more serious increase of urban as against rural population, in spite of the exceptional increase of rural population in Western Canada. "If this process goes on," asked the Minister, "indefinitely, where will it land us? Into what danger shall we be plunged? Hunger and want in big cities are tragic enough, but neither so tragic nor so pitiful as would be deserted fields and a barren countryside. There can be no health in the cities without corresponding health in the country. To put it in Charles Russell's words: 'Our princes and captains of industry with all their control—the high built factories and titanic mills—might all disappear without man disappearing, but cut away men from the fields and the fruits of the earth, and in six months there will be silence in the streets.' He based his appeal for a united support of the proposals not only for the betterment of the economic conditions of the farmers, but for the creation of a fuller and happier life, and concluded with an eloquent passage:—"On this side of the House and on that are many men who either know by experience the farm life of our country, or whose fathers or fore-fathers have toiled on the land. It is well for all to keep in vision that solitary figure in the distant furrow, that stooped form tending the hearth of the isolated home—symbols and types of our national necessities, our national virtues, and our national strength. Here between these four walls we sit year by year making the laws of our country. We do it, amidst much strife, sometimes ill, sometimes well, too often attaching importance and permanence to that which is neither permanent nor important. Our laws would be better—there would be less bitterness in our strife, if we were oftener moved by a sincere desire to enlighten the work and brighten the lives of those who, in the silence and solitude of the fields and woods, are doing the foundation work of our common country."

During the course of his address Hon. Mr. Burrell paid a warm tribute of acknowledgement to Dr. C. C. Jones, whose investigations and constructive planning had resulted in this scheme. Referring to similar work undertaken in other lands, he mentioned especially Germany where practically no advance was made in agriculture until the system of secondary and elementary agricultural instruction was organized during the second half of the last century.

The speech of the Minister was warmly commended in the House, special reference being made to his determined stand in successfully carrying

through far-reading proposals for the investment of such large sums in a campaign of agricultural education.

HORSES.

The heavy draft brood mare is an attractive proposition for the man on the farm. She more than earns her keep by the work she does, at the same time raising a colt which finds ready sale on the market and grows into money daily.

Horse breeders cannot afford to ignore temperament in breeding. The "high-strung" horse is far harder on himself than is the quieter, steadier animal, and more likely to bring upon himself evil results of faulty conformation, in the form of blemishes, whereas the quieter horse, not being so exacting upon his physical mechanism, although equally faulty in conformation, may proceed through life doing his everyday work alongside his "nettled" mate and never show actual blemish.

To produce feed for the farm horses economically, it is necessary that the brood mare does her share of the work. Most authorities are agreed that for the good of the mare and her colt as well she should work, but, as John Gardhouse stated in an address recently delivered, the man who works the mare should be a "horseman." A horseman is a man of judgment, and will not overwork or abuse the mare.

Breeding Heavy Draft Fillies at Two Years.

Many owners of heavy-draft fillies, which have just turned two years of age or which will be two years old this coming spring, are doubtless weighing carefully, in their own minds, the advisability or otherwise of breeding these colts during the coming season. As with many other debatable questions, in connection with the various phases of horse breeding, there is a difference of opinion upon this point. Many horsemen of wide experience would not, under any circumstances, permit of their two-year-old fillies being bred, while many others, with knowledge backed up by an equal amount of experience, advocate no other principle than the breeding of the well-grown fillies at this age. Now, whatever side you are allied with, the fact remains that there are cases where it is not in the best interests of the mare's after usefulness to be pregnant at two years of age, and there are other cases where it is decidedly advantageous to breed the two-year-old. The period of breeding usefulness in the mare's life is short enough at best, and if a year or two can be added to it, by early breeding which is not damaging to her in any way, the policy is to be commended, and is worthy of adoption.

Those who know tell us that the most fertile period in the life of the brood mare is from four to twelve years of age. Before and after these ages the chances of getting a mare in foal are much less. This means that it is more difficult to get the two-year-old mare in foal than the older mare, and this is borne out by experience. Stallion owners and mare owners as well tell us that greater difficulty is experienced with the colts than with the older mares. We wonder just how this would be if all the older mares bred had never produced a foal previous to the breeding in which their fertility is reckoned against that of the two-year-old. Almost invariably the mare once started to breed is much more likely to get with foal than one which has never had a colt, barring, of course, a few which, due to some peculiarity, will not breed when suckling a foal.

Now there are several conditions which should determine whether or not the mare of two years should be bred. There is no question, but that it is not a safe practice with horses of the lighter breeds. These mature much more slowly than the drafter, and their development would be seriously injured if called upon to perform maternal duties. But it is different with the drafter. A big, growthy, good-doing, heavy mare, is usually fairly well developed at two years of age. All fillies, however, do not meet these requirements. Much depends upon the individual; some grow slowly and reach a reasonable degree of size, and finish at this age, are backward in development and such should not be bred. Feed and care up to this age is an important factor. A colt which has been neglected, underfed, and generally poorly cared for, is not a good proposition as a two-year-old breeder.

The destiny of the product of the mating has something to do in determining whether or not the two-year-old filly should be bred, but is not

a limiting factor. For instance, it is stated by some, that early breeding is not desirable where breeding is carried on with the object of improving the strain, that is where the colts of the mating are to be used for breeding purposes, while if the colts are bred for sale, as drafters, nothing is lost, and considerable is gained by breeding the two-year-old. True, from the standpoint of selling drafters there is something to be gained by breeding the two-year-olds, and upon weighing the matter carefully, is there not some value in breeding a strain of horses which will mature early and have, at the same time, that inherited tendency to early breeding? More care is necessary in breeding the young fillies to improve the breed than where the colts are sold for work, but if these fillies are well-grown, strong and robust, a good colt as a breeder should result. The writer remembers several cases where the first foal of a filly bred at two years of age, was of exceptional merit, and one particular case where the filly was bred and got with foal as a three-year-old, leaving another good colt. This mare was a particularly well-grown colt at two years.

In the Old Land many breeders follow the practice of breeding their well-developed two-year-olds. They do not give them much work while carrying their first colt, and in many cases are not bred at all the following season, being put to steady breeding at four years of age. This gives the mare a rest, and tides her over the bad (teething) fourth year.

A prominent horse breeder of this country recently expressed the opinion that an in-foal two-year-old, provided she is a good type and reasonably well-grown, is a very attractive proposition as a breeder, and we are inclined to agree with him. True, the two-year-old is a little more difficult to get with foal, and there are those who believe that every time a mare is served and does not conceive the more difficult it is to get her pregnant, but it is doubtful if there is enough difference in this respect between a two-year-old and a three-year-old to warrant deferring breeding to the three-year-old form. Where all conditions of feeding, care and growth warrant, we would say breed the two-year-old.

Horse-Breeding for Farmers.

There are many farms in all parts of the country where the raising of horses as a business could not be carried on with reasonable profit. This is especially true where the lack of pasture land, the greater adaptability of the farm to other things, or the opportunity afforded by its location for following some well-paying specialty, are potent considerations. On such farms, as a rule, the horses that are needed are not raised, but are bought in the market. "Situated, as we are," said a farmer who lived in a section where the raising of early potatoes was a specialty that nearly all followed, "we can't afford to raise horses. It's much cheaper to buy them."

Though there are plenty of cases in which this is true, there are a great many where it is not true, and where the farmer, even though his location and environment are not favorable to making a business of horse-breeding, would find it much to his advantage to raise at least the horses that he used, or, perhaps, even now and then to have one to sell. Every farmer who buys his horses knows how heavy the expense seems when it is necessary to purchase a new team—and in these days of high-priced horses, it seems heavier than ever. Yet, on a great many farms, this expense can be avoided.

In the case of the man who decides to raise his own horses, however, there is fully as much need that he go about it understandingly as the man who takes up horse-breeding as a business. The farmer cannot afford to go into any haphazard breeding undertaking. He requires a team of a certain kind for his own use, and to make it worth his while to attempt to raise horses, he must be at least reasonably certain of the result. Often he is constrained to use mares of unknown breeding, which does not make his task any easier, but is by no means a bar to his success.

In pointing out the path that leads to the greatest certainty in breeding, it is necessary for me to refer briefly to a very ancient and well-organized law—the law that "like begets like." This law is, in the first place, a general one, and is based simply upon the well-known tendency in parents to reproduce themselves in their offspring. This tendency exists in all animals, regardless of their breeding. In reproducing themselves, however, animals are also continuing or carrying forward the stock from which they spring; hence comes the liability of the offspring to revert or "take back" to some ancestor more remote than his immediate parents.

Now, if his ancestry runs back through a number of animals of different types, it will be seen that, if reversion takes place, he may resemble any one of them, and thus be quite different from

his parents. It is clear that in such a case the probability of parental resemblance is not strong enough to be worth depending upon. But if his ancestors are all alike in type, varying only in such degree as always exists in different individuals, he will, if he chances to "take back," resemble an animal that closely resembles his immediate parents. In its practical working, therefore, the law that "like begets like" is more surely operative when we are dealing with pure-bred or high-grade stock. With such stock like tends to an advanced degree to produce like, as far as general type is concerned. But with mongrel stock the tendency is not so marked. When the parents, even though of the most mixed and heterogeneous blood-lines, are similar in conformation and general characteristics, the tendency to reproduce themselves is stronger, because in both it is in the same direction. But if they are different—as when a loosely-built, weedy mare is bred to a compact, closely-built horse—the result is doubly uncertain, because the tendency is in different directions.

Now, let us see what will happen when one parent—for instance, the sire—is a pure-bred, and the other a mongrel. On the sire's side there is very little danger from reversion. On the dam's

was brought to the horse. She was a beautiful animal, was considerably taller than the other mare and weighed more; but she was, of course, about as different in type from a draft-horse as she could well be. I told her owner I did not approve of mating such extreme types, and urged his breeding her to another horse that we had of Trotting and Thoroughbred blood. But he was not to be dissuaded and she was bred to the Percheron. The resulting colt was very handsome in contour, but his limbs, though clean and flat, were much too slender for his body, and I was not surprised when, before he reached maturity, he threw out a pair of curbs.

One great bar to the occasional raising of a colt by farmers who are not in the business is the belief that there will be a considerable loss in the use of the mare during the period of gestation and while she is suckling the foal. This loss is usually over-estimated. Mares which are in foal need exercise, and they are much better off if used regularly than if allowed to stand idle in the stable. Their work, of course, should not be unduly severe and they should be fed generously, remembering that they have a double duty to perform.

After foaling, the mare should, if possible, be

given a vacation and allowed to run with her foal in pasture. Both will do enough better as a result of this always to make it worth while, even if it puts the owner to some little additional trouble and expense. But, though such a rest is highly desirable, if it is not practicable, the mare can continue to work after two or three weeks' rest. In this case the colt should have a roomy box-stall, with high, smooth walls, where he can remain without danger of injuring himself while his dam is working. Colts kept in this way rarely do as well as those which run with their dams in pasture; but many good ones are raised under just such conditions, and this method when made necessary by circumstances, is satisfactory if good judgment is used.

Chataqua Co., N.Y.

T. A. TEFFT.

LIVE STOCK.

Few branches of mixed farming offer the opportunities for handsome profits and quick returns which may be had from pork production.

A spray of blue-stone solution, at the strength of about a handful to a pail of water, was used by Geo. Raymond & Son, of Oxford County, for lice on cattle, with very satisfactory results. Jas. Raymond tells us that it not only killed the lice, but left the hair in nice condition, free from dirt and stickiness left by some other specifics. Have others tried it with equal satisfaction?

Few, indeed, are the farms in the older settled districts which can afford the loss which results from the selling of raw material. What is farm raw material? Grain, hay, straw and other products of the soil which might be fed on the land to increase the production of beef, pork, mutton, milk, or poultry, and by this keep up the fertility of the soil and increase the crop returns of future years.

"Where can I get some extra good stocker and feeder steers?" Here is a question for the stockman to consider—a question which one hears almost daily, but which is seldom answered to the satisfaction of the would-be buyer. All classes of beef cattle are scarce, and the better quality is extremely so. Here is an opportunity which the beef cattlemen of this country should grasp. Produce the stockers and feeders and, better still, the finished product by the use of the best sires on the good cows, and by following a cropping system best suited to the production of beef at lowest cost.



May Mist (2314).

A Highland pony filly. First in her class at the H. & A. S., 1912.

it is less than it otherwise would be, because, pure blood, being always more prepotent, the blood of the sire will preponderate in the offspring, notwithstanding the fact that, mathematically speaking, the latter is only a half-blood. These things hold good even when little care or skill is used in the mating. If, then, we use proper care and breed a grade mare to a pure-bred stallion whom she resembles in type, we have, as factors favorable to the result we aim at: First, the natural tendency that exists in all parents to reproduce themselves; second, the prepotency of the pure-bred sire; third, the danger from reversion to a different type so largely eliminated that there is very little fear of its upsetting our calculations. We can in such cases form a pretty accurate idea of what the colt will be—an idea, in fact, that is only less accurate than when both parents are pure-bred.

These laws, simple as they are and clearly as they are recognized by successful breeders, are constantly ignored by those who are only occasional breeders. But they can never be disregarded with impunity, and their earnest study is the first requisite of success in breeding.

Assuming that extremes are avoided and that parents are fairly similar in type, good results do not depend very much upon their being alike in size. A mare weighing less than one thousand pounds was once brought to a Percheron stallion which weighed nearly eighteen hundred pounds. She looked almost like a pony beside him, but she was strongly built and in general conformation so like him as to look almost like a Percheron in miniature. Her owner had some time before decided to breed her to this horse, but when he saw them together, he began to doubt his judgment. I told him that, though I should prefer that the parents were nearer of a size, I believed that a very good colt would result from this cross. She was bred and, after foaling, was bred again. The two colts grew into an exceedingly handsome pair, active, clean-limbed and well-built, and years of subsequent service proved them as good as they looked.

Later in the same season a Thoroughbred mare

Practical Points for Stockmen.

Don't starve the sow which is carrying a litter. Pigs which are "scrubby" at birth and which are nurtured in early life by the scanty milk flow of an emaciated dam, seldom weigh 200 pounds at six months of age.

If the sow is very thin after the litter is weaned give her a few week's rest, and good feed before breeding her again. The litter depends, more than many believe, upon the physical condition of the sow at time of service.

The sow which is kept outside during the cold weather should not be fed on "sloppy" food. Too much cold water incorporated with her food is not conducive to economic feeding nor to her general good condition. Too great an amount of her body heat is required to bring this water up to her own temperature. Feed dry or slightly moistened meal. Dry meal is good where roots are fed.

Don't keep the boar too closely confined. Let him out in the yard every fine day. Stronger litters almost invariably result from the service of an active, rugged sire, than from a clumsy, over-fat, lazy, unexercised hog.

If possible keep the sow, about to farrow or the one with a young litter, in a pen separated from the older fattening pigs. Experience has shown that it is more difficult to successfully raise young pigs where they are confined with fattening hogs, than where they are entirely separate from them.

It is not often profitable, in this country, to keep fattening pigs long after they have reached the 200 pound mark. Our market pays a premium for the lighter, leaner hog, and after this weight is reached it requires more feed to make a pound of increase than with a younger pig. For economy in production the younger pigs win.

Be careful not to allow the flock to crowd through narrow doorways. Abortion may result.

It sometimes happens that the ram does not take kindly to the young lambs, and to prevent injury or loss it is generally advisable to separate him from the flock before lambing commences.

If the ewes do not take exercise, see to it that they are quietly driven about for a short time each day. It will pay, especially where they are being well fed and are in high condition.

Dryness is imperative in the sheep pen. Sheep with wet feet seldom prove a success.

Insure a milk supply for the lamb crop by feeding the ewes liberally.

Feed the young calf regularly, and in like amounts at each feed. Irregularity and over-feeding are frequent causes of scours, and a scouring calf is invariably a poor doer.

If you have roots see that the young stock get them. Pulpel mangels, turnips or sugar beets are greatly relished by the youngsters, and as the calf becomes accustomed to eating, a little grain may be conveniently mixed with the roots.

It is surprising how early in life a calf will commence to eat good clover or alfalfa hay. Keep a fresh, clean wisp of this in his manger. If it becomes a little stale take it out and give it to some of the older feeders, and replace with fresh. The calf's taste is rather delicate, and it is necessary that everything given be as "sweet" as possible.

Be careful in feeding the cattle to be finished for the Easter or spring trade. Each steer or heifer is an individual with an appetite and make-up all his or her own. No two are exactly alike. In increasing the ration up to the maximum required for finishing, the feeder must be attentive, for one overdose considerable nursing is required to bring the animal's appetite back to normal. During the "off-feed" time most animals lose rather than gain in weight, which means much in economic beef production, and besides once stalled an animal is far more easily

"thrown off" again. Better by far to slightly underfeed than to overdo it.

This is the bull's off season, but he should not be neglected. Regular exercise, liberal feeding and general good care will be a great aid in insuring a successful breeding season during the coming spring and summer.

Many a young heifer has had her usefulness, as a breeder, impaired by being forced into the breeding herd at too early an age. No very young heifer can do justice to her own growth, and to that of her progeny at the same time. An injury at this time is potent throughout the entire breeding career of the heifer.

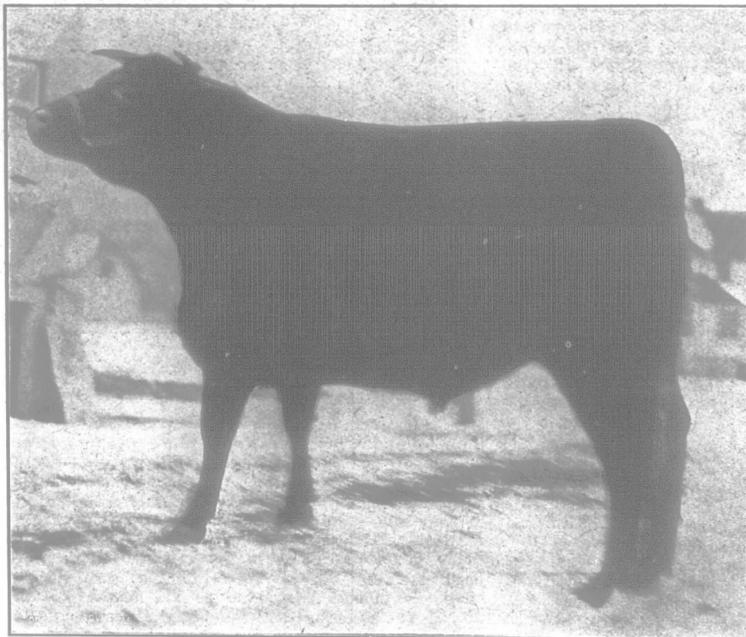
Winter Care of Sheep.

Careful management of pregnant ewes during winter means success to the sheep breeder. In many cases they are overfed, given unsuitable food, or deprived of exercise and fresh air. Others allow them to brave the winter storms without sufficient food. Either practice is not conducive to success, but, of the two, lack of fresh air and exercise, with overfeeding, is the most injurious.

It should be the aim of the flockmaster to produce a large crop of strong lambs, and to do this he must bear in mind the natural conditions prevailing on the range where the sheep roam at will, always having abundance of fresh air and exercise, with new pastures. Lambs almost invariably arrive strong and vigorous under such conditions.

HOUSING.

Farm conditions, together with our cold, changeable weather, make it necessary to provide



Shorthorn Yearling Steer.

This pure-bred steer was first in his class and champion beef animal of the Eastern Ontario Live-stock and Poultry Show, held in Ottawa in January. Exhibited by Pritchard Bros., Fergus, Ont.

some means of shelter for sheep during the winter. Nature has provided the sheep with a dense long fleece of wool, so that she is able to withstand very severe cold, provided she is kept dry. Our buildings for sheep, then, should be constructed more for the purpose of sheltering them from the storms than to provide warmth, and for this reason buildings for sheep can be constructed very cheaply.

As each sheep requires twelve square feet of floor space, the size of the building will depend on the number of sheep kept. The essentials of a sheep pen are: that it be airy, free from drafts, well lighted and dry. The pen should face the south, having several doors on this side, which must be left open at all times, so the sheep can run in and out when they please. The other three sides should be tight-boarded to prevent drafts. Tongued-and-grooved lumber may be used, or inch lumber with strips. Space should be left for at least two large windows, which may be placed one in each end.

The feeding racks may be placed along the wall and the sheep fed in this manner. However, many sheep breeders prefer the movable feed racks, as they may be placed out in the open during fine weather in the fall or early spring. They may also be used to form partitions in the pen, if

necessary, for the purpose of separating sheep about to lamb, or others requiring special attention. These racks are made 24 inches wide and 36 inches high, with a tight bottom 6 inches deep, for feeding grains. The slats on the side may be placed 7 inches apart so that sheep can thrust their heads into the rack to feed. Sheep intended for show purposes should not be fed from a rack of this nature, as the slats in some cases have a tendency to rub the wool off the neck of the sheep. However, for ordinary conditions, this rack is preferred, as there is practically no waste of feed.

FEEDING THE FLOCK.

On account of the thick fleece it is often very difficult to tell from sight whether the flocks are in too high condition or going down in flesh; thus in many cases the inexperienced shepherd who is feeding oat straw thinks his flock are retaining their flesh, while in reality they are in very poor condition. The same thing applies to the feeder who is supplying a very liberal ration, unknowingly his sheep are becoming over-loaded with flesh. For this reason sheep should be handled frequently, thus enabling the flockmaster to arrive at a correct estimate of their condition.

Feeding should not be delayed too long in the fall. It is surprising how much hay sheep will eat if they are allowed access to a feeding rack and fresh hay supplied every day. It is wise to bring them in every night when the cold, stormy weather sets in. This lessens the danger from dogs, besides keeping up the vitality of the flock.

There is nothing better than good clover or alfalfa hay for sheep. Feed regularly and economically, so that none is left over. If the sheep are in good condition, they will require very little grain during the winter. Roots are very valuable for sheep on account of their tonic and regulating effect, and, if available, should be fed in

considerable quantities. A little care is necessary to not feed roots in too large quantities to in-lamb ewes before weaning, as they cause a flabby foetus and make parturition difficult. Pea straw or bean straw may also be fed with good success. Care should be taken not to make any sudden changes in the ration fed, as the digestive system of the sheep is very delicate and easily upset.

LAMBING TIME.

As lambing time approaches, the ewes should receive some grain in addition to the hay and roots fed because at this time there is a very heavy strain on the body of the sheep. Besides providing for her own bodily needs, she also has to supply nourishment for the foetus. Gradually increase the grain ration until each ewe is getting about one half-a-pound of grain. Corn, oats, or peas are excellent grain foods. If corn is fed, the quantity should be small, especially at first. Care should be taken to guard against the too generous use of highly nitrogenous foods, as these may cause a rapid growth of bone in the foetus, with the result that very large lambs are born, and there is danger of losing a number of the ewes. Some of this class of food is necessary, however, in order to prepare the ewe for her maternal duties, and a little bran or a few peas mixed with the oats is very beneficial.

When the lambs begin to arrive, the ewes require careful watching. Ewes about to lamb should be separated from the rest. If the lamb is weak, it should be assisted to obtain its first meal. If for some reason it has become chilled, a teaspoonful of brandy in a little cow's milk will act as stimulant and revive it.

After lambing, the grain ration should be cut down for a few days until the lamb becomes sufficiently strong to take all its mother's milk. When the lamb is a few days old, give the ewe a liberal supply of grain and roots in addition to the hay, and she will provide milk to grow a strong, vigorous lamb.

Sheep give quick and profitable returns, they

are easy to manage, they require very little labor, they conserve the fertility of the soil, besides destroying noxious weeds. Our farms should produce more sheep. A closer study of the requirements of the sheep, liberal feeding during winter, with abundance of fresh air and exercise, ensures strong, vigorous lambs, which means success and a substantial remuneration.

A. A. MacMILLAN,
Macdonald College.

The Scottish Shepherd.

By Will H. Ogilvie.

The shepherd plays an important part in the rural life of Scotland. Immense tracts of hill country, both in the Highlands and Lowlands, are given over to sheep-grazing, and the personality of the men who tend these flocks is a distinct one, and of interest to pastoralists the world over. The hill shepherd is a type apart from his brother of the arable farm. His lonely life and quiet surroundings, together with his more strenuous work and greater responsibility—for he is seldom subject to the same supervision as his down-country neighbor—develop in him traits of character which set him apart from the average rural worker, and no more self-respecting and trustworthy member of society exists than the true hill shepherd, the scion of a line of faithful servants for many generations. Much could be written of his peculiar, remote life, its hardships, its trials and its compensations, its ideals and achievements; but in this short article I intend rather to deal with the shepherd of the lowland mixed farms, the man whom we see night and morning inspecting his flock in the grass fields, shifting his nets in the turnips, or following a draft of his fat lambs to market.

It has always been a recognized fact, so far, at least as Scotland is concerned, that the shepherd is, in some respects, a higher type of farm servant than the plowman, the byreman, or hedger. To begin with, he is independent of intermediate authority; he takes no orders from the farm steward, but is responsible only to his master for conducting his own particular department. Hence he has learned the invaluable lesson of thinking for himself. On many farms such duties as those of choosing sales for sheep, of making change of pasture, of buying and selling stock, are left entirely to the shepherd's own discretion, and such trust is bound to bring with it the confidence and reserve strength which accompany responsibility. The great majority of lowland shepherds are upright, god-fearing men, sober, diligent and capable, and whole-hearted in preservation of their employer's interests.

For the greater part of the year the work of a shepherd on an arable farm is easy enough. Unlike the hill shepherd he has no great distances to traverse, no rough country to cross, no winter snowdrifts with which to battle. In the sheltered fields that are grouped round the lowland homestead his charges are well fed on hay or turnips when the weather is severe, and he has none of the anxiety of the hill shepherd in the stormy winter nights. But he, too, has his busy seasons, when lambing, washing and clipping, keep him fully employed. At such times as these he is given assistance from the farm staff, or is allowed to take help from the neighboring shepherds, whose assistance he acknowledges by returning the compliment when a brother "herd" is "through wi' work,"—thus a system of mutual help tends to lighten his individual labors.

With regard to the assistance which is given him by the farm hands in carting sheep-nets and stakes, laying down turnips on the grass fields, washing sheep, lamb-marking, etc., the fact that the shepherd must appeal to the farm steward if he wishes to borrow a horse and cart, or a man's or woman's labor, is responsible in certain cases for friction between these two heads of departments, the "herd" and the "grieve." Many a good shepherd has been lost to a thriving arable farm because he and the steward have fallen out over some such simple matter as the borrowing of a cart and horse on a certain inconvenient day. If the two men do not pull together endless trouble may eventuate. However good and conscientious they may be in their own departments, they are often strangely tactless and combative in relation to each other, each one suspicious of an advantage being taken of him. Given, however, a tactful, firm steward and a reasonable shepherd, all goes well; and a spirit of give-and-take allows the farm work to be unimpeded.

Lambing-time supplies the shepherd with his most strenuous work. In a convenient field he builds his shelters for the lambing flock, yards fenced with wire-netting to which are bound sheaves of straw; while short fences of similar make stand here and there to shelter the young lambs from the bitter March winds. Within this kingdom he places his portable house, a room and fireplace on wheels, which affords him shelter in stormy weather in close proximity to his flock.

For nearly a month, on an average-sized farm, he is employed at this work, with an assistant who relieves him of some part of his labors. All night you may see his lantern glittering among the straw sheds, and round the field as he keeps his faithful watch among the lambing ewes. When the last of the young lambs have been distributed among the grass fields the shepherd may rest on his oars and recover his sleep at nights, though constant attention is still required in mothering the lambs, and feeding from a bottle the orphans and weaklings.

In April and May the young lambs are tailed and marked, and in June, with the first of the really warm weather, the ewes are washed and clipped. The task of the shepherd thence forward is a pleasant and an easy one. Each morning he walks through the knee-deep grass fields counting his flock, and noting the constant progress of his lambs. At night he does the same. In July the lamb sales commence, and this is an interesting and absorbing time for the enthusiastic shepherd. Each fortnight he chooses with care a draft of his fattest lambs, taking his well-merited reward when they secure high prices, or it may be top prices in the market. Through the months of July and August the sales continue, and in lots of fifty or a hundred at a time the total crop of lambs is disposed of at prices which vary with the season, and the success or failure of the turnip crop which means so much to the speculative buyer.

Harvest approaches on the arable farms. This, the busy time of year for the farm laborer, is a slack season for the shepherd. On many farms, therefore, it is required of him that he render some assistance in return for the help given to him earlier in the year. This generally takes the form of his supervising the commissariat of the hired Irish laborers, making the porridge, serving out their harvest beer, and driving the cart which conveys their dinner to the harvest field. In the autumn the draft ewes are sold and "gimmers" or young ewes, bought to beat up the numbers of the flock. The buying of these sheep is generally left to the discretion of the shepherd, and he carries out the duty with judgment and marked success, for no one knows better than he the requirements of the place and the type to which his employer is breeding. In October or November the rams are put out with the ewes, and again the shepherd has little to do but mend fences, and go around his sheep a couple of times a day. By this time turnip feeding has begun for the winter. At first the turnips are pulled and carted to the grass fields, where they are scattered for the sheep; but later on when the snow falls and the frost has withered the last of the grass, and the cold weather demands that the sheep shall rely entirely on root feeding, the ewes and the hoggets, if there are any, are folded in the turnip fields and remain there throughout the winter.

The way the turnip feeding is conducted is this: In a field of turnips the roots are pulled up in alternate sections—six rows pulled and six rows left. The lifted turnips are carted away to the homestead for cattle food. The sheep are then netted on to the turnip land, and clean up the rows which are left. This is done to ensure the proper and equal manuring of the "turnip brake" as it is commonly called; for if half a field were pulled and half left, the sheep would be folded on only half of it and only half would

benefit from the manure which they supply to it; but by taking the turnips in rows off the whole of the land the entire brake is equally manured. A few acres are netted off at a time, and the sheep are kept on that piece of ground until the turnips are eaten right out. When the roots are reduced to mere empty shells the shepherd goes through them with a hoe, digging them up so that the sheep may get at them, and finish them cleanly and without waste. Strong rope netting is used for the portable fence, strung round posts or "stuckins", sometimes called "stabs", which are driven firmly into the ground with a heavy iron "mell." As soon as the "brake" is eaten out the shepherd changes the fence, taking in another few acres of growing turnips, the space, of course, being decided by the number of sheep to be provided for. If the weather is very wet the turnip ground becomes puddled, and cut up by the feet of the feeding sheep. In such cases it is customary for the shepherd to let the sheep through every night into an adjoining grass field that they may have a clean, dry place to camp. In the early morning they are again let through to the turnips.

Hogs—young sheep—go through a sort of apprenticeship to turnip feeding. Instead of being put at once on the "brake" to make out a difficult living with unaccustomed teeth, they are fed with sliced turnips from boxes. A space is netted off in a turnip field, but instead of alternate six rows being left all the turnips are lifted and laid in heaps, covered with straw to protect them from the frost, outside the net fence. A turnip-cutting machine on wheels is dragged to each heap in turn, and each day the shepherd, or his assistant, comes to the machine and cuts sufficient turnips for the requirements of the flock. Long-shaped wooden boxes or troughs are set in the "brake", and are filled with sliced turnips from the turnip cutter twice or thrice a day. The hogs do excellently on this treatment, and combine their own fattening with the manuring of the ground on which they are fed. A familiar sight on every Lowland farm is the turnip cutter by the turnip heap, and a familiar sound the coughing of the hogs upon the "brake," and the tap-tap of their impatient feet against the feed boxes. The sheep on a Lowland farm suffer little even in the most severe weather. They have abundance of turnip food throughout the winter. The high thorn hedges are sufficient shelter from the bitter winds, and there is constant attention from the devoted shepherd who is among them at all hours to render aid to the weak. Gradually the winter fades away into a slow but sure spring. With February comes the first promise of milder weather, and the big half-bred ewes, heavy with lamb, feed on the last of the turnips in the mornings, and in the afternoon are put through into the grass fields to rest where already a slight tinge of green may be detected. In March the lambs come. The ewes are finally taken off the turnip brake and put in the lambing-field. And so the year goes round again.

There is a healthy rivalry among the farm shepherds as to the condition and price of their stock, and there is a great deal of difference between a competent and an incompetent man. Some are so skilled and experienced that it matters not what farm they go to, the stock on that place will improve under their care, and from being neglected in the sale ring will grow to be the most sought after in the market. Others again



Scottish Sheep at Home.

fail to "make good," and are dear at their wages, whatever they may be. It is now a common practice for the farmers to give their shepherds a few sheep of their own, called a "pack," and, interested in these, they find an added interest in their employer's stock.

The Scottish shepherd, as a rule, is a cheery optimist. He may grumble at bad weather, shortage of grass, disappointing sale prices, and so on, but he does it with a twinkling eye, is always full of hope for the future, and proves himself as pleasant a companion as one could wish for a half hour's chat. He is full of wisdom about the weather and the crops, and understands the conditions of arable farming as well as grazing. He is a keen observer, shrewd in his dealings with men, independent, yet respectful towards his employer. He reads more than a little, and keeps in touch with national and local happenings, and is often happily original in his suggestions as to supreme or local government. Add to this that he is, as a rule, gifted with a keener sense of humor than his fellow servants, and has a quaint and quiet philosophy of his own. He works the best sheep dogs in the world and is proud of them, and in this connection great is the rivalry manifested between the "herds" on the road and in the sale yards. If his position is scarcely such an important and responsible one as that of his cousin in the hills, it is yet one which demands self-reliance, shrewd capacity, and quick judgment, and in none of these points does the Lowland Scottish shepherd fail to satisfy his employer.

Cheaper Cattle Stabling.

Editor, "The Farmer's Advocate":

I see that you are asking for information as to what constitutes a good stable. Now, speaking with regard to a stable for beef cattle or young stock, I have had a little experience that makes me wonder if we have not greatly overdone the building and equipping business. I have on the home farm a stone basement stable, well lighted, well ventilated, and with the exception that the cattle are all tied up, as handy as a stable could be. We feed these cattle three times a day, clean out the stables every day, let them out to water, etc. I have on another farm a basement stable connected with a large open shed, open to the south and east. The cattle on this place go out or in just as they please, the stable door is open all the time. Both stable and shed are well bedded down. They are fed twice a day and have access to water all the time, the tank being in the end of the shed. The stable and shed are cleaned out twice in the season. Now these cattle seem to do as well as the ones that get so much more care, and they certainly look cleaner and nicer. In watching these two bunches of cattle I have reached the conclusion that we could very handily cut out a great deal of expense in building, and a great deal of work in caring for our cattle in this part of the world (South Western Ontario) at least.

Lambton Co., Ont.

CALLUM.

Hides, Skins, Wool and Fur.

A market report issued by John Hallam Ltd., dealers in hides, furs, etc., Toronto, Ont., early last week states that there is a fairly good demand for beef hides, considering the quality which is being marketed. The lighter weights meet most ready sale. The supply in dealers' hands is moderate. Green hides, they quote at 13 cents, and 14 cents is the best price for inspected hides.

An interesting feature of the report is that calfskins are especially dull, are meeting with slow sale, and some are accumulating.

Horse hides are selling steadily, with sufficient demand to absorb the supply.

Sheep skins, owing to higher wool prices, are in a strong position, and all offerings are taken at advancing prices.

The wool market is closely sold up. Dealers now have very little domestic wool either washed or unwashed on hand. All offerings are readily taken at the full quotation.

The fur market is reported in a healthy condition. All standard furs being in good demand at fair prices, and receipts larger than a year ago.

Winter litters usually give more trouble than spring or summer litters. A reasonably warm pen is necessary and, above all things, keep it dry by a liberal use of straw or chaff; the latter when the pigs are very young. It is generally advisable to let the pigs nurse a little longer in winter than in summer, in order that they may be accustomed to eating from the trough and not receive such a shock from the sudden change of being forced to rely on the trough for all their feed. They do not take to eating so readily in cold as in warm weather, especially if the feed and pen are very cold. A little longer period with the sow prepares them for the change, as they are better grown and more able to cope with

adverse conditions. Under some circumstances the pigs could profitably be left with the sow until two months of age.

The Short- and Long-Pedigreed Shorthorn in England.

A writer in "The Farmer and Stockbreeder" (England), discussing "The Shorthorn Year," says, in part, "The year 1912 has been a memorable one in Shorthorn annals, inasmuch as it has brought into full light the value of the milking type of Shorthorn. It has made it very obvious that in the dual purpose type English breeders possess a more valuable sort of cattle than any other in that it is quite independent of the foreign trade. It has, moreover, done something to prove that animals of so-called short pedigree, if they are possessed of good udders and good frames, and careful milk records have been kept, will fetch more money at a public or private auction than animals of the highest breeding which are without individual merit or ability."

The class of Shorthorn which has made the poor prices the past year, according to the writer, is the go-between—neither a good milker nor a good beef animal. Continuing, he says: "It is a mere platitude to say that pedigree is being carried too far. It always has been, and very probably always will be; but there is one thing certain, and that is, that breeders, whether they are sticklers for length of pedigree or not, must, if their stockbreeding is to be carried to a financial success, breed usefulness and character into the stock."

"Character stands for individuality. Unless an animal has a distinct appearance from others it cannot have character. Thus it is that those animals which by their high-bred look or general refinement of appearance and dignified courage bear the mark of pure breeding are said to possess character, which may also be carried still further and be made to apply to any particular herd which is noted for certain special characteristics peculiarly its own. Put a highly bred animal amongst a lot of ordinarily bred ones, and if it cannot be picked out from the ordinary lot at a glance by an outsider who knows anything about cattle, then its breeding and its pedigree count for little."

In order to be valuable, the writer holds that every pedigree animal must be possessed of some useful attribute, and where conformation, character, constitution and color, with rent-paying ability, have been studied, cattle should always fetch remunerative prices, whether their pedigree traces to the tenth volume of the herd book or whether it does not.

The infusion of Scottish blood, introduced years ago, he believes as very valuable, as many old tribes would have been bred out had it not been for this, and concludes that cattle of sounder constitutions are obtained by admitting animals of shorter pedigree, because they have never suffered from the ill-effects of in-breeding or incestuous mating, like some of the long-pedigreed cattle have, and if a real dual-purpose type of Shorthorn is to be raised and maintained, the animals with only four or five crosses in their pedigrees must not be ignored.

THE FARM.

Variegated Alfalfa in Saskatchewan

Trials with different varieties of alfalfa on the College of Agriculture's farm, University of Saskatchewan, Regina, indicate that out there, as in Ontario, the variegated varieties of alfalfa are to be preferred because of their hardiness. The results of the 1912 cropping system are here given:—

The season was a very favorable one for alfalfa, the average temperature was high, the rainfall above the average except during the first three weeks of June, and the growing season was long.

Varieties	Test of Varieties	
	tons	lbs.
Grimm's	Average of 4 strains	3 1678½
Sand Lucerne	Average of 3 strains	3 1167
Turkestan	Average of 2 strains	3 318
Provence	Average of 1 strain	4 381
Common		
Montana	Average of 2 strains	3 886
Kansas	Average of 1 strain	3 743
Western	Average of 1 strain	3 706
Canadian	Average of 2 strains	3 007

"We have found Grimm's, Sand Lucerne and Turkestan, in the order named, to be most suitable," says a press bulletin from the university. "The best strains of each of these yielding more than any strains under any other name except Provence, Grimm's, Sand Lucerne and Provence are 'variegated'—that is, they have white as well as purple blossoms, indicating that they contain some blood of the Siberian alfalfa, *medicago falcata*. Provence killed out very considerably,

but in spite of that gave a very large yield. The yields given are for alfalfa in its third year—1912. Several strains of Siberian alfalfa have also been tested. They are very hardy, inclined to be woody, have rather a bitter flavor, give a large first crop, but very little after growth. We do not consider them satisfactory for use, but hope to use them to advantage in breeding hardiness into some of our other varieties."

Hardy Strains of Alfalfa.

Excerpted from an address by Prof. C. A. Zavitz before the Western Ontario Dairymen's Convention, 1913.

Recent experiments, which have been conducted at the Ontario Agricultural College, show us that there is a very great difference in the hardiness of different kinds of alfalfa. We have under experiment alfalfa grown from seed obtained from different parts of Ontario, the United States, South America, Europe and Asia. In one experiment, which has extended over the past four years, seventy different kinds of alfalfa have been tested under uniform conditions. In some of these plots there is, at present, almost a perfect stand of plants, while in others every plant has disappeared through the influence of the past two or three winters. The following table gives the average results in tons of hay per acre for each of the past three years from some of the different kinds of alfalfa:

ALFALFA OR LUCERNE, O. A. C., 1912.				
Country	Strain	Tons of hay per acre.		
		1910	1911	1912
Peru	Peruvian	2.6	.0	.0
U. S.	Grimm, Minnesota	3.6	2.7	4.6
	Texas	2.1	.5	.7
	Utah	2.6	.6	.6
U. S.	Colorado	2.1	.4	.6
Common	Nebraska	2.5	.6	1.1
	Montana	2.4	1.0	1.6
U. S.	Variegated, Kansas	2.2	1.2	1.5
Special	Wheeler, S. Dakota	3.1	2.5	4.1
	Variegated, Ontario	3.4	2.0	4.1
Canada	Common Violet, Ontario	3.2	.8	2.5
	Variegated, Ontario	3.6	2.2	4.9

It will be seen from the tabulated results here presented that there is a great difference between the Peruvian and the Grimm varieties of alfalfa. Here we have a comparison in the results of a tender, Southern Alfalfa, and of a Northern, hardy variety. Practically all of the plants of the Peruvian alfalfa were killed in the spring of 1911, and under similar conditions the Grimm alfalfa came through with almost a perfect stand.

A great deal of the alfalfa seed, which has recently been imported into Canada, belongs to the Common variety, and comes from Utah, Colorado and Nebraska. It will be seen that the plants of the Common variety, from these Western States, are very tender, and were almost completely winter-killed during the past two years. The Common alfalfa, obtained from Montana, is said to be the hardiest strain of the Common alfalfa in the United States, and yet the results are comparatively low in Ontario. Even this strain of Common alfalfa has been badly winter-killed at the College.

The two special lots of seed, obtained from Kansas and from South Dakota, have been noted for their hardiness in the United States, although they are still grown only to a very limited extent. The sample received, under the name of Variegated alfalfa, from Kansas has not proven to be variegated, and has given comparatively low results.

The three lots of alfalfa from Ontario seed show some very interesting results, the two variegated lots coming in the same class for hardiness as the Grimm alfalfa of Minnesota, and the Wheeler alfalfa of South Dakota. Two of the most important points, in connection with this experiment, appear to be the superiority in hardiness of the Ontario variegated alfalfa over the Common Violet alfalfa of the United States, and the superiority of the Ontario Variegated alfalfa over the Common Violet alfalfa of Ontario. As the results of experiments, conducted at the Ontario Agricultural College, at Guelph, it seems very evident that the four hardiest alfalfas, for sowing in Ontario, are the Grimm alfalfa of Minnesota, the Ontario Variegated alfalfa, the Baltic alfalfa of South Dakota, and the True Sand Lucerne. It is very important to secure seed of a hardy alfalfa if it is desired to obtain satisfactory crops of alfalfa in Ontario for several years in succession without re-seeding.

What Constitutes a Good Stable?

Editor "The Farmer's Advocate":

The first consideration being the location, I would say that I think a side-hill is usually the most satisfactory site for a stable. It is not usually convenient to build on the top of a hill, as this necessitates too much heavy hauling in haying and harvest time. A side-hill generally means good drainage from the barnyard, and at the same time does away with the necessity of a high bridge in the approach of the barn door. The ground can be scraped away from the high side, thus making it possible to build on the level, and also securing the admission of light from all sides.

A basement stable would seem to me to be the most convenient form in which to build for several reasons, the time saved in feeding stock through chutes, thus placing the feed just where needed, and the ease by which stables are cleaned, being the principle ones. The main alley should run lengthwise through the centre of the stable, so that a team and sleigh may be driven from end to end making it possible to get the manure to the field with the least amount of handling, and obviating the necessity of a litter-carrier. With two rows of cows facing the outside of the barn, in this manner the feed chutes are in the corners of the mows, where they are most out of the way. If horses and young stock are to be kept in the same stable, the horse stalls can be at one end with as many box stalls as there is room for, opposite them, across the alley. Feed chutes can also be built on each side of the barn floor above, for further convenience.

As to the construction of the wall, my idea is that any wall, which is composed of stone or cement, will be apt to produce a damp stable. The ordinary frame construction, sheathed with two ply of inch lumber with two thicknesses of tar paper between, is by far the cheapest wall of any of those under consideration, and if backed up by an inside lining of matched lumber makes a perfectly dry stable where any adequate system of ventilation is in use.

My method of ventilating, as practised in my own stables, is the simplest possible. I simply ventilate through the feed-chutes into the barn above, and from there to the open air through two large ventilators in the roof. This, with a little care as to opening and shutting chutes, according to the weather, has given entire satisfaction. No dampness, sufficient to cause damage, is ever noticeable in the barn. I had at first installed the King system, but could not make it work satisfactorily.

My idea in lighting my stable was to get in as many windows as was reasonably possible, as light costs nothing for manufacture. I have a window two feet high by four feet long between every two posts except opposite the barn approach, thus making thirteen of these windows for a barn eighty feet long by thirty-seven wide. There are absolutely no "dark corners" in the stable. I open them by sliding to right or left as convenient. This is a more satisfactory method than opening on hinges, as the windows are not so apt to be broken, and also the sash can be fitted more loosely in the frame, so as to work easily, and at the same time be weather-proof. At the present day there doesn't seem to be much question as to the proper material to use for stable floors. Concrete in the right proportions of cement, sand and gravel, will not wear out, and will prevent all loss in the way of liquid manure, etc. For the cow-stable, the part the cows stand on should have a fall of about two inches from the stanchion to the gutter. The bottom of the manger should be raised at least two inches higher than where the cow stands, so that she may reach her food without straining or assuming an unnatural position. The gutter should run in a somewhat oblique line, making the floor on which the cows stand, about five feet four inches wide at one end of the stable and narrowing down to four feet six inches at the other, thus making it possible to place each cow in a position best suited to her size. The above measurements may be varied to suit different breeds of cattle, but the average is about as given. To make stock appear to the best advantage, the alley behind should be considerably lower than the floor on which the cows stand.

Up to the present the most satisfactory system of tying cattle is the swinging steel stanchion. It allows of the greatest freedom of motion in lying down or getting up, and is strong and convenient. It also permits of the water buckets being placed back of the manger opposite the cow's shoulder, instead of in the manger, as is usually the case where they are constantly being filled with chaff and litter whenever the animals are being fed. In regard to the horse stable one or two things might be mentioned. In the first place it is important that plank be placed over the cement where the horse has to stand. The wear and tear on the cement floor,

and also on the horse's shoe makes this absolutely necessary. Again, creases or corrugations should be made in the alley when the floor is being put in. These corrugations should be about six inches apart, and should extend completely across the alley. They serve to give a foothold for the horses when drawing out manure, etc.

These are a few of the ideas that have been brought to my notice from time to time in regard to stable construction, and, having found them practical, I have no hesitation in passing them on.

Glengarry Co., Ont.

J. E. MAC.

Digging a Ditch with Dynamite.

Editor "The Farmer's Advocate":

Perhaps it may be of interest to some of your readers to hear of some work which we did during the fall of 1912 in making a new creek-bed through a beaver meadow and swamp and a little stretch of higher land with dynamite.

We wished to straighten a creek which flowed in a zigzag course through a swamp and beaver meadow, going over 80 rods south, and then, with many twists and loops, getting as far north again as it was when it entered our property some 80 rods further east, and then, after more winding to south and north and back again, finally got a little straighter and flowed past our buildings about the same distance (from N. line) as when it entered, but 110 yards further west. We made a fresh bed for it 100 feet from north line, run-



Dug with Dynamite.

ning in a straight course for 100 rods E. and W. and giving it a slight bend at the lower end and also at the upper end in our neighbor's property.

We used half sticks of dynamite (50 per cent.) in holes punched in the muck in the beaver meadow and in clay, gravel and large stones at the upper and lower ends of the work, where the creek flowed through drier land. The holes were made with an iron bar 1 1/2 inches in diameter and 4 1/2 feet long and pointed at one end. We had to use a maul where the bottom was very stony, but could generally put the bar down very easily 2 1/2 feet without. (In places one can push a 10 or 12-foot pole down by hand.) The holes were from 15 to 18 inches apart, roots or stones sometimes causing variation, but averaged 16 inches advance in a direct line. They were "staggered" about 4 or 6 inches (i.e., holes were alternately 2 or 3 inches to right or left of centre of ditch. Through the swamp there were a lot of stumps, varying in size up to 2 1/2 feet—some green, others dead, but with solid roots—cedar, balsam and tamarack—and where they occurred we used whole cartridges in several holes, according to the size of the stumps. Sometimes there was a clump of cedars together in the line of the ditch, and where the timber had been cut out some time there was a thick growth of small cedars, etc. We cut them down and cleared a track about 2 1/2 rods wide, so that the muck thrown out could spread around. (A neighbor working over half-a-mile away could see some portions of the stumps above the surrounding tree tops.)

The dynamite (50 per cent.) was cut with a potato-paring knife, as a clasp knife is said to be dangerous in case any of the nitro-glycerine gets in the handle at base of blade, and the click

of opening or closing might cause an explosion. We handled the cartridges (which were 8 by 1 1/2 inches) bare-handed, except when cutting them. Then a glove was used on one hand, as it is said to give some people a headache, but we never used much over 100 lbs. in one day, as we were attending to our crop when the weather was fine. Some were cut before being taken to the scene of operations, and others as they were required. The cut cartridges were not wrapped up. We tried tying pieces of parchment paper over the cut ends of some and left the others unwrapped, and found no difference in the work done.

The longest stretch we fired at once was about 230 holes on a little over 100 yards, and they all went off simultaneously, the report being one heavy crack. We generally fired about the center of the stretch of holes in the beaver meadow and at stumps near the centre in the swamp, as there the holes had whole cartridges. We placed two whole cartridges in each three adjoining holes, the center top carriage having the detonator and fuse. (We did not put it in till all the other holes were loaded.) We found 2 1/2 feet of fuse gave ample time to get out of the way. At the commencement of the undertaking we used stumping powder, but it did not give satisfaction in the water, many of the cartridges failing to explode at all. It might have done better if electrically discharged; but the cheapest battery in price list for ten fuses (one to each cartridge or hole) at one discharge is \$13.50, and for 20 holes, \$20.50, and as each cartridge has to be primed and connected to adjoining one, and also connections have to be made with the battery, we thought it would cost a lot in time, besides the fuses at three or four cents each and lead wires, so tried exploding it with dynamite cartridges, and concluded it would pay us best to use dynamite altogether.

We tried one stretch of about 100 feet, with holes punched at an angle of about 75 degrees sloping from N. to S. (ditch is E. and W.), but did not see much difference in the way the dirt was thrown out, and, as in that case, the holes had to be started all from N. of centre, and there was a little more trouble in getting the cartridges down at the slope. We did not do more sloping except when necessary, as when roots or stones were encountered. Where there was a tough sod on the beaver meadow, it did not do as good work as where there were only roots. There, although the dirt went up alright, a lot of the sod and stuff fell down into the bed again instead of spreading to both sides. It may have been partly owing to the fact that we had not staggered the holes there, as we had good success afterwards. There, of course, more work had to be done by hand, but the last 80 rods or so we did required very little hand work—just some pieces of roots, sods, etc., which had not gone sideways, had to be thrown out, and some pieces of stump which had been turned out to one side but rolled back again. The 80 rods referred to is about eight feet wide at top and four feet or so at bottom and 2 1/2 feet deep, and the ground is loosened lower so that it will wash out if the outlet is lowered more. The stretch above the bend (shown in the photo) is through our neighbor's, and was made to bring the creek in a direct course to our own ditch, as it had been diverted into different channels up there and so made the swamp wetter. There, as the ground was sloping and gravelly and not so wet, we carried water and poured into the holes after the cartridges were placed, to "tamp" them. Through the other part the water was just at the surface (above it in places), so no filling at all was required, and it was an easy job to make the holes. What made the hole-punching job longer was trying to find places to get under the stumps amongst the roots. We pushed the cartridges down with old shovel handles, and sometimes had difficulty where there were many fibrous roots, as the bar or handle would easily force its way, but the cartridge would occasionally give trouble.

The time required for making the holes and placing cartridges varied according to the roots and stones encountered, and (as we do not keep time sheets) we could not say the exact time that was required for 100 yards, as sometimes the one making holes was helping remove timber from the track, but say eight hours on an average for one making holes, and three hours for one or one and a half each for two placing cartridges. Of course, there was also time for carrying boxes of dynamite, cutting and priming cartridges; but as we did not try the work at all by hand, cannot give an estimate of the time that would have been taken to grub the stumps, but concluded we had employed the cheapest method by far, as the swamp was too soft to use horse-power, and it would have been quite an undertaking to throw out all the dirt by hand 2 1/2 feet deep and four to eight feet wide. Where there was blue clay it would clog on the shovel (as we found when finishing the work where the stumping powder failed), and a lot of stones larger than one could conveniently handle were thrown out by the dynamite.

The dynamite cost in a 300-lb. lot, \$25 per 100 lbs. We used about \$70 worth for 80 rods, so allowing \$2.50 for hauling from town (about 13 miles away—a hilly road), one man and one-horse democat, 15 feet of fuse costing 15 cents, and five detonators costing five cents, and say 35 hours for making holes, 14 hours placing dynamite, six hours for opening boxes, cutting and carrying and priming cartridges, would be 55 hours for one man at 20 cents per hour, or \$11, so the total would be approximately \$85 for 80 rods.

Dynamite	\$70 00
Fuse and detonators	20
Haulage	2 50
Time	11 00
Removing debris after explosion	1 30
Total	\$85 00

Of course, it cost us more than that for the whole ditch, as we had never seen dynamite or any work being done with it before we commenced operations. We were advised to get an "expert" at \$4 and board, but thought we would learn by experience, and thought possibly the expert might be only good in one respect—getting the wages! We lost a lot of time where the stumping powder failed, and at that time we had hired help, so have given the approximate figure for the last part of the work (80 rods) when we were alone, and have not figured anything on the cost of removing the stuff from the surface (logs and second growth), as that would have to be done if ditch had been dug by hand, and the dynamite would probably have thrown it out of the way, as it did the stumps, but we preferred to pile up the stuff to having it thrown around. Also, as we were experimenting, we did not put the whole stretch off at five blasts, as could easily have been done, but that only made a slight difference for fuse and detonators. Of course, it was a good time for the job, owing to the depth of water in the ground and the warmth of the weather. We used cedar shavings, soaked in coal oil, at the one end for lighting the fuse, as it was easy to start the cedar burning. For some of the earlier work we had put fuse and detonators in three places and tried to light them simultaneously. Of course, too, where the ground was stiff clay or stony for the whole distance one would have to allow a longer time for hole-punching, but, even then, hand digging would be far more expensive. Of course, there is some risk in handling explosives and reasonable care should be exercised. We were guided to a great extent by "A Book for the Farmer on the use of Explosives," by Canadian Explosives, Ltd., and also a similar work by Dupont Co., U. S. A. Grey Co., Ont. R. & C. SWORDER.

Rape as Early Winter Feed.

Some weeks ago we told of having cut late in November and bunched up for winter feeding, a few loads of rape. We promised to tell later how it kept and fed out. The report is very gratifying. The weather remained steadily cool or cold, and the rape kept almost perfectly, both in the heaps and in the larger piles at the stable door, where it was thrown off the waggon or sleigh from time to time, as hauled from the field. The small piles in the field, about the size of big manure heaps, froze partially from time to time, but that did not hurt them. They did not heat or bleach to any extent. Much the same thing was true of the larger heaps at the barn, though we did lose a part of a load which lay untouched for two or three weeks during mild weather, late in November. All the rest was fed up. The plan was to throw into the stable one day's feed ahead, letting it thaw out there. The rape lasted until the end of December, and a big noon feed of it was given once a day, in place of roots, to nine head of fattening cattle, and some young stock. They liked it, and thrived on it. A bunch of four cattle, bought November 25th, was turned off January 20th, after less than two months of feeding, for fifty dollars more than the purchase price. They were fed on the rape, as long as it lasted, along with 20 pounds a day of well-eared corn silage and what hay they would consume morning and night, some of the hay being bleached stuff of poor quality. Their grain ration consisted of a mixture of about equal parts of corn meal, cottonseed meal and oil cake, and would have averaged about two pounds per head per day for that period, costing less than \$2.00 per head for meal. The other cattle fed on rape did equally well.

Of course, conditions last fall were favorable for preservation of the rape. With a mild, open December some of the material would doubtless have spoiled in the heaps. Anyone having a surplus of rape to use this way, we would advise to cut late, just so as to avoid having the rape seriously hurt by the frost. It will stand a good deal of autumn freezing without injury.

A Mechanical Milker.

Editor "The Farmer's Advocate":

Your inquiry regarding our "Mechanical milker" to hand.

We keep from 35 to 40 cows—some are fresh, others about ready to go dry. Some of these cows have been milking over one year. Our cows are mostly of an inferior quality, with a few exceptions, as they have been picked up here, there and everywhere. We feed well, and if they get fat, we turn them off for beef and replace. When I bought the machine, I had it on trial for thirty days, and then decided to keep it. Our outfit consists of four units—that is, four pails, four pulsators, and four sets of teatcups, with the necessary rubber connections; each unit milks one cow. It is driven by an electric 3-H.P. motor, at a cost of \$10 per month for power, using about 190 kilowatts per month. The motor drives a pump, and the pulsators are driven by compressed air from pump. The outfit cost about \$700.

We have never weighed our milk, but consider we are getting about the same amount as if the cows were milked by hand. Our root crop was a failure, and therefore we have that against us this year. We have no trouble with the cows, as they all take to the machine quite readily, but some are inclined to hold their milk for a few days. We have one cow in thirty-eight that we milk by hand, and she is an old cow with a peculiar udder. From the thirty-eight cows we get about 60 gallons per day at present. This is a small production, but we have some cows that are simply no good. We have had no trouble keeping the rubber clean, but the inflators in cups wear out quite fast, as we had to replace ours in three months. The makers claim that the first inflators were defective, and gave me the second set which we are using now.

We have had the machine since the 1st of August and have used it continuously, except two or three times when the power was off, and once the air pipes froze, as our barn is cold. We can milk the 38 cows with one man and one boy in about one hour. This does not include the time it takes to clean up—that is, wash the pails and cups, which would probably take fifteen minutes. We strip all the cows after the machine, and get about two quarts from eight cows on an average. Some cows are milked dry with the machine.

On the whole, I am well satisfied with the outfit and intend to use it, as it saves a lot of labor and makes dairymen more independent. If I had fifteen or twenty cows, I would have a two-unit outfit—that is, if only one man was available to milk, as one man can milk and strip for two units, and could probably milk from fifteen to twenty cows in an hour.

Cumberland Co., N.S. HOWARD KELLEY

Mixing third cutting of alfalfa with corn in the silo, in proportion of one part alfalfa to six or seven of corn, was tried with gratifying results by a Quebec reader last fall. We had planned to test it ourselves, but the alfalfa was all fed out green before the silo-filling outfit arrived.

Hand Pick the Seed Grain.

The day is long past when a farmer in Old Ontario can afford to sow anything but the best seed. Labor is too scarce, the conditions of growth are too exacting, and the results are too important for the farmer, who wishes to make farming a success, to sow anything but the best. The last two seasons have demonstrated this fact. One season was so dry that only the seed that had taken deep root was able to stand the drought. The other season was wet, and the seed that had made a good start in life came to a satisfactory maturity.

A good deal used to be said about the importance of a frequent change of seed. Lately the emphasis is laid upon the importance of sowing seed high in vitality. Vitality, rather than a change is now seen to be the essential. We used to regard it as an excellence to secure seed from a locality, at a considerable distance, from the place where the seed was to be sown. The modern practice recommends the use of seed that has become thoroughly acclimatized. Vitality and adaptation to local circumstances seem to be the chief things aimed at.

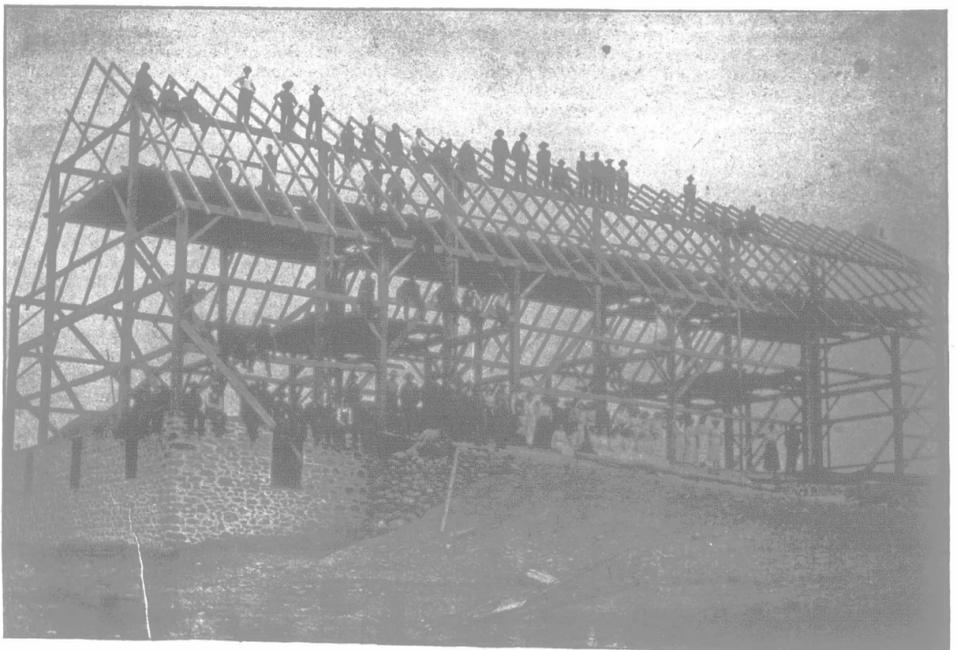
These two qualities can be secured by careful selection of seed with a record, followed by careful hand-picking. This hand-picking may seem to involve a great deal of labor; it does for the first year. After the first year the labor is reduced by, at least, seventy-five per cent. Enough to sow an acre or two is all that need be picked the first year. This means a foundation for one's seed. And there is no other way in which a foundation can be laid that will yield the results that will accrue from hand-picking. The picking can be done in spare hours, and no part of the farm work will yield better returns than this careful selection of seed.

York Co., Ont.

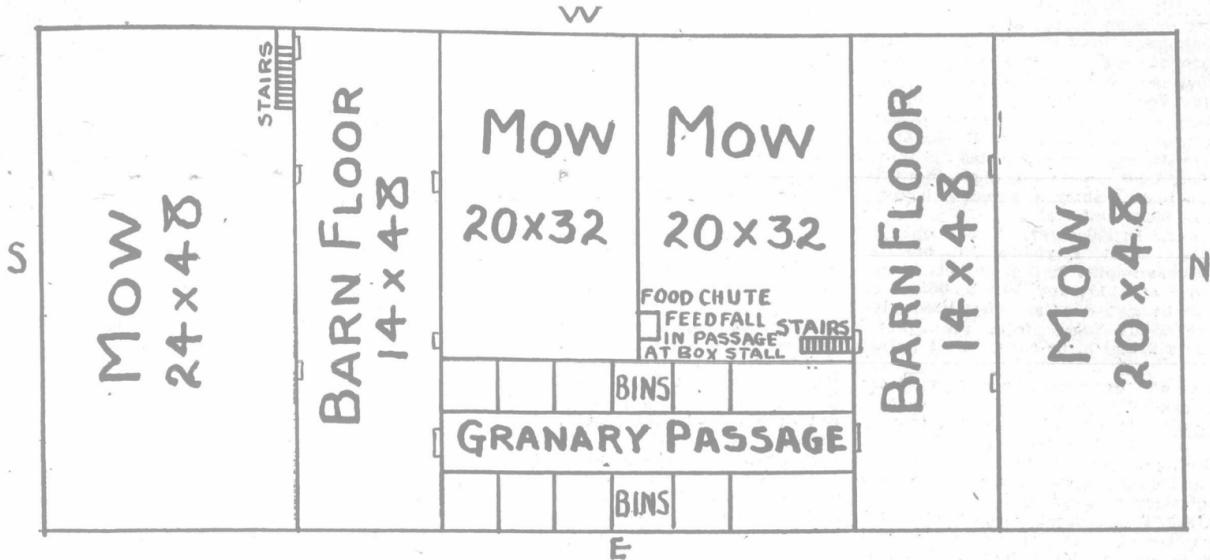
J. D.

A Peterboro County Barn.

The barn here illustrated is that of Hugh Fife, Peterboro Co., Ont., is 112 feet long and 48 feet wide, set on a stone basement 9 feet high, 18 inches thick, with cement floor throughout. The horse stable is on the south end. It holds 10 horses, the passage behind the horses being 8 feet wide. The stalls are 4½ feet wide and 9 feet long, including the manger. The feed passage is 7 feet wide, with grain box and with chute from above. The passages behind the cows are 7 feet wide, with a 5-inch fall towards the cows. The platform, on which the cows stand, is raised 6 inches, stalls are 5 feet long to the manger. The two rows of cows face each other with feed passage in center, and at the end of which is the root cellar also a door opening to the silo. The root cellar is under the passage-way, and is 24 by 22 feet. There are 4 box-stalls each 10 feet by 17 feet, with a passage 11 feet by 20 feet, which can be used as a box stall if required. The partitions are 4 feet high all through the horse and cow stables. An open shed, 14 feet by 45 feet with sliding doors, closed tight on both sides is a feature of this barn. The hog pen is on the north end, 20 feet by 45



The Barn in Course of Construction.
This barn is 112 feet long and 48 feet wide.



Upper Floor Plan of Mr. Fife's Barn.

feet, divided into 5 pens with feed passage. There are 18 windows, 4 feet 6 inches by 3 feet, which give plenty of light.

Some Fertilizer Experiments.

Editor, "The Farmer's Advocate":

In this article we propose to review briefly the results obtained from experiments with Artificial Fertilizers, conducted throughout the Dominion by individual farmers and agricultural representatives, in co-operation with the German Potash Syndicate.

Artificial fertilizers are just emerging from their infancy in so far as their use in Canada is concerned, and to-day they represent a very lively youngster, not afflicted very much by growing pains. Indeed, whatever pains he has experienced have been occasioned by the blindness and prejudice of some who could not or would not see any virtue in him.

To-day, despite prejudice and blindness, we find the use of commercial fertilizers becoming more and more general from the Atlantic to the Pacific, even in the vast Prairie Provinces, especially in the older sections, farmers are turning to them and many are the inquiries for information on the subject of fertilizers.

Canadian farmers are realizing the necessity of more intensive systems of farming, such as are practised in Europe. With the growth of such systems, artificial fertilizers will assume more im-

portance, for in these systems they are an absolute necessity. The general interest in fertilizers now displayed throughout Canada is evidence of this coming change. Our agricultural colleges are devoting more time to their study; our agricultural press devotes more space to their discussion; the experimental farms are experimenting with them on a larger scale than ever before, and farmers are using them in ever-increasing quantities.

The oft-quoted phrase, "By their deeds ye shall know them," might well be applied to artificial fertilizers. Use them properly and their deeds will be good, but, like many other beings and things, they are capable of misdeeds—only such misdeeds cannot be directly charged to them. These are caused either by mis-application or misrepresentation. The first fault lies with the one who applies and the second, generally, with him who sells.

OBJECTS OF EXPERIMENTS.

Indiscriminate use of fertilizers will often result in failure and disappointment. Varying quantities and proportions of plant foods are required by different crops and soils, and it is only by means of experiments that these requirements can be found.

If properly used, commercial fertilizers will produce the following results: Increased yield, improved quality, earlier maturity, improved condition of soil, and, naturally, increased profit.

These experiments are to illustrate these points. Furthermore, they show the experimenter that his soil must contain a readily available supply of each plant food (we refer to Nitrogen, Phosphoric Acid and Potash) for the crop; for if one be lacking, he cannot hope to grow a maximum crop.

PLAN OF EXPERIMENTS.

These experiments consisted of either three or five plots, as follows: Plot 1, unfertilized; plot 2, complete fertilizer (nitrogen, phosphoric acid and potash); Plot 3, incomplete fertilizer (potash omitted). Where five plots were used, one ingredient was left out of plots 3, 4 and 5. Thus plot 3, phosphoric acid and potash; plot 4, nitrogen and potash; plot 5, phosphoric acid and nitrogen.

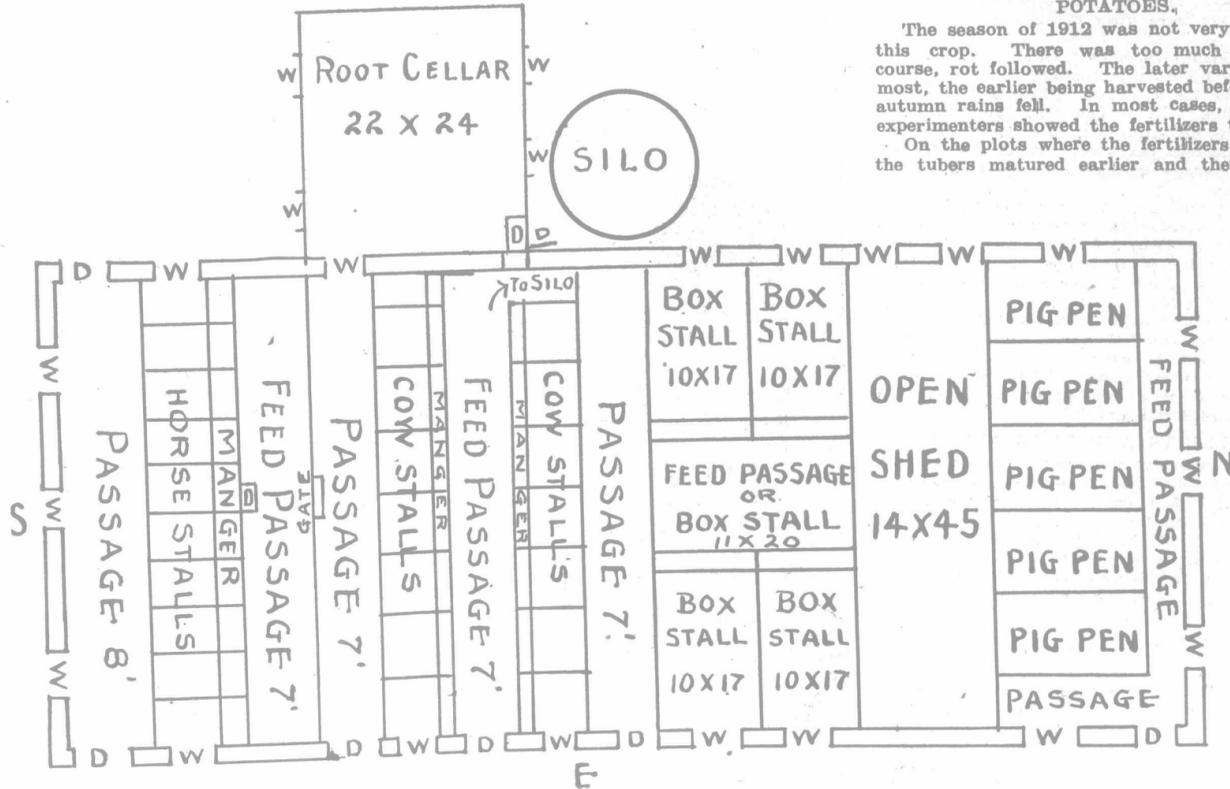
Quantities of each ingredient were applied with due regard to the requirements of the different crops and soils; the nature of the latter being supplied by the experimenter on a form sent him for that purpose. The method of calculation of profit was to find the value of the increased yield from the plots to which the fertilizers were applied over the yield of the unfertilized plot, deduct the cost of the fertilizers and the amount remaining was profit.

These experiments are very numerous and cover almost every variety of crop raised in Canada. We cannot possibly, in the limited space of an article, deal with each experiment, so we will deal with them in groups, quoting the figures of the principal ones.

POTATOES.

The season of 1912 was not very favorable to this crop. There was too much rain, and, of course, rot followed. The later varieties suffered most, the earlier being harvested before the heavy autumn rains fell. In most cases, however, the experimenters showed the fertilizers to advantage.

On the plots where the fertilizers were applied the tubers matured earlier and there was little



Plan of Stables on the Farm of Hugh Fife, Peterboro Co., Ont. Barn 112 feet by 48 feet. Scale 1 in. = 16 feet.

rot compared with the unfertilized plot, and in quite a number of cases no rot at all.

R. K. Monkman, Rosetown, Sask., conducted a most successful test on this crop. Plot 1 yielded 800 bushels; plot 2, 700 bushels; plot 3, 415 bushels per acre. After deducting the cost of the fertilizer, plot 2 showed a profit of \$188 and plot 3 a profit of \$47. Mr. Monkman, in his remarks on the experiment, states: "Plot 2 had a much healthier appearance throughout the season, and the results show a valuable increase. Plot 2 was also more uniform."

W. Rhodenizer, Bridgewater, N. S., obtained striking results. Plot 1 yielded 120 bushels; plot 2, 442 bushels; plot 3, 302 bushels. Plot 2 yielded a profit of \$117, and plot 3, \$65. He says: "The blight got on the unfertilized plot, the result being small tubers from that plot." Referring to plots 2 and 3, he says, "Best potato crop in years."

Another successful experiment was carried out at the Jesuit Fathers' farm at St. Bruno, Quebec. The yields were: Plot 1, 90 bushels; plot 2, 240 bushels; plot 3, 150 bushels. Rev. A. Bellemare, in his comments, states: "The season was very wet and cold; some of the tubers were very big—one of them weighed 3½ lbs."

These illustrate the general results obtained from a large number of experiments on the potato crop. Potash is the dominant ingredient for a fertilizer mixture for potatoes, and in practically every experiment evidence of this was obtained, plot 2 generally yielding far more heavily than the others. It was demonstrated that fertilizers help the plants to resist disease, as very little rot was apparent on the tubers harvested from the fertilized plots.

FODDER CROPS (Corn and Roots).

The experiments conducted on these important crops were in most cases successful. In one or two instances they were "drowned," others were considerably affected by the excessive moisture, but made a fair showing. Where the moisture was not too excessive, the crops naturally responded to the fertilizers and good yields resulted.

Corn experiments suffered most, but D. Winter, Thamesville, Ont., obtained good results on this crop. Plot 1 yielded 50 bushels; plot 2, 105 bushels; plot 3, 80 bushels. Plot 2 showed a profit of \$32.10, and plot 3, \$17.60. The profits would have been greater, but, owing to the excessive rains, Mr. Winter was unable to harvest his straw.

J. Riggs, Merton, Ont., took the first prize at Oakville Fair with mangels grown on plot 2 of his experiment. The plots yielded as follows: Plot 1, 510 bushels; plot 2, 842 bushels; plot 3, 591 bushels. He writes: "Condition of land very wet, but fertilized plots recovered very fast, especially plot 2 with potash, which seemed to grow right away from the others." Plot 2 showed a profit of \$14 per acre, whereas plot 3 showed a small loss.

Mr. Snowden, Newholm, Ont., conducted a two-plot experiment on turnips, plot 3 being omitted. His yields were: Plot 1, 920 bushels; plot 2, 1,324 bushels. This experiment showed a profit of over \$35 per acre after deducting cost of fertilizers.

M. Westington, Bewdley, Ont., conducted a five-plot test on turnips under the direction of R. S. Duncan, B.S.A. The following yields were obtained: Plot 1, 750 bushels; plot 2, 1,000 bushels; plot 3, 837½ bushels; plot 4, 875 bushels; plot 5, 900 bushels per acre. Each plot showed a profit, the largest being from plot 2, which showed \$18.90.

It might be well here to draw the reader's attention to some remarkable results obtained on clover by Lindsay Bros., Aylmer, Ont. On plot 1 the yield was 2,320 lbs.; plot 2, 6,496 lbs.; plot 3, 4,136 lbs. Plot 2 gave a profit of \$23.82 per acre, and plot 3 gave \$9.62.

Lindsay Bros. remark, "Season was very dry during early part, and thus the hay crop was unusually light on the average. The latter part of the season was very wet. The plots gave satisfactory evidence of the profit to be derived from commercial fertilizers."

SMALL FRUITS AND VEGETABLES.

Only a few experiments were conducted on these crops, but these proved to the experimenters that commercial fertilizers will materially increase the yields on truck crops. Market gardeners are amongst the largest consumers of commercial fertilizers, some, to the writer's knowledge, applying as much as 2,000 lbs. to the acre.

A number of experiments were conducted in the vicinity of Simcoe, Ont., under the direction of J. E. Smith, B.S.A., District Representative for Norfolk County. A five-plot test on gooseberries was carried out on the farm of W. Woolley. In this and the following experiment the plots were arranged in the order noted. Plot 1 (unfertilized) yielded 6,384 lbs.; plot 2 (complete fertilizer), 8,824 lbs.; plot 3 (without potash), 5,576 lbs.; plot 4 (without phosphoric acid), 8,353 lbs.; plot 5 (without nitrogen), 6,512 lbs. Plot 2 showed a profit of \$109 and plot 4 a gain

of \$89, while plots 3 and 5 showed a loss after deducting the cost of the fertilizers.

An experiment on tomatoes on the farm of David Johnson resulted as follows: Plot 1, 80 bushels; plot 2, 253 bushels; plot 3, 236 bushels; plot 4, 192 bushels; plot 5, 120 bushels per acre. The profits were: Plot 2, \$30.38; plot 3, \$31.35; plot 4, \$18.65, and plot 5, \$2.30.

In an article in the current number of "O.A.C. Review," on these experiments, Mr. Smith writes, "Only the efficient farmer can secure the best results from feeding his soil commercial fertilizers. Ontario has been very sceptical as to the value of artificial plant foods. To-day she realizes they can be made a source of great profit. In other words, 'commercial fertilizers pay.'"

John de Jong, Louise Bridge, Man., carried out experiments on cabbage and cauliflower. His yields in the form of experiments were 32,500 lbs.; plot 2, 40,000 lbs.; plot 3, 37,500 lbs per acre. His profit from plot 2 worked out at \$57, and from plot 3, \$37. In his cauliflower experiment the fertilized plots did not show any increase in yield over plot 1, but plots 2 and 3 matured much earlier, and thus he obtained better prices. These prices were: Plot 1, 80 cents per dozen; plot 2, \$1.35 per doz.; plot 3, \$1.25 per doz. The yield was 500 dozen per acre, and the profits were \$260 from plot 2, and \$214 from plot 3.

APPLES AND PEACHES.

A series of experiments are being conducted, over a number of years, by some prominent fruit growers in Ontario, for the purpose of obtaining useful data from our home orchards. These experiments are now entering on their third year, and are already showing good results. It is not intended to publish the figures until several years' data has been gathered. It may be mentioned that the apples from the trees of one of these experiments have been secured by the Dominion Government, for exhibition purposes, for the Immigration Department and for the International Exhibition in Belgium this year.

We trust that the experiments quoted will prove of interest. Figures are proverbially dry, but they are very necessary, especially in convincing some who loudly affirm they are "from Missouri." Would recommend such to experiment themselves with commercial fertilizers before so loudly voicing their doubts.

These experiments prove that artificial fertilizers can be used successfully under all manner of conditions, that the increase on the first crop will usually pay for the fertilizers and give a good profit in addition. The farmer should remember that the fertilizers, with the exception of one or two nitrogenous ingredients, are not if potash is not the dominant plant food for cereals by any means used up by the first crop; the two succeeding crops will benefit also.

These experiments have also shown that, even in crops, these crops will show a considerable increase if there is an available supply in the soil. The same can also be said of the other plant foods. Remember "the substance in minimum rules the crop."

Applications should be liberal—you don't stint a steer when fattening him, nor should you stint a crop if you want a good one. Should the

reader intend using ready-mixed fertilizers, get high-grade brands—leave low-grade brands severely alone; they'll probably disappoint you. If you do buy them, don't, after harvesting, tell your neighbors that commercial fertilizers are no good; just get into a quiet corner and kick yourself. The most economic way is to buy the separate materials and mix on the farm the varying quantities required to suit the different crops and soils.

In conclusion, we would impress upon the farmer who has not used fertilizers and who intends using them, to experiment on a small inexpensive scale, for it is only by experimenting that you can know what your soil needs.

Artificial fertilizers have proved a boon to thousands of farmers, and will prove a means of profit and satisfaction to thousands more if they are used intelligently.

Toronto, Ont.

F. V. THOMSON.

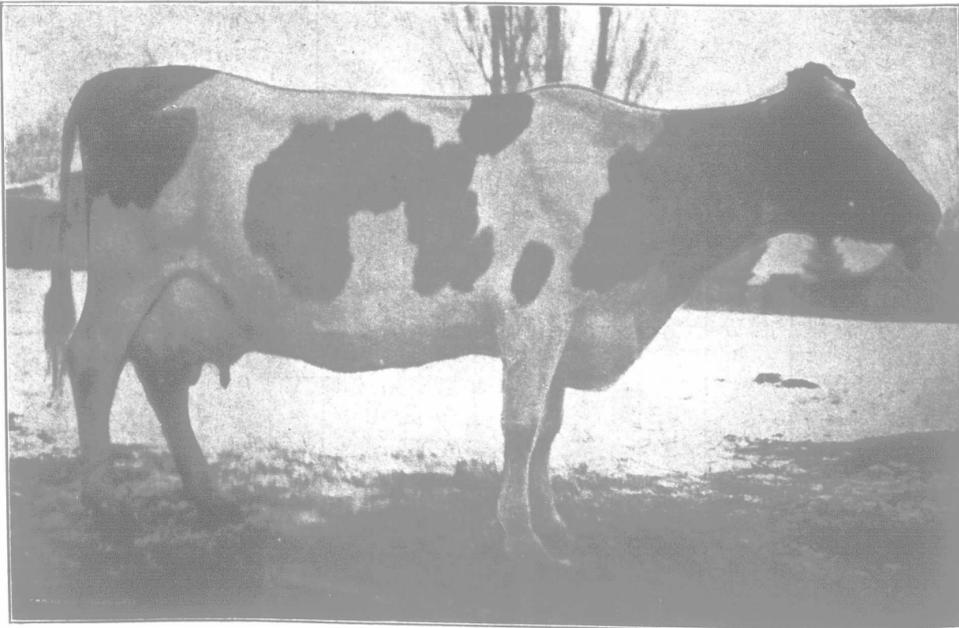
THE DAIRY.

Grading Up the Dairy Herd.

The district including the eastern counties of Ontario and western counties of Quebec is known from coast to coast as the leading dairy district of Canada; yet even here, despite the experience and success in dairying, this question of grading up the dairy herd is at present one of supreme importance.

But what is a grade and what is this question of grading? A grade is an animal which is sired by a pure-bred, but whose dam is a non-pure-bred. I notice at your fairs that many farmers, and even your prize lists, do not appreciate the true meaning of this term "grade" and do not discriminate between the grade, the cross-bred, and the mongrel. The process of grading is that of using a pure-bred bull on the common mongrel or grade cows in your herds, and in persistently using on the progeny from such mating other pure-bred bulls of the same breed. Take an example: A man uses on his herd a pure-bred Ayrshire bull, the progeny of which will contain at least one-half pure blood. On such heifers he uses another pure-bred Ayrshire bull whose progeny will be three-quarters pure-bred, and so on, till in about eleven years he will have the fifth generation, which will contain thirty-one thirty-seconds pure blood. When each district selects the breed most suitable, and then stands by it, then we will see uniformly high grade and highly profitable live stock. Look for a moment at dairy conditions in Europe. In certain dairy districts of Great Britain we notice the grade milking Shorthorn almost universal, and these cows of outstanding excellence. In like manner we note the Ayrshire, Jersey, Guernsey, and other dairy breeds and grades largely specialized and localized in districts which perfected the same and to which they are best adapted.

The Director of Experimental Farms, J. H. Gridale, has at the Experimental Farms in Nova Scotia, Manitoba, Alberta, and British Columbia started grading experiments to determine the actual profits resulting, as well as to stimulate such methods in those provinces. The provinces of Ontario and Quebec need no such demonstra-



Rhoda's Queen. Holstein cow, winner of the Dairy Test at the Eastern Ontario Live-stock and Poultry Show, in January. Owned by N. Sangster, Ormstown, Que.

tion. One of the finest examples is that of the Howick, Quebec, districts, where for miles one may travel, visiting the farmers who may each have a few pure-bred Ayrshires, but all having the best of Ayrshire grades.

Looking at this question of grading fairly, we find the following:

1.—To succeed we must choose our breed, and then stick to it. As individuals, each may select his breed according to personal taste, but unless he plans to buy the best of bulls for his own herd, he must select largely according to the breed there predominating. In unity is strength. Hence, if neighbors would put aside their personal prejudices and, as a district consolidate, there would be greater advancements and profits for both district and individuals.

2.—The mixing up of blood of dairy breeds is not only unprofitable, but dangerous. In agricultural societies where the breed of bulls has been changed intermittently we find on the whole a low grade of stock, great dissatisfaction and little success. Crossbreds in dairy cattle are seldom as good as high grades and rarely, if ever, as good as first-class pure-breds. Especially is mixing and crossing of breeds dangerous when we mate extremes, with the result that the dominant characters, such as breed, type, size, milking characters, or butter fat test of the one or the other are by this sudden change broken and the recessive and less desirable characters brought to the front. It is unnecessary to cite examples, for unfortunately we have scrub and mongrel animals in every district which illustrate such thoughtless work.

Some would argue that such crossing would produce a hardy blend more suitable for their locality. The men making the greatest successes are those who are sticking as nearly as possible to a pure breed. Let each individual and district devote their energies to perfecting the breed of their choice.

3.—No one can afford to use any but the very best bulls available. This holds equally true with pure-bred and grade herds. A good sire, no matter how high-priced he may be, is a mortgage lifter where the poor sire is a loss. These are well-known facts, but I feel that they are worthy of mention, especially after having seen the large percentage of poor pure breeds, grades and mongrels in use in this part of Canada. It remains for the representative men in each community to assist their brother farmers to dispose of these, and, in so doing, to commence work as districts rather than as scattered individuals.

GRADING PAYS.

On every hand we have a great many examples of the value of the grading up of the dairy herd. This system of breeding is profitable from three points of view—first, greater production per individual; secondly, greater selling prices and higher market values, and, lastly, greater popularity as a district, which means a greater number of buyers from other districts and countries. As an example of greater production, I would call to your notice a splendid grade cow exhibited at this show. This grade Holstein cow, Cherry, the first in her class and champion at the Guelph Show, is an outstanding example of the value of systematically grading a herd. Another example which you all know is that of the late Mr. Tillson, of Tillsonburg, who in fifteen years built up a splendid grade Holstein herd, the record of production of which was over 11,000 pounds per cow per annum, as compared with his original foundation stock of a little over 4,000 pounds. When this herd was dispersed some few years ago, cows on the market were selling at from \$40 to \$65, being the average price per cow. At Mr. Tillson's dispersal sale the average price was \$120 per cow. Again, I would cite the district of Howick as another example. In the year 1912 good grade cows were taken from this district by the hundreds. One of the best examples of unity in uniform breeding was seen only a few months ago, when in one shipment alone 217 high-quality grade Ayrshire cows were shipped from Howick Station to the United States. At this time good milch cows, fresh or springing, were selling at from \$60 to \$75, with a few extras going as high as \$90, but the average price for the 217 head was about \$90, ranging from \$70 to \$150. Could there be any better example of the value to each and every farmer in the district accruing from systematic breeding and grading up of his herd. Many more examples of a similar kind with regard to other districts could be cited. Many cars of good grade cows at an average price of at least \$20 per head higher than our markets are shipped, but these districts are all too few and the supply all too short to satisfy present demands. There is a splendid field for every locality in this part of Canada to work along the same lines as successful districts already mentioned.

WARNINGS TO BREEDERS.

There are a few warnings which we must hold before the minds of the beginner in modern dairy

breeding, one of which is that we should not use our sires when too young. It has been positively proven that by so doing we not only induce the young bull to be a non-breeder and an undersized stunted individual, but also his progeny lack in general vigor absolutely necessary as a foundation for a good milch cow. Again, to the many buyers of dairy bulls, I would say that it pays always to buy the tested sire rather than the young untried calf. This, of course, may not always be possible, but the tendency is to put the three and four-year-old bull out of the way and replace him with a yearling rather than interchange aged sires, which have proven themselves good breeders. Our agricultural association system should assist in this work, but we as individuals can materially correct this fault. Secondly, many of us are breeding our heifers too young. Probably the best example of the value of giving the heifer a chance to attain size, constitution and development before dropping her first calf may be seen in the work of Prof. H. Barton, of Macdonald Agricultural College, Ste. Anne de Bellevue, Que., who has conclusively proven to himself and those associated with him that by the time the female is four years of age she will have produced more economically a greater quantity of milk by dropping her first calf when over thirty months old than when calving for the first time at about two years of age. Aside from that, both the individual heifer and her progeny will be much larger, more vigorous and will have the constitution to produce heavily to a far greater extent than when calving too early. This fact holds true particularly in districts where farmers are rather poor feeders and the animals of an undersized nature. Remember that the maximum profits from the dairy cow are obtained between the ages of four and eight years, and these young cows are in greatest demand on our markets.

OUTSIDE INFLUENCES ON SUCCESSFUL GRADING.

There are many influences, aside from actual breeding, which largely influence our possible success in breeding operations. Undoubtedly the first of these is feeding. I will not go into details regarding same, but would say only that, unless we feed properly the necessary quantity of forage, succulent and grain feeds to both calf, heifer and cow, that we can never expect the greatest profits from them individually, nor can we expect the strong promising progeny so much desired. I do not believe in striving for heavy records, as I have so often seen fatal results in a weakened progeny, but I think that but few of us are apt to go to that extreme. The value of good condition, especially in dry heifers and cows in the succeeding lactation period, as well as the strength, development and condition of progeny, has been nicely proven by Prof. Eckles, of the Missouri Experiment Station, U.S. Let me cite the following example. Prof. Eckles had two heifers carrying their first calves. One was in high condition and the other in low condition at calving. These heifers were from equally good strains and were about the same age and development, with about equal promise. Nevertheless the heifer calf in good condition produced far more milk in the first year of milking than her mate. Even more interesting is it to note that in the first ten weeks of milking the heifer in good condition averaged nearly one per cent more in butter fat than did her mate, but she lost weight rapidly, showing that the surplus fat was going to the milk pail. At the end of the year's milking these two heifers were testing identically the same.

The calf from the well prepared heifer was better developed and more vigorous than the progeny from the ill-prepared heifer from the beginning. We have many other similar experiments which have proven both in production and in value of progeny, that it is imperative to feed well and judiciously, in order to obtain good results from our breeding operations.

One influence on which I would like to lay particular stress is that of tuberculosis. Out of 220 cows selected at Howick for the exportation previously mentioned only one individual reacted and three were suspicious. Could your locality make as good a showing as that? There are but few districts that could show such a clean bill of health. My advice would be to as nearly as possible stamp out this disease in your locality as soon as possible, in order that you may not be wasting time and money in your breeding and feeding operations. It is not necessary to slaughter infected animals, as a careful system of isolation will give you several years of valuable breeding from these cows. With the pasteurization of the milk, they need not be a source of danger, either to your own herd or to the milk consumer. Other influences on rapid and successful operations in grading are the testing of the cows for quantity of both milk and butter fat, and with testing the eradication of unprofitable individuals. The influence of exercise, both male and female, had a marked effect upon the fecundity and prepotency. Proper stabling, hav-

ing light, ventilation, comfort and convenience, has a marked influence on the prepotency, to say nothing of the health of our animals. All these and many other influences constitute the sum total of factors, which I will admit are more important than the single question of the grading up of our herds. However, without some systematic form of breeding, we will have no foundation which the other factors may assist us to develop. Let us, then, take up this question seriously in our various localities, exterminate the mongrel sire and the unprofitable pure-bred sire, as well as the unprofitable cow, and with the good common stock of our country, let each of our districts build up herds which will not only be very profitable at the pail, but will also attract the buyers from Eastern and Western Canada and the United States.

(An address by C. S. Archibald, Dominion Animal Husbandman, at the Eastern Live-Stock and Poultry Show.)

GARDEN & ORCHARD.

Growing Hotbed Plants and Celery Culture.

Would you through your valuable paper kindly describe the making of a hotbed:

1. The seed bed.
2. The bed into which they are transplanted.
3. The care of the plants until they are set out in the field, for the last time.
4. About how many plants can be grown in one bed, for instance tomatoes?
5. Describe the growing of celery from start to finish.
6. How should tomato plants be cared for until they are in bearing?

F. C. S.

Our enquiring friend has handed in a tolerably large order; in fact whole volumes have been written upon some of these questions. In this issue an experienced gardener contributes an article on hotbed construction which gives details required for enquiries No. 1 and No. 4. Black muck or mellow, rotted mould from an old manure pile has been used for several years for the seed bed by a member of "The Farmers Advocate" editorial staff. It has been found better to take this muck from an open, swampy space where exposed to sun and air rather than for a shaded place or bush lot. Expert celery growers have found that fresh, muck land is often too "acid" for good results and needs "liming." The seed of various kinds is sown in the hotbed rows about 5 inches apart which allows for a little working between.

2. This is the cold frame formed of planks at least one foot wide and should have six inches of good rich mellow soil in bottom. This we use chiefly for tomatoes transplanted from hotbeds where they become strong, showing the second pair of leaves and put them in rows about 7 inches apart each way. For a couple of years past this has been done from May 15th to May 20th and the tomatoes are left in the cold frame until after the middle of June or when danger from frost appears to be past. Sometimes they are in blossom when transplanted in the open garden, and are taken up with a lot of earth without disturbing the roots so that they will keep right on growing. In the hotbed and cold frame the plants are sprinkled almost daily with a watering can throwing a fine spray. A heavy canvas is always kept in readiness to cover the cold frame during cold nights when there is any appearance of frost. Several varieties early, medium and late are grown and the plan described has given excellent results particularly in securing early fruit of fine quality.

5. Celery seed being slow to germinate needs encouraging conditions, mellow soil, warmth and light. After the little plants have made a nice start in the hotbed rows (or broadcast plots as most gardeners probably sow the seed) we move them into rows about four inches apart and put them about 2 or 3 inches apart in the rows, which allows space for a little working between and a strong root growth. An ounce of seed will furnish about 3,000 plants. Last year for early use we transplanted when the plants were about six inches high, to the celery row in trench on June 14th and those intended for winter use 8 or ten days later. A great deal of celery for main crop is transplanted in July by professionals. In the same row the plants are placed 6 inches apart. A low-lying, moist black loam is the orthodox soil for celery, but it can be successfully grown in ordinary garden soil of good quality. The writer's plan on an ordinary clay loam is to spade out a trench 10 or 12 inches deep, filling the bottom with rich, well-rotted manure or a mixture of loam and manure. This holds the water which must be freely applied to promote growth in a dry season. As the plants grow the soil is hoed in toward the row, as rich soil and plenty of moisture are the staple needs of celery. What is called "The new Culture" consists in making the plot rich and well-pulverized to the depth of about six inches, setting the plants 5 or 6 inches apart in rows ten inches apart so that the plants in time shade themselves. We notice, however, that the professional growers put them in rows 2½ to 4 feet apart so as to permit of horse cultivation. It is well to transplant about the time of a shower. We have had our best satisfaction with the Paris Golden variety, and banking up with earth has given better results than banking up with boards. The later grown crop is more crisp and of a finer flavor. We leave it out as long as possible but try to get it into the cellar dry and before heavy frost and snow come. A cool place for storage is

best just so that it will not freeze and pack the roots in moist sand. A good deal has been said of late in some of the garden journals in favor of the mulch system of growing celery. The plants are set in rows 18 inches to 2 feet apart and 6 or 7 inches in the row. They are cultivated and kept clean until 5 or 6 inches high. The mulch of stable manure is then spread between the rows and with rake or fork it is pushed up toward the rows keeping it level and 2 or 3 inches thick. A short time before storing this celery is bleached or "thrown up" with boards. With late celery where the rows are further apart the mulch is applied for six or eight inches on either side of the row of celery and the rest of the space is reserved for horse cultivation. A Wisconsin grower sums up the advantages of the mulch system as follows—(1) Conserving moisture during drought, (2) saving irrigation, (3) furnishing humus and fertility for the next year's crop, (4) ensuing a crop of large stalks, (5) saving lumber, a 10 inch board with mulch being as good as a 12 inch board without. The chief difficulty is obtaining and applying the manure. Very fresh manure is not recommended and the previous cultivation should be deep. A New Jersey gardener reports splendid results from mulching tomatoes growing ten tons on half an acre of barren sand hill and a fine crop of lettuce and radish afterward. About 20 tons of manure were applied to the acre. We trust some Farmers' Advocate readers who have had experience with these plans will report results or try them this year and report after this year's crop is secured. Every farm garden should include a little row of this most wholesome and savory vegetable.

Importation of Trees and Plants into Canada.

All persons who are accustomed, or intend, to import trees, shrubs, plants and other kinds of vegetation into Canada, or to ship such trees and plants from one province to another, should make themselves thoroughly familiar with the regulations of the Dominion and Provincial Governments in this matter. If this is not done inconvenience and possible loss may result owing to the neglect to comply with the requirements of Dominion or Provincial governments, which requirements are necessitated by the danger, always present, of the importation of dangerous pests into Canada or their spread from one province to another.

The regulations governing the importation of vegetation of various kinds into Canada and the Dominion and Provincial laws under which they have passed have been collected in a convenient form and published as a bulletin with explanatory notes by the Dominion Entomologist, Dr. C. Gordon Hewitt. This bulletin entitled, "Legislation in Canada to prevent the introduction and spread of Insects, Pests and Diseases destructive to vegetation, with Regulations regarding the importation of vegetation into Canada", is published as Bulletin No. 11, Second Series, of the Experimental Farms Branch of the Dominion Department of Agriculture. It also forms Entomological Bulletin No. 6 of the Division of Entomology. It may be obtained free on application to the Publications Branch, Department of Agriculture, Ottawa. The laws and regulations of the Dominion Government and of the Governments of those Provinces possessing such legislation, namely, British Columbia, Nova Scotia, Ontario and Prince Edward Island are given. A full explanation is given of the regulations which must be observed by persons importing nursery stock, which comprises trees, shrubs, plants, vines, etc., into Canada and into the provinces mentioned.

A perusal of this Bulletin, even by those who do not import or intend to import plants, will afford the reader an excellent idea of the strict supervision and care that is being exercised to prevent the introduction of further insect pests into Canada. More than half of the serious pests of Canada are not native to the country but have been introduced or have migrated hither. The object of this legislation is to prevent further introduction and spreading and the benefit which is resulting from the careful inspection, and treatment when necessary, of imported plants is incalculable and is the means of saving the country enormous losses.

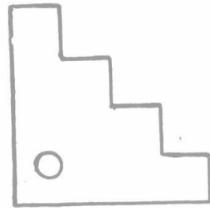
Icing Would Not Retard Buds.

"It would be money spent in vain," commented R. B. Cruickshank, horticultural expert, of the Ohio College of Agriculture, Ohio State University, when shown recent newspaper reports of efforts by an eastern fruit grower to retard development of his fruit by placing 100 tons of ice per acre around his trees. Spring conditions were said to prevail, and the grower feared that the trees would leaf out and the leaves and flower buds be destroyed by later low temperatures. By placing the ice around the trees he expected to freeze the ground sufficiently to delay root action, and possibly to cool the atmosphere. "There have been many experiments," explained the horticulturist, "which show conclusively that the action of buds is absolutely independent of any root development. With a plant rooted in frozen ground and a part of the top trained into a greenhouse, the latter portion will leaf out fully, although the roots may be dormant. Florists often force peach blossoms from twigs during the winter, although there may be no root system in connection." Mr. Cruickshank also mentioned any possibility of cooling the atmosphere by the "ice-plant" method, declaring that the decrease in temperature would be so slight as to almost be imperceptible. One hundred tons of ice per acre would have no effect on the budding of trees.

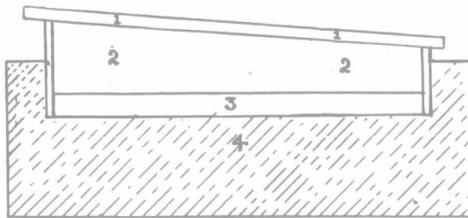
The Management of Hotbeds.

Editor "The Farmer's Advocate":

The value of hotbeds, their care and preparation explained in a practical manner might induce more to produce early vegetables and flowers on the farm. On the farm I have observed that the women are usually the gardeners. The men find it a great burden to do some of the rougher work of preparing the ground or fencing off a piece of land adjoining the house for a garden. Hotbeds are easily managed with a little study. The farm supplies the most important item, namely horse manure. The market grower and city gardeners often find this hard to get. The first step is to make a frame either for one, two or three sashes, preferably two, (see sectional drawing.) Two-inch planks are most substantial, although one-inch boards are satisfactory. Have the frame about 2 feet at the back and 18 inches at the front, this gives a nice slope for rain and to secure sunshine. Construct the frame as neatly as possible to fit the sash closely and to slide smoothly. Any open parts of the frame or sash must not possibly exist, it cools the plants so much and keeps a low temperature. Four to six loads of manure from the stable is required, half straw and manure I find the best, this manure should be collected under cover where it will not heat. I would prefer not using manure any older than two months.



Ventilating Block—Inch Wood.



Hotbed Sectional Plan.

1, sash; 2, frame; 3, soil or seed boxes; 4, manure.

Making the bed.—The aspect for the bed is a sunny spot, a sheltered southern exposure, in front of the barn or some building, fence or hedge, that will break north winds. The spot should be high, dry, warm and convenient. I have found the first week of March early enough to commence operations; we are not so busy then. Clear all snow away from the selected place. Place a layer of straw for a foundation first. This helps to dry up the moisture from the ground when the manure heats. Make the bed 20 inches or so wider all-round than the size of the frame. Prepare the manure beforehand. Throw it all up into a pile cone-shaped, quite loosely. In four or five days, it will commence to heat, throwing out steam. Insert a stake into the middle of it and it will let you know how the pile heats. Give the manure another turn over as before and allow it to stand for two days. Make the bed now, by putting on layers of manure well shaken out. Tramp this firmly, add another layer till completed, having it fairly level. A hotbed that is well made, by layers of manure well treaded down, which is the success of it, will give weeks of steady heat. Two feet in depth of manure is not too much. A secondary bed made in the middle of April, does not require such a depth. Set your frame on the manure bed, and put on the sash with a little tilt at the back with a ventilating block of wood, cut out as shown, attach it by cord or chain behind the frame for handiness. In three days, heating will commence and another tramp over will firm it. Then put on the soil. With hotbeds in view a load of soil is put under shelter in the fall and prepared. Good free soil that will not cake hard, loam, decayed manure, and sand mixed up is alright. From four to five inches of soil is sufficient on the bed, nicely levelled and sifted through a piece of half-inch netting is a commendable seed bed. The first day or two the heat will be violent, sending up rank steam which must escape by a slight elevation of the sash. Thermometers for the purpose may be inserted in the soil to test the degree of heat. In the course of a day or two, it will be safe to sow. A safe guide is when the moisture on the glass is clear and not muddy looking, also by feeling the warmth of the soil. Manure should be packed outside the frame right up to the top 20 inches wide and sacking, burlap or canvas over the sash at all times, till seed germination takes place when light and air is admitted, covering up well in the evening and removing when the sunlight gets around. The frame can be constructed at home and the manure is at hand, the sash is not an expensive item. I have used double windows for a substitute. Six feet by three feet six inches is a most convenient size. The following suggestion I practise myself. I make one good bed, manure 2½ feet in depth; instead of putting in five inches of soil, I only put on about two inches. Sow my seeds in boxes 3 inches deep, a useful size to handle,

also use pots for very small seeds, particularly those that are of slow germination, so that you can plunge the pot down among the manure. This is the best method for small growers, with tomatoes, peppers, onions cabbage, cauliflower, celery, and all kinds of flower seeds of unequal germination periods. You can remove them as required to other quarters, water as required and shade those that are late. For transplanting purposes, having your seed boxes with each variety by itself, makes it very convenient. Below is a table showing what I have raised repeatedly in what I call my "hotbed proper," a 3-sash frame, sowing between the 15th and 20th of March.

Tomatoes.....	1,000 plants
Celery.....	2,000 plants
Onions.....	2,000 plants
Cabbage.....	1,000 plants
Cauliflower.....	1,000 plants
Lettuce.....	2,000 plants
Melons.....	100 plants
Asters.....	2,000 plants
Stocks.....	1,000 plants
Verbenas.....	1,000 plants
Marigolds.....	1,000 plants
Phlox.....	1,000 plants
Antirrhinums.....	1,000 plants
Nicotiana.....	1,000 plants
Miscellaneous Seeds.....	4,000 plants

While I do not use but a fraction of these plants for our own garden, I select the best, and give lots of seedlings away. It shows the possibility of the work of a 3-sash bed, to germinate this amount of seed and the seedlings can remain there for three or four weeks and on a strictly commercial basis this amount could be exceeded.

A. V. MAIN,

"A fine example of shade-tree butchery came to my notice the other day," says an instructor from an American College of Agriculture. "Last spring, in an attempt to head back some fine soft maple trees, the limbs had all been cut off, leaving only a few stubs. Not enough foliage was left to manufacture food for the trees, and the hot summer sun beat down in full force upon the unprotected trunks and branches, with the result that a number of trees have died. The dead bark is falling away from the tree trunks, which stand as monuments to someone's ignorance of tree pruning. A wiser course would have been to leave a few limbs for shade, and also to keep up the light processes tree."

POULTRY.

Poultry as a Side Line.

Poultry is fast coming to be considered as one of the main spokes in the wheel of successful farm practice. Compared with the money invested therein, there are few phases of the average farm which show a better annual credit balance than poultry. Yet poultry work is in its infancy. Up to very recently almost nothing had been done to improve the conditions under which the ordinary farm flock labored daily to pay its way, and at the present time comparatively few flocks are kept under anything even approximately the best management. Farmers have been inclined to ignore the flock and to allow them to "scratch" and hunt for the greater part of their living, and their shelter has often been any place to which they could gain access. What would the money-making hog, the profitable sheep, the gold-mine dairy cow, the wonderful beef steer, or the noble drafter yield their owners under such care? The balance would surely fall on the wrong side of the book. All credit to the busy hen that she has been able to yield a profit under such conditions and has been able to show through the few channels of better care, for there has always been some who gave considerable attention to their poultry, that she is worthy of the best things in her line. Farmers are gradually realizing that what they one time termed the "necessary farm nuisance" is in reality one of their best holdings from the viewpoint of net returns. A beginning has been made towards better farm poultry conditions, but it is only a beginning. No other individual is so favorably situated as regards poultry production as is the man on the farm. He has ample room for "runs" and buildings so essential to success, and gets at first cost the greater portion of his feed, of which he can grow a great variety. Instead of being a damage to crops, judiciously handled, poultry can be utilized to benefit them. A corn field or an orchard is one of the best places in which to run chickens.

How should the farmer proceed to make the most out of his poultry? The first thing necessary is a suitable house or houses in which to keep them. Before this is settled upon, it is necessary that he know how many birds he is going to keep, and in this connection it is generally wise to provide for a few more than the first estimate covers. The foundation stock should be comprised of best laying strains of the breed

or breeds decided upon. In most cases it is not advisable to carry more than one breed, and this should generally be a general-purpose breed. Remember this refers to conditions on the average farm, and not to the business as carried on by a poultry fancier. Be sure to get a laying strain, and under no condition is it wise to commence with cross-bred or mongrel stock. Early-hatched pullets or year-old birds are preferable. Mate with these the very best available cock or cockerel, also from a laying strain, and with good feeding and care success must follow. Feed liberally on mixed grain, keep rolled oats in the pen all the time and, if possible, give skim milk to drink. For green food, mangels, cabbage or clover leaves are good. See that the birds have plenty of grit and shell-producing material. Keep the house clean, light, dry and free from drafts. Freedom from drafts does not mean that the house must be over-warm. The open-front house is meeting with the most success at the present day. Give the birds as much freedom as possible.

Is there money to be made from such practice? We have no hesitancy in replying in the affirmative. In the January 23rd issue of "The Farmer's Advocate" there appeared a short article which proves the point conclusively. A net return, after paying for all feed, of \$184.84, in one year, from thirty pullets, should convince the most sceptical. These pullets were not exceptionally good ones as to breeding, but properly housed and cared for, they proved very profitable. More hens can be kept under systematic care than under haphazard methods, but if the better care made it necessary to decrease the size of the flock, the profits would be far larger than now are made on the farms where the poultry is neglected. This is a question for the farmer's son, the farmer's wife and the farmer's daughter to be interested in. Study poultry, and once you have a grasp of what better care means for the flock, insist upon having a better flock and a more up-to-date pen in which to keep them.

THE FARM BULLETIN.

An Appreciation.

The death of John Jackson, of Abingdon, Caistor Township, one of the best known residents of Lincoln County, Ontario, occurred at his home on January 3rd, aged 78 years. He was born July 17th, 1834, near the farm where he has always lived. His parents came from Blairgowrie, Scotland, and located in Caistor when it was almost an untracked wilderness, and about the only neighbors were the denizens of the forest.

Although his education was only such as could be acquired during a short attendance at a pioneer school, his native ability and aptitude were such that by vigorous and diligent exercise of these talents he was able to cull from the passing years a remarkable fund of exact knowledge. Owing to his rugged honesty, sterling integrity and unique ability to grasp the truth of questions whether social or political, his opinion was respected by all who knew him. His blameless life was a continuous record of patriotism and integrity and he seemed to pass untouched through the conflicts that grew out of the ambition of others.

While at all times preserving a perfect consistency with himself, he at the same time maintained an unswerving and unselfish fidelity to his convictions. He possessed in a remarkable degree the ability to get the most out of life and his later years were like a series of lessons to teach us how to meet old age.

Each year he became more and more genial, and cherished larger sympathies with his fellow men. His courage held age in abeyance just as his optimism held grief and disappointment far off.

Until a few months before his death, time appeared to set on him no mark, and he seemed to preserve in all its freshness the youth of the soul. Great in heart, steady of purpose, gifted in mind, reverent in spirit, he went through life dispensing blessings, and it is ours to bear witness to his character, to do justice to his virtue and to unite in paying honor to his memory.

He was best known and will probably be longest remembered for his long and successful career as a breeder and exhibitor of Southdown sheep, of which he was an expert judge. Nearly forty years of his life were spent in establishing and perfecting the "Woodside" flock of Southdowns.

It was thus devoting more than one-half of his life to faithful care in selection, devotion in the study of types in breeding, and the judicious feeding and care of his flock that such success as came to him was possible. He loved his flock with as much devotion as many bestow on their children, and his judgment was so much respected that it carried with it the stamp of authority.

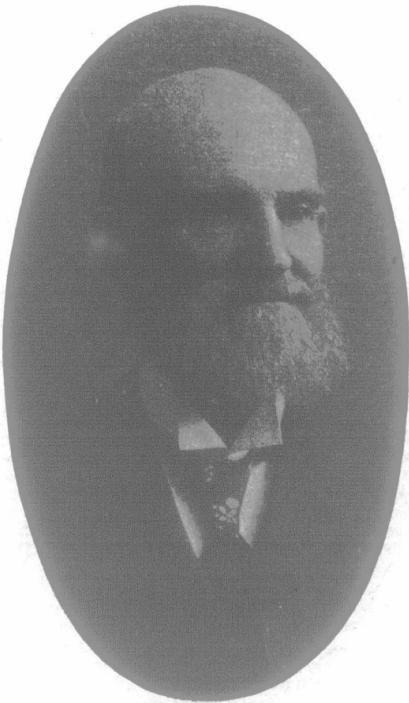
Always on the alert for improved methods, he took a keen interest in everything that helped to advance the interests of agriculture throughout the Dominion. Especially interested in stock-raising, his name had for many years been closely identified with the different associations that have had for their object the raising of standards, improvement in methods and general efficiency and the best methods for aiding and encouraging the breeder.

He was honored on a number of occasions by both Provincial and Dominion Governments by being commissioned as instructor for "Farmers' Institutes" through-

out the Province of Ontario and as an expert judge in the Maritime and Western Provinces.

He had for many years been a director on the board on the Toronto Industrial Exposition and also on that of the Guelph Fat-Stock Show.

While he had out-lived many of his older associates in the council chamber and in the arena, it was his wont to extend a cheerful greeting to all new-comers. Who among these many associates—as they come together in the years to come—will not miss the wise council and the cheery smile of the "Grand Old Man"? Mr. Jackson was a constant subscriber to the Farmer's Advocate from its commencement, and a frequent contributor to its columns.



The Late John Jackson.

Nature's Diary.

By A. B. Klugh, M. A.

A frequent visitor to the orchard during the winter is the Hairy Woodpecker. It is more often seen here during the winter, because in the summer it resorts to the woods to nest.

The woodpeckers render a most important service in the conservation of trees by extracting from them the larvae of certain beetles, which are known as "borers." These larvae bore tunnels under the bark and into the wood of the trees, and it has been estimated that six of these larvae in a tree mean the death of the tree. Against most insects man can fight with poison, spray or wash, but against borers he is practically helpless, for he cannot locate them. But the woodpeckers can not only locate them, but extract them and devour them. How does the bird locate them? By sound. If they are actively boring, it hears them. If not, by tapping the tree it finds the tunnels.

The woodpeckers have not only very acute ears, but they have many other adaptations which help them in securing "borers."

The bill is strong and chisel-shaped at the tip—an admirable cutting tool. The tongue is extremely extensible, because it is not attached at the back of the mouth, as in most birds, but the "horns" of the tongue extend backwards as slender, jointed, bony rods, curling up over the skin and the bone to the eyes, or even beyond. These bony rods are enwrapped in highly developed specialized muscles, by means of which these birds can thrust out the tongue several inches beyond the tip of the bill. The tip of the tongue is sharp-pointed and barbed. Thus the woodpeckers can extend the tongue into the tunnels of the "borers" and spear them.

The feet are also modified, as instead of having three toes in front and one behind, as in most birds, they have two toes in front and two behind; thus obtaining a better grip on the bark while in a vertical position. The tail

feathers, too, are stiff and pointed at the tips, and the tail acts as a brace while pecking.

There are seven woodpeckers in Eastern Canada, and the following "key" will be found of service in identifying them in the field.

(a)—Upper parts black and white in spots, and streaks.

1.—Outer tail feathers wholly white.—Hairy Woodpecker.

2.—Outer tail feathers white, barred with black.—Downy Woodpecker.

3.—Crown crimson, black patch on breast.—Yellow-bellied Sapsucker.

(b)—Upper parts not black and white in spots and streaks.

1.—Size large (length, 18 inches), head with red crest.—Pileated Woodpecker.

2.—Back black, head not red or crested.—Arctic Woodpecker.

3.—Head and neck red.—Red-headed Woodpecker.

4.—Cinnamon-brownish, rump white.—Flicker.

Of these the Arctic Woodpecker is common only from Muskoka northwards, and is only occasionally seen in the Southern portions of Ontario. It is a very unsuspecting bird, and in the Northern woods one can stand within a few feet of it and watch it at work. The males have a yellow patch on the nape of the neck. In the forest this bird is a very efficient protector of trees, as seventy-seven per cent of its food consists of wood-boring larvae.

The Pileated Woodpecker also is a bird of the forest, and is now found in the cultivated parts of the Province only, in the thickest woods; which remain here and there. In the northern woods it is fairly tame, but in the settled districts it is extremely wary, and its presence is usually detected by its work, which consists of large mortise-like holes cut into dead trees. They sometimes cut into stubs to such an extent that they fall. These excavations are made in search of borers and ants. I once watched a pileated woodpecker at a distance of a few feet as it was at work on a stump. As he chopped away, the power of his blows was tremendous and chips and large pieces of wood flew in all directions. He did a little excavating, then stopped and ate the large black ants which he had exposed, then fell to work again and thus proceeded until he had demolished large portions of the stump. The male has the crest wholly red and a red patch on the cheeks, while in the female the crest is half red and half black, and there is no red on the cheeks. The only note I have heard this bird utter is a loud cackling sound while flying. The nest is in a hole in a tree, usually a dead one, at from twenty to sixty feet from the ground.

Speaking of the Pileated Woodpecker, reminds me of a remarkable coincidence. One day as I was lecturing to a class of students of the MacDonald Institute, on the campus of the O.A.C., I mentioned the pileated woodpecker, and said how rare it was in that locality, and happened to look overhead and said, "But there goes one!" and sure enough there was "one of those birds flying fairly low over the campus."

Stop Misusing the Word "Maple."

An influential deputation representing the maple sugar and syrup industry of the Eastern Provinces of Canada waited recently upon the Hon. W. B. Nantel, Minister of Inland Revenue, and Hon. Martin Burrell, Minister of Agriculture, at Ottawa, asking that they be safeguarded and the public protected from the great number of "essences," "flavorings" and compounds sold improperly as "maple." In support of protection against such impositions which jeopardize the genuine industry, it has been frequently pointed out that the security, growth and high standing of the Canadian dairy industry are largely due to the clear-cut legislation against filled cheese, bogus butter, and kindred compounds masquerading as the real product of the cow. What the deputation ask for as being only right and reasonable is the adoption and enforcement of such regulations as will stop the misuse of the word "maple." If such preparations are to be sold, the maple syrup and sugar makers not unreasonably ask that they be required to sail under their own colors. The farmer has enough handicaps to meet without being ground under such competition as this. The deputation confidently expect the prompt and favorable attention of the government.

In the twelfth week of the second North American International Egg-laying Contest, at Storr's Experiment Station, Connecticut, the English pens of White Leghorns, owned respectively by Thos. Barron and Ed. Cam, led with a total of 243 and 233 eggs each.

Fall Fairs.

By Peter McArthur.

Isn't there an old fable about an ass that wrapped himself in a lion's skin and tried to ramp and roar like the king of beasts, and got himself laughed at and kicked in the diaphragm and otherwise subjected to "grievous bodily harm." I seem to remember such a fable, but I cannot lay my hands on it and the children, who are at the fable-reading stage of education, are all in bed and I cannot ask them. Anyway it doesn't matter, for I do not want to quote it. I simply want to have the moral of the thing in the back of my head to keep me on the right track, while I indulge in an old-fashioned grumble. This morning I got a letter from a correspondent that finally brought to a head a number of things that I have been feeling peevish about ever since coming back to the country. Broadly speaking I have been mourning the disappearance of all kinds of country amusements. There is no encouragement for local talent of any kind, either for the intellectual talent for reciting and singing, or the physical talent for jumping or catching the greased pig. If we have an entertainment we import singers and elocutionists, and if we have a fall fair it must be an imitation World's Fair. The lion's skin of city attractions is being stretched out in every direction, and we can see long ears peeping from under every corner of it. Every town and village must be citified in everything it does, and the result is a lot of low-grade attractions entirely lacking in the old-fashioned and forever-artistic merit of sincerity. I do not think I am peculiar in my tastes, but if I cannot see the best I want to see what is honest and sincere. It has been my good fortune to hear some of the world's best entertainers, but when I cannot hear them I prefer the honest sing-song recitations of a school-boy or school-girl to the conceited caterwauling of some half-baked elocutionist. In the same way if I cannot see a real world's fair I can enjoy myself thoroughly at an old-fashioned country fair where the exhibits are those of honest people who are trying to excel in their own way. But when we have an entertainment nowadays we must import talent, and when we have a fall fair we must have a midway and circus stunts by hamfatters, who would be hooted in the places where such performances really belong. We must be citified at any cost, and the result is tawdry entertainments and fairs, when by employing local talent and encouraging local effort we could have entertainments and fairs that would be wholesome and helpful.

My correspondent, whose particular theme is agricultural exhibitions, sent me a copy of the annual report of the directors of what should be one of the best fall fairs in the country. He marked in it the passage that started me grumbling. Here it is:—

"The midway was not filled as usual, and the cause is not far to seek. Under present conditions everything is combined, even midways, and a bargain must be struck with some 'boss' when we can fill up; there are set standards of prices and we cannot hope to fill them at bargain rates. Most of the shows arrange now in the beginning of the year, and this by means of the 'Bill-board' or a kindred publication, and if the society see fit to fill a certain sum for the amusements or free attractions, these offer what they will supply for the money, and time and cash will be saved—the attractions and midway can be properly advertised, and the crowd gathered—for no one thing is now so evident as that the agricultural is the small end of the day and attractions the main feature, not only to the young, but their sedate elders. It is no use blinking facts, and as the County Town, and the main fair of the district, we should rise to the occasion and make it a 'stunner,' leaving all others a lap or two behind."

If a point has really been reached where the agricultural is the small end of the day and the attractions the main feature, it would be just as well to give up having agricultural exhibitions altogether. But I think this is an entirely mistaken idea. I know that in New York State, New Jersey, and on Long Island the purely agricultural fairs are the ones that draw the crowds. The cheap excursion rates make it possible for almost everyone to see the best in the way of attractions at the big centers, and it seems to me that it is foolish for the small places to compete along these lines. From what I have been hearing, the chief complaint against our fall fairs is that they have so largely fallen into the hands of professional exhibitors and fakirs who "doctor" their exhibits. I venture to think that if the directors of some country fair would have the courage to cut out the midway features, exclude the professionals and fakirs, and make their exhibition honestly reflect the work done by the community in which it is held they would

cut down expenses and have a drawing card that would really draw. Moreover, a fall fair conducted along this line would be a powerful influence for the good in the community. It would really encourage agricultural production and local enterprise and justify its existence. Personally I would much rather see sports by local athletes—running, jumping, ball games and such things—than tight-rope walking and acrobatic feats by "artists" who go through their turns with affected airs and smiles that E. E. Sheppard once described as being full of insincerity and false teeth. I agree entirely with my correspondent when he says:

"I want to see our exhibition where it belongs, among the best Provincial Agricultural Shows with agricultural written big—not put in as an afterthought. I do hope something can be done to rescue the institution before it is lost in the whirlpool of Coney Islandism." If they will only stop trying to wear that lion's skin they will be all right.

But say, do you remember the old-time country fall fairs before the days of vaudeville turns and hand-painted chickens? Every day when going to the post office, I pass the spreading tree from whose branches I watched my first horse race. I would climb that tree right now and not care who was looking if I thought I could feel again the thrills and excitement of that by-gone day. I not only knew the jockeys, but I knew the horses—all except one. My favorite was a bay mare somewhat given to what the society reporters call "om-bong-pong" on account of living on pasture and her rider was one of my youthful heroes, perhaps because he was said to be "a leetle wild." But in spite of high hopes and a blue-beech gad our horse didn't win. The stranger took the prize, but I never felt that it was fair, and I leave it to you. For three weeks or a month before the show the stranger kept in his mare and fed her on dry timothy and oats, and had her all "ganted up." And he had a real raw-hide riding whip. Still it was a great race even if we did lose, and never since have I seen a race by which I was so deeply moved. And after the races there was a base-ball match, and when the catcher got "het up" and excited he threw his vest on top of the Temperance Hall, and after the game was over had to put up a rail and climb after his vest. And the winning team won by at least twenty runs. And then there was the fat pig—so fat he couldn't stand up and took his meals in bed, like a person of leisure. But I mustn't get started on the exhibits or I'll never know when to stop. It was a few years after this that the "Pride of the Valley" man began coming to our fair. What a wonderful man he was, with that eloquent voice and long flowing hair. They don't make medicine like "Pride of the Valley" any more. It was good for man and beasts, and indispensable to fowls. It toned your muscles, stimulated your circulation and renovated your liver. It brightened your eye, restored your complexion, and stopped your hair from falling out. And all it cost was twenty-five cents, one quarter or two York shillings a box. One fall I was feeling low and I bought a box. The stuff looked as if it had been culled from the Ontario weed book, but I made a tea from it as instructed, and took a dose. My recovery was instantaneous. I forgot everything except the taste in my mouth. No, they don't make medicines like that any more, and there are no gifted orators like the man who sold the incomparable and universal panacea. Both medicine and vendor belonged to a more robust age. We are living in an age of soft speech, and sugar-coatings and vaudeville stunts. Ehue! ehue!

N.S.F.G.A. Golden Jubilee 1863-1913.

This year the citizens of Middleton were privileged to welcome the "Fruit Growers" in the best series of meetings they ever held. A vote of optimism and confidence in each other, and in the industry of fruit growing and marketing as carried out by the great co-operative movement. The following address of the President, S. C. Parker, is full of reminiscence and optimism.

It seems to me that the Association can, with justice, congratulate itself on the progress of this organization and the great fruit industry which it represents. For the half century of its existence this Association has been in the front, organizing and developing the fruit interests of the Province, and to-day the record of the Fruit Growers' Association is the record of fruit growing in Nova Scotia. Twenty years ago the apple industry was in its infancy. We were exporting 50,000 to 100,000 barrels annually. The orchard was a side line of the general farmer. Clean cultivation and cover crops were a myth; spraying was practically unknown. Opportunities for education in fruit farming were entirely lacking. To-day we are facing a crop of two-million barrels annually, and five millions in the

near future. Indeed, W. H. Chase, perhaps the best commercial authority in the province, predicts a crop of five-million barrels in five years. Our growers, educated in best methods, equipped with up-to-date machinery, united and determined—realizing that with us it is apples or nothing, are pushing Annapolis Valley apples into all the markets of the world.

This Association is largely responsible for the remarkable advance in facilities for agricultural education. Nearly twenty years ago the Association founded a Horticultural School at Wolfville. This school, which was carried out with much success for twelve years, was organized and managed directly by this Association. The Association then entered on a campaign for further advancement, and after years of discouragement and apathy, succeeded in inducing the Provincial Government to found the Agricultural College located at Truro. This institution, under the vigorous direction of Professor Cumming, has become a mighty factor in the upbuilding of the basic industry of agriculture. During the past year the devoting of the Federal Government grant to further enlarging and equipping the College, places it in the front rank of institutions of its kind. With the Agricultural College fairly launched, the Association took up the matter of practical work. For five years the campaign was waged with unceasing vigor. Success again crowned the effort, and the Experimental Station at Kentville is also the direct result of the work of this Association. The vigor with which development work on the new Station is being pressed by the Director, Professor Blair, presages great things for further advance in fruit growing. To those of us who served through this long and hard campaign, the name and figure of R. S. Eaton stands prominent. It is but scant justice to name Mr. Eaton as the always foremost leader in the struggle for advanced agricultural education.

The co-operative movement, which is revolutionizing the commercial end of the fruit business, is another child of the Association. During the past twenty years co-operation has been taught and promoted by the Association, as individuals and as an organization. In 1897, under the auspices of the Association, a co-operative company was incorporated with a capital of \$50,000.00. As specified in the charter the objects of the company were:—(1) to erect warehouses, (2) to provide transportation, (3) to regulate shipments, (4) to appoint agents in Great Britain and other markets for the sale of Nova Scotia apples. The men who were behind that movement, some of whom are here to-day, had the keen business foresight to see the necessity and provide an organization, practically the same as is being worked out to-day by the United Fruit Companies. Lack of co-operation prevented any sustained attempt at organization under the provisions of the charter, and nothing was accomplished. The people needed fifteen years more wandering in the wilderness and further chastenings by various plagues, to feel more keenly the importance of getting together and doing business. The organizers of the first local Co-operative Society were working members of the Association. The act of incorporation, under which all the local companies are working, was prepared and passed through the Legislature by your own Executive. The officers and executive of the Central Company are, many of them, old and tried members of this body. The Association to-day extends a hearty welcome to the representatives of the Co-operative Companies, and would assure them that we rejoice at the measure of success that is following them. We need you and you need us; let us stand together one and all, for advance work.

The officers of the Association have been strong men. My first recollection of its meetings, was with J. W. Bigelow in the chair. For twelve years Mr. Bigelow was a live-wire president. He gave freely of his time, money, and trained business ability, in founding on a broad, substantial basis the future of the Association and the fruit industry of the province. The commercial fruit business of Nova Scotia owes much to J. W. Bigelow. I would record here, also, the name of R. W. Starr, who gave me my first lessons in associational work, and whose life and efforts for the past fifty years have been largely devoted to unselfish work in advancing and upbuilding the fruit interests of this province. There were many others, some of whom are here to-day, and many not now enrolled with us, whose names are on "The Great Scroll up Yonder," but whose memory is fragrant.

So much for the past,—what of the future? We are at a crisis in the history of the Association—at the parting of the ways. It has been said we will be growing five-million barrels in 1918. What will we do with them? Fruit growing has become fashionable. An enormous increase in apple production is coming, the world over. Ontario and New York are cleaning up their old orchards and planting new trees by the

thousands. British Columbia and the Pacific States are spending millions of dollars in developing and advertising great fruit ranches. New Brunswick and the New England States are preparing for a great increase in production. The export to British and foreign countries, from all ports, is about two and one-half-million barrels annually. We can supply all that and then must seek new worlds to conquer. The fittest will survive! The Annapolis Valley is destined to supply the export apples of the world. We have cheap land, cheap labor, cheap transportation.

British Columbia is selling land at from one hundred to five hundred dollars per acre, no better than can be bought here at from ten to fifty dollars. Labor costs them fifty per cent. higher than our prices. Transportation to British markets costs them one dollar per box; it costs us one dollar per barrel. Nova Scotia apples this season have sold in every province of Canada, in Great Britain and Germany, in South Africa and the islands of the sea. Local markets, formerly undeveloped, under the working of the United Fruit Company are taking tens of thousands of barrels. To take advantage of our opportunities we must make a great advance in quality, we must grow better apples, the day of the No. 3 has passed. There is no royal road to success in fruit growing. I am painfully aware that the very honorable position of President of this Association affords no immunity from apple scab. Good apples mean eternal vigilance and intelligent work. The slogan for the coming years should be better apples rather than more apples. If we cannot grow clean apples we will be forced out of the market by our competitors. Intelligent spraying will give clean fruit. If anyone here is inclined to challenge this statement, let him look up and down the Annapolis Valley and he will find orchards, here and there in every section with clean apples, in a wilderness of scab. That intelligent thinning will improve the quality, both in size and appearance is abundantly proven; and men are here to-day with facts and figures that are incontrovertible. Intelligent handling is another requisite to better apples; there is too much careless handling in the orchard and in the warehouse. Fruit that costs the consumer from three to five cents per pound demands a kid glove system of handling that is not yet developed in this country.

Intelligent marketing of the product is an essential to success. Fifteen thousand growers cannot, individually, handle their product with the same success that a corporation can. Under co-operation the smallest grower is placed on the same terms, commercially, as the largest. We have in the United Fruit Company, a machine, that with intelligent working will revolutionize the problem of greater markets.

You will allow me a personal word in closing. I would take this opportunity of thanking this Association for the confidence reposed in me during my long official connection with the organization. I have enjoyed the work, and done what I could for the upbuilding of the fruit industry. I wish also, and I think now I can speak for the Association as well, to thank the officials and staff of the Departments of Agriculture, both Federal and Provincial for their constant assistance and advice in all times of need. In this general statement, it is no invidious distinction to name Principal Cumming, Secretary for Agriculture for Nova Scotia, who is always ready for anything that promises advancement to the fruit interest.

The Fruit Growers' Association is a splendid body of men, whom it is an honor and a privilege to serve; and with whom I hope in a

private capacity still to continue in the promotion of our common business.

The Secretary's report showed a very satisfactory growth in activities and membership.

Dr. Robert Matheson, the newly appointed Entomologist, at Truro, gave two addresses, showing the introduction and spread of San Jose scale and Brown-tail moths in the province, with a review of the means taken to keep the pests in check.

The pest was discovered in April 1912, and during the rest of the year practically every tree imported into this province had been inspected and all infested stock destroyed. Regulations had been passed which had practically prohibited the importation of nursery stock into the province for at least one year, since all Ontario nurseries are compelled to show a clean bill of health certificate for the past year.

BOX PACKING POINTERS.

In his address on box packing, Prof. Blair brought out the following points:—Ends of a box must be in one piece or two pieces, securely fastened together. Sides without spring, and top and bottom with spring to keep the pack tight. All apples should be wrapped, as the apples wrapped keep better, bruise less, and pack tighter.

ORCHARD FERTILIZING.

Prof. J. P. Stewart, of State College, Penn., gave the results of experiments in fertilizers in connection with the college. These experiments had shown: (1) That in some orchards the yield can be greatly influenced by proper fertilization, especially with nitrogen and phosphates.

Profits from the judicious use of fertilizers have run as high as \$420 per acre in a single season.

That tillage and cover crops have not been the equivalent of proper fertilization.

Phosphates have not been a success, except as applied with nitrogen. Growth and fruiting at the same time, contrary to previous findings, have not been antagonistic, since the best growing plots have been the best fruiting plots. Generally speaking, any orchard which is actively producing and growing is likely to require, fertilization, since the total plant-feed draft is more per acre than a 35 bushel crop of wheat.

Color in apples is essentially dependent on maturity and sunlight. Late picking, light soils, open pruning, and sod culture increase color. Size is governed largely by the number of fruit's on a tree.

He advocated for fertilizer per year per acre—nitrogen as found in 100 lbs. of nitrate of soda and 150 lbs. dried blood, phosphoric acid as found in 350 lbs. of acid phosphate, and potash as found in 100 lbs. of muriate of potash. "After all," he said, "this question is a local one, and the problem of what and how much fertilizer to put in your orchard will have to be worked out for yourself."

He advised trying experiments, and using different fertilizers with check plots for a period of at least three years, to find what each orchard needs.

The speaker advised as little root pruning or breaking of roots by plowing as possible, consistent with cultivation and moisture conservation.

Election of officers on Wednesday morning resulted in the re-election of S. C. Parker as president, and F. W. Bishop, of Paradise, as vice-president, while Manning Ellis was continued as secretary. There were several important resolutions passed, viz.,

A BIGGER HORTICULTURAL EXHIBITION.

R. J. Messenger, Manager of the N. S. Horti-

cultural Exhibition, held at Bridgetown, in 1912, moved, and the resolution after some discussion passed almost unanimously, that in view of the fact that the horticultural exhibition, held in the different towns from year to year, failed to benefit, to any great extent, the growing industry of the province, since it did not reach in any way the consuming public nor prove of any aid in advertising, in consuming centres, the fruit growing possibilities of Nova Scotia, therefore be it resolved that the Fruit Growers' Association recommend that steps be taken to hold the Nova Scotia Exhibition at Halifax in the near future on a larger or commercial scale, and that a committee be appointed to work with Secretary of Agriculture Cumming toward this end.

A STRICTER DEFINITION FOR NO. 2.

Another important resolution, which created some discussion and passed almost unanimously, was a proposed amendment to Section 321 of the Inspection and Sale Act.

During the past year one of the warmest questions discussed in farmers' meetings, corner groceries, country stores, and all places where two or three have been gathered together, has been the inspection of fruit, and the many interpretations of the present law. The resolution called for the amendment of the definition of No. 2 so as to read:—

"III. of No. 2 quality unless such fruit shall include no culls, consist of well-grown specimens of one variety, sound, of not less than nearly medium size for the variety, of normal shape, and not less than ninety per cent. free from scab, wormholes, bruises and other defects, and properly packed."

This makes a No. 2 practically as clean and good an apple as a No. 1, but smaller in size.

It was also resolved that legislation be asked for making it illegal to spray fruit trees in blossom. That we express our appreciation of the stringent legislation in force regarding the importance of nursery stock. That, in view of the growth of the Association, we ask the Provincial Government to increase the present annual grant of \$800 to \$500.

On Wednesday afternoon Prof. Stewart again gave an address on spraying and spraying mixtures.

He said the day was rapidly approaching when anything poorer than a No. 1 should not be marketed, certainly not exported. He gave figures to show that spraying was a very profitable practice. He was strongly in favor of the use of lime-sulphur with arsenate of lead, especially the tri-plumbic arsenate. Since the lime sulphur helped out the arsenate as an insecticide, and the latter strengthened the former as a fungicide. He also advised orchardists to make their own lime-sulphur.

W. W. Moore, Chief of the Market Division, gave a very interesting talk, reviewing the conditions of the past year with extracts of correspondence he had received from different markets in the West and Old Country, commenting on Nova Scotia apples. It was gratifying to hear that, in all cases, our apples were, in quality and pack, giving much better satisfaction than in previous years.

The pack of the United Fruit Company called forth much favorable comment.

Inspector Baxter, from the West, made a very favorable impression on our fruit growers. He strongly advocated the use of the box for the West. The last session was mainly taken up with discussion on thinning fruit, and addresses on the means being used to eradicate the Brown-tail moth and San Jose scale. R. J. M.

A Live Convention of Nova Scotia Farmers.

Away to the other end in 1913! This is what the Eastern men claimed in 1912 when Yarmouth pulled the Nova Scotia Farmers' Association to that place, and this year finds us at the Eastern jumping-off place with a bigger delegation than ever, and a membership far more alive to the farmer's opportunities, and to his importance and power in the regulation of his affairs in the legislature. The best body of men in the province, and the best time of the year says every delegate. A splendid time to do things for farmers.

President R. M. Jackson filled the chair for the first session and proved to be a splendid chairman. Following is his opening address in part:—

The year 1911 was one of the best crop-growing years that we have had for many years, while the year that has just passed, though not up to the year previous, yet when all crops are summed up, will about strike an average.

The weather conditions were somewhat peculiar;

parts of the province were blessed with plenty of rain during the growing season, while in other parts, particularly the Eastern Counties, the rainfall was very light, consequently some crops were very short, especially the hay crop. The grain and root crops, where farmers had been educated to properly cultivate the soil and to conserve the moisture from preceding rains, was up to or above the average. It seems to me that too many farmers depend on their hay crop for their winter feed instead of growing more roots and corn to add succulence to their winter feed, and to help out in times of shortage such as is being experienced this year. I am pleased to note that a larger acreage is being devoted to the growing of roots and corn every year. The root crop has been a good one, some places reporting a yield of 1,200 bushels to 1,400 bushels to the acre. To get a large yield like this means that you must have good seed and give them proper cultivation.

The fruit crop, which is one of our leading crops, while not up to that of 1911, which was

the banner year, was above the average, but owing to weather conditions was not as clean or of as good quality as the year previous.

Prices of farm products have ruled high. Dairy products reached the highest mark for many years, and have every indication of going higher. Are we prepared for it? If we were to go through some of our best farming districts to-day you would find some of our farmers who have good-sized herds of cattle, and who are to-day buying dairy products instead of having a surplus to sell, every cow in the herd being dry, and will be till next summer. Now this is a sad state of affairs, and one that needs to be remedied.

One of the greatest needs of the farmers of Nova Scotia to-day is education. Education in the every day problems of farm life, such as the breeding and feeding of the different kinds of live stock, the care and application of manure and the different kinds of fertilizers, rotation of crops, underdrainage, conservation of the soil, orcharding and everything that pertains to orchard work, and the many things that go to make the

difference between success and failure on our farms.

Agricultural education has been carried on in about the same way as previous years, and it is with great satisfaction that we see the increased interest that is being taken in the Agricultural College at Truro. The attendance at both courses has been increasing every year, last year the buildings being taxed to their capacity, and this year we are pleased to see a large addition being added, and we should not be satisfied until this is filled to overflowing. Those of us who never had an opportunity of attending any of the courses cannot know how much we have lost. We have been farming with a fair measure of success, but how much greater might have been our reward had we an agricultural education to help us.

During the past year illustrations or demonstration farms have been established in the province.

With all these advantages for agricultural improvement, are we helping those who need help the most? To my mind, this can only be done by having men, who are qualified to do so, travel throughout the country districts and visit every farm, and by practical advice help our poorer farmers to increase the production of their farms.

The report of the exhibition commissioners, Messrs Starr and Black, showed an increased attendance, and in some departments, as the horse and cattle barns, a larger exhibit.

The horticultural hall was also very well filled, and attractively arranged. An important discussion, placing the opening of the fair after this at the 2nd Monday in September, had been made at the last meeting of the commissioners. Superintendent, F. I. Fuller, gave a satisfactory report on the work of county and district exhibitions, Agricultural Societies and County Associations. The latter had in point of attendance fallen off somewhat.

A warm discussion among the representatives of Agricultural Societies resulted in a more uniform arrangement regarding the raising of subscription fees in the Societies.

Officers.—President, H. W. Corning, M. P. P., Yarmouth; 1st Vice-President, Wm. O'Brien, Windsor Forks; 2nd Vice-President, A. S. MacMillan, Antigonish; Sec'y.-Treas., C. R. B. Bryan.

ADDRESSES.

In two excellent addresses, given by Prof. B. H. Landels and F. L. Fuller, on the need and method of underdrainage, the following points were brought out: Wet land, when drained, gave better crops than naturally drained lands undrained, for the reason that naturally drained lands generally were of a more gravelly or sandy nature, but poor in fertility, while low wet lands were of a closer texture, and more fertile and better retainers of soil moisture. Drained soils were earlier workable, because of the comparatively great amount of heat necessary to raise the temperature of water, and in low undrained lands the ground water is not carried off except by the heat of the sun. It only needs a practical demonstration on his own farm to make the ordinary farmer strongly in favor of underdrainage. Underdraining has, in Ontario, paid for initial cost in increased crops in from one to five years.

It does not pay so well to drain land by open ditches, except in a case of outlets for a system of underdrainage or where there is a continual flow of water. The cost in most cases of keeping it open and effective will soon pay for the tile. The speakers favored clay tile as compared with concrete. The drainage survey of a farmer's fields, according to scale, was proving a good move.

The ability to borrow money for drainage purposes, at a comparatively low rate of interest, was spoken of, and the idea recommended by the speakers.

A good point in favor of underdrainage was that owing to the high price of labor, delay in working, etc., much of the land in our province would soon not be worth working unless underdrained. At the public meeting on Tuesday evening, a note of optimism was struck in regard to the future prospects of Nova Scotia.

STALLION ENROLMENT IN NOVA SCOTIA.

Prof. Cumming, Secretary of Agriculture for the Province of Nova Scotia, and John Bright, Dominion Live-Stock Commissioner, spoke upon the subject of stallion enrolment in Nova Scotia. Prof. Cumming said that, in accordance with a resolution passed at the last session of the N. S. F. A., the Provincial Legislature had passed a Stallion Enrolment Bill requiring that all stallions in Nova Scotia must be enrolled with the Department of Agriculture, and that all advertising literature must contain a copy of the enrolment certificate, which will be issued by the Department of Agriculture after the conditions of enrolment have been complied with. In Nova Scotia horses are to be enrolled under three classes as follows:—

Class A.—All pure-bred horses such as Clydes

dales, Standard-breds, etc., that are eligible for registration in Canada.

Class B.—Grade Stallions, being those sired by a pure-bred stallion, but from grade dams.

Class C.—Cross bred stallions, including stallions that are a cross between two pure-breds as well as stallions sired by grades and out of grade dams, which is really such as may be described as mongrels.

This Act is now in force, and stallion owners will be communicated with at once by the Department of Agriculture.

Mr. Cumming concluded by urging all who were owners of stallions to write to the Department of Agriculture, and advise them of the fact so that the matter could be proceeded with as expeditiously as possible. The fee for enrolment is \$2.00.

Mr. Bright commended the Government of Nova Scotia for acting so promptly in this matter, and considered the bill an excellent one as a beginning, but strongly urged that optional inspection for stallions for soundness be adopted as promptly as possible and, in accordance with this suggestion, a resolution was passed urging that the Government amend the Stallion Enrolment Act adding provision for optional inspection and soundness.

Mr. Bright also advised the Convention that he was at the present time endeavoring to get a common law passed in all of the provinces of the Dominion dealing with the matter of male animals running at large, which he regarded as one of the most serious menaces to live-stock improvement all over the Dominion of Canada. The members of the N. S. F. A. evidenced very hearty approval of any method that may be adopted by the Live-Stock Commissioner in trying to rid the country of grade and cross-bred males running at large, and make provisions for pure-bred sires.

WEAK POINTS IN SHEEP MANAGEMENT.
Speaking of the care and management of sheep in Nova Scotia, J. A. Teller described first the



H. W. Corning, Chegoggin, N. S.
President Nova Scotia Farmers' Association.

type of sheep required for mutton purposes, and emphasized the importance of selecting a good sire, since he is fully fifty per cent. of the flock, the practice of a vigorous culling system every fall, and care in seeing that the ewe flock received plenty of exercise during winter months. Great emphasis was placed upon the castrating of all ram lambs not to be used for breeding purposes and also the docking of all tails, a system not generally practiced in the province at present. Proper handling and caring for the fleece was also taken up. Mr. Teller advised the adoption of more modern methods of rolling and tagging fleeces and pointed out the harmful use of paint in the marking of sheep. He also pointed out the disadvantage of shearing sheep while wet, or storing the wool in a wet condition. The dipping question was also taken up and strongly urged in order that they might become more successful in sheep rearing. By co-operating a number of farmers in a locality might easily establish a dipping plant. The encouragement in certain localities of the breeding of one particular breed of sheep, where one grade of lamb or wool might be produced was also advanced.

RESOLUTIONS PASSED AT THE NOVA SCOTIA FARMERS' ASSOCIATION.

1. That we urge the Nova Scotia Government to establish five District Exhibitions to be held in the different parts of the province as follows:

Sydney, Yarmouth, Bridgewater, one in the Annapolis Valley, and one in the Eastern Counties of the Peninsula.

2. That Short Courses be put on in five districts of the province.

3. Whereas we have been promised additional aid from the Federal Treasury for agricultural educational purposes, resolved that the sum of one hundred and fifty dollars, in addition to the aid already provided, be given to each county for Institute Work, the expenditure to be under the direction of F. L. Fuller, Supt., of Agricultural Societies, and two members of the County Association in each county elected by ballot.

4. Resolved that the Government of Nova Scotia be asked to pay 50 per cent. of the cost of transportation in the case of all pure-bred stock imported into Nova Scotia by residents of the province.

5. Resolved that the law be so amended that any resident of the province may demand that the line fence between himself and neighbor be built so as to turn sheep, the requirements to be left to the judgment of the local fence viewer.

6. That it be optional with the residents of Cape Breton to use any sum set aside by the Provincial Government in aid of district exhibitions to be used rather towards the encouragement of the introduction of heavy farm horses.

7. That the Government pay all transportation charges on live-stock exhibits to the Provincial Exhibition at Halifax.

8. That the Nova Scotia Farmers' Association urge the proper authorities at Ottawa to remove the duty on traction ditching outfits coming into Canada.

9. That stallion inspection be optional.
10. That all dogs be taxed \$2.00 each, and funds so raised be devoted to payment of damages for sheep killed by dogs.

11. That in addition to the present bonus of \$500.00 given to the purchasers of the first traction ditching outfit in each county of the province, the Government give an additional aid of five cents per rod for every rod of ditch dug by such outfit.

12. That the public utilities commission be asked to investigate the methods and profits of the Maritime Telegraph and Telephone Co., with a view to lessening the expense to subscribers.

R. J. M.

Trade Produce Survey of 1912.

J. H. Gunn, President of Gunns, Ltd., Toronto, and Gunn, Langlois & Co., Montreal, in his annual report as President of the Montreal Produce Merchants' Association, makes the observation that 1912 will go down in history as the year which saw the passing of the Canadian Export Butter Trade, there being only 70 packages exported and these going to South Africa, whereas in 1911 there was an export of 134,000 packages. With the supply of wood for our present style of cheese boxes dangerously near the vanishing point, Mr. Gunn suggested that a package similar to that used in the New Zealand trade would be satisfactory with the modification of having the middle heading consist of two thin tops, so that the package could be sawn in two, as is done with the cases used in the Irish and Danish egg trade. The cost would be much less than that of the box now in use and save a lot in coopering. The exclusive use of refrigerator cars from country points and cool air in steamers would be required. Stenciling the weight of cheese on the package with letters at least three inches long was suggested. The Department of Agriculture, at Ottawa, will this season issue an open letter for publication in the cheese-producing sections of Ontario and Quebec, calling attention to the necessity for greater care in loading cheese boxes at country points, so as to reduce the loss through breakages. The supply of eggs was reported still to be away short of the Canadian consumptive demand, and the North-West trade, notwithstanding the three cent per dozen duty, was captured for the American farmer. The trade season of 1912 closed with only about enough eggs in Eastern Canada to supply current demand till about Feb. 1st. Approximately 2,000,000 dozen of eggs, on which \$60,000 duty was paid, were imported in 1912. It was also stated that the West was not producing enough cattle to meet the local demand, and unless greater efforts were made by producers of farm products generally, there was little prospect of the cost of living being reduced. The report closed with a review of the efforts of the Association in ameliorating rail and ocean transport rates and facilities.

The Dominion Bank

Proceedings of the Forty-second Annual General Meeting of the Shareholders.

THE FORTY-SECOND ANNUAL GENERAL MEETING OF THE DOMINION BANK was held at the Banking House of the Institution, Toronto, on Wednesday, 29th January, 1913.

There was a large number of shareholders present. It was moved by A. W. Austin, seconded by E. W. Hamber, that Sir Edmund B. Osler, M.P., do take the chair, and that Mr. C. A. Bogart do act as Secretary.

Messrs. A. R. Boswell, K. C., and W. Gibson Cassels, were appointed scrutineers.

The Secretary read the Report of the Directors to the Shareholders, and submitted the Annual Statement of the affairs of the Bank, which is as follows: To the Shareholders -

The Directors beg to submit the Forty-second Annual Report of the affairs of the Bank, and the result of its operations for the twelve months ended 31st December, 1912, which they feel will be received with satisfaction by the Shareholders:

Balance of Profit and Loss Account, 30th December, 1911.....	\$ 500,116 10
Net profits for the year, after deducting all charges and making full provision for bad and doubtful debts.....	901,529 44
Premium received on new Capital Stock.....	297,200 63
Making a total of.....	\$1,698,846 17
Which has been disposed of as follows:	
Dividends (quarterly) at Twelve per cent. per annum.....	\$588,536 53
Bonus, Two per cent.....	100,000 00
Total distribution to Shareholders of Fourteen per cent. for the year.....	\$688,536 53
Contribution to Officers' Pension Fund.....	25,000 00
Transferred to Reserve Fund—Premium on New Stock.....	297,200 63
	<u>1,010,737 16</u>
Balance of Profit and Loss carried forward.....	\$ 688,109 01

RESERVE FUND.

Balance at credit of account 30th December, 1911.....	\$5,702,799 37
Transferred from Profit and Loss Account.....	297,200 63
	<u>\$6,000,000 00</u>

There has been a further gratifying increase in the business of the Bank, as evidenced by the figures in the Statement presented. The prosperity of the country and the consequent demand for banking accommodation permitted the employment of its funds to unusual advantage throughout the year, resulting in earnings sufficient to enable the Directors to distribute a bonus of 2 per cent. in addition to the usual dividend of 12 per cent.

To meet the general expansion of business in Canada, in which this Bank continues to participate, your Directors decided to issue to the Shareholders of record of the 15th February, 1913, a further \$1,000,000 of new Capital Stock, at a premium of 100.

This issue is a part of the \$5,000,000 of new stock authorized by the Shareholders at the Annual Meeting of the 26th January, 1910, and duly approved by the Treasury Board at Ottawa. Particulars of this allotment will be given forthwith to the Shareholders by circular. When payment of this issue has been made in full, the paid-up Capital of the Bank will amount to \$6,000,000, and of the total Authorized Capital of \$10,000,000, there will remain unissued \$4,000,000.

Owing to the growing importance of the Bank's business, the Directors considered it advisable to recommend an increase in their number from nine to eleven, and a by-law will be submitted to you covering this change.

You will also be asked to give your sanction to a by-law increasing the remuneration of the Directors, made necessary by these additions to the Board.

In connection with Bank Premises, this year just closed was one of unusual importance, several transactions of great moment having been brought to completion.

You were informed at the annual meeting in 1911 of the purchase of the property on the north-east corner of King and Yonge Streets, Toronto, for the purposes of Head Office premises, as your Directors were at that time unable to acquire sufficient land immediately adjoining the present site. Last year, however, they succeeded in purchasing the property directly south of that now occupied, and extending to Melinda Street. A sale of the north-east corner was subsequently effected at a satisfactory price.

Plans have been prepared, and it is the intention to begin active operations at an early date for the erection of a building that should meet the Bank's requirements for many years to come.

Necessary outlays have been made for improvements to several offices already established, for new Branches opened, and for the purchase of the premises which the Bank has for many years occupied at the corner of Queen and Sherbourne Streets, Toronto, and at Oshawa, Ont.

MARKETS.

Toronto.

REVIEW OF LAST WEEK'S MARKETS

At West Toronto, on Monday, Feb. 3, receipts of live stock numbered 97 cars, comprising 1,727 cattle, 843 hogs, 115 sheep, and 38 calves; no business being transacted. Packers quoted hogs at \$8.60, fed and watered, and \$825, f. o. b. cars at country points.

Receipts of live stock at the City and Union Stock-yards last week were as follows:

	City.	Union.	Total.
Cars.....	19	256	275
Cattle.....	308	3,308	3,616
Hogs.....	96	6,363	6,459
Sheep.....	54	706	760
Calves.....	52	238	290
Horses.....	—	92	92

The total receipts at the two markets for the corresponding week of 1912 were as follows:

	City.	Union	Total
Cars.....	175	187	362
Cattle.....	2,500	2,856	5,356
Hogs.....	4,167	4,457	8,624
Sheep.....	609	475	1,084
Calves.....	351	77	428
Horses.....	19	17	36

The combined receipts of live stock at the two yards for the past week show a decrease of 87 cars, 1,740 cattle, 2,165 hogs, 324 sheep and lambs, and 138 calves; but an increase of 56 horses in comparison with the corresponding week of 1912.

Receipts of live stock at the two markets were not nearly as large as for the previous week, but quite equal to the

Sites were also secured at West Toronto, Edmonton South (formerly Strathcona), Elmwood (Winnipeg), and additional property was acquired adjoining our Windsor, Ont., Branch.

Branches of the Bank were opened in 1912 as follows:—In Ontario—Dupont and Christie Streets, Roncesvalles and High Park Avenues, Dufferin Street and Lappin Avenue, Dufferin Street and St. Clair Avenue, Toronto; By-Ward Market Branch, Ottawa; and Port Arthur.

In the Western Provinces—Swift Current, Moose Jaw (South Hill Branch), Saskatchewan; Edmonton (First Street Branch), Calgary (Riverside Branch), Alberta; North Vancouver, British Columbia.

New Dundee and Malton, Ont., and Wawota, Sask., Branches were closed in 1912.

Every Branch of the Bank has been inspected during the year by Head Office officials, specially qualified for such duties, and, as is customary, the Balance Sheet of the 31st December, 1912, including the Cash Assets and Investments of the Institution, has been verified by a Committee of your Directors.

E. B. OSLER,
President.

Toronto, 29th January, 1913.

The Report was adopted.

A by-law was passed authorizing an increase in the number of Directors from nine to eleven.

The thanks of the Shareholders were tendered to the President, Vice-President and Directors, for their services during the year, and to the General Manager and other Officers of the Bank, for the efficient performance of their respective duties.

The following gentlemen were duly elected Directors for the ensuing year:—Messrs. A. W. Austin, W. R. Brock, James Carruthers, E. J. Christie, J. O. Eaton, J. J. Foy, K.C., M.L.A., E. W. Hamber, H. W. Hutchinson, W. D. Matthews, A. M. Nanton, and Sir Edmund B. Osler, M.P.

At a subsequent meeting of the Directors, Sir Edmund B. Osler, M.P., was elected President, and Mr. W. D. Matthews, Vice-President, for the ensuing term.

GENERAL STATEMENT

LIABILITIES.

Notes in Circulation.....	\$5,256,368 00
Deposits not bearing interest.....	\$ 9,564,569 61
Deposits bearing interest (including interest accrued to date).....	49,777,866 86
	<u>59,342,486 47</u>
Deposits made by and balances due to other Banks in Canada.....	511,504 99
Balance due to Banks in foreign countries.....	1,984,196 15
	<u>\$6,709,505 61</u>
Total Liabilities to the Public.....	5,000,000 00
Capital Stock paid up.....	6,000,000 00
Reserve Fund.....	688,109 01
Balance of Profits carried forward.....	149,092 50
Dividend No. 121, payable 2nd January 1913.....	100,000 00
Bonus, two per cent., payable 2nd January, 1913.....	648 86
Former Dividends unclaimed.....	192,324 78
Reserved for Rebate on Bills Discounted, Exchange, etc.....	7,130,174 65
	<u>\$79,224,680 26</u>

ASSETS.

Specie.....	\$ 1,568,011 28
Dominion Government Demand Notes.....	7,514,872 50
Notes and Cheques on other Banks.....	4,402,526 88
Balances due from other Banks in Canada.....	440,021 20
Balances due by Agents in the United Kingdom and Banks in Foreign Countries.....	2,048,299 32
	<u>\$15,963,731 18</u>
Provincial Government Securities.....	437,274 09
Canadian Municipal Securities, and British or Foreign or Colonial Public Securities, other than Canadian.....	607,677 56
Railway and other Bonds, Debentures and Stocks.....	6,193,081 93
Loans on call, secured by Stock and Bonds.....	6,040,075 29
	<u>29,241,840 05</u>
Bills Discounted and Advance Current.....	\$46,415,841 57
Deposit with Dominion Government for Security of Note Circulation.....	281,420 00
Overdue Debts (estimated loss provided for).....	115,961 07
Real Estate, other than Bank Premises.....	5,010 63
Mortgages on Real Estate sold.....	978,167 57
Bank Premises.....	2,236,489 37
	<u>49,982,840 21</u>
	<u>\$79,224,680 26</u>

CONTINGENT LIABILITIES.

Acceptances under Commercial Letters of Credit against Merchandise.....	£174,789 10s. 8d.
	C. A. BOGERT, General Manager.

Toronto, 31st December, 1912.

demand, excepting hogs, sheep, lambs, and calves, more of which would have sold readily. There was a little more activity in the cattle trade, on account of the light delivery, but there was little change in prices in the various classes. Sheep and lambs sold higher, when quality, which was not as good as usual, is considered. Calves were in demand, at 25c. to 50c. per cwt. higher values. Hogs were scarce all week, and prices advanced from 20c. to 30c. per cwt., the market being very firm at the advance.

Exporters.—There were about 80 cattle, 1,200 to 1,400 lbs. each, of good to choice quality, all of which were bought by the local and Montreal abattoirs, at prices ranging from \$6.80 to \$7.20. Only 37 cattle sold over \$7, and only 4 brought the \$7.20 figure. Butchers.—Choice steers and heifers,

1,050 to 1,150 lbs., sold at \$6.40 to \$6.75; loads of good, \$5.85 to \$6.30; medium, \$5.30 to \$5.70; common, \$5 to \$5.25; inferior, light steers, and heifers, \$4.50 to \$4.80; choice, heavy cows, \$5 to \$5.25, and a very few of extra quality brought \$5.50 to \$5.75; good cows, \$4.75 to \$5; medium cows, \$4 to \$4.50; common cows, \$3.25 to \$3.75; canners and cutters, \$2.50 to \$3; heavy bulls sold from \$5 to \$5.40, and a few at \$5.50 to \$5.75; butchers' bulls, \$4 to \$5; bologna bulls, \$3.50 to \$3.75.

Stockers and Feeders.—Few were offered and few wanted. One commission firm that had an order from London, Ohio, bought two carloads. Steers, 750 to 850 lbs., of good quality and colors, brought \$5 to \$5.40.

Milkers and Springers.—Trade in milkers and springers was dull all week, excepting for those of extra quality. Late

springers and common cows sold from \$36 to \$40; medium cows, \$45 to \$55; good cows, \$60 to \$65; choice cows, \$70 to \$75, but only a few reached the latter quotation.

Veal Calves.—The demand was excellent for anything approaching good quality. Common, rough, heavy calves, sold from \$4.50 to \$5.50; medium calves, \$6.50 to \$8.50; good calves, \$9 to \$9.50, and choice, new-milk-fed veals sold readily at \$10 per cwt., or one dime per lb.

Sheep and Lambs.—Receipts were light, and not equal to the demand. The quality was not good, especially in the lambs, one or two carloads of which were shipped from Montreal. Sheep—Light yearling ewes sold at \$5.75 to \$6 per cwt.; good ewes, \$5 to \$5.50; heavy ewes and rams, \$4.25 to \$4.75 per cwt. Lambs—Good quality sold at \$8 to \$8.50; common lambs, \$7.25 to \$7.60.

Hogs.—The market opened for the week at \$8.50 fed and watered, and \$8.15 f. o. b. cars at country points. Prices advanced to \$8.75 fed and watered, and \$8.85 f. o. b. cars, closing firm.

Horses.—Trade at the Union Horse Exchange, Union Stock-yards, was reported to have been better than in many weeks, the demand, however, being mostly for medium-priced horses. There is little or no demand from the Western Provinces. The bulk of sales was to local buyers, one carload going to Ottawa. Prices were reported as follows: Drafters, \$225 to \$275; general-purpose horses, \$175 to \$225; express and wagon horses, \$165 to \$225; drivers, \$125 to \$175; serviceably sound, \$30 to \$100 each.

BREADSTUFFS.

Wheat.—Ontario, No. 2 red, white, or mixed, 93c. to 94c.; outside; inferior grades, down to 70c.; Manitoba, No. 1 northern, 95c.; No. 2 northern, 92½c., track, lake ports; feed wheat, 66½c., lake ports. Oats—Ontario oats, No. 2, 83c. to 84c., outside; 88c., track, Toronto. Manitoba, No. 2, 41c.; No. 3, 39½c., lake ports. Rye—No. 2, 73c. to 75c., outside, nominal. Peas—No. 2, \$1.15 to \$1.20, nominal, outside. Buckwheat—51c. to 52c., outside, nominal. Barley—For malting, 60c. to 65c.; for feed, 40c. to 50c., outside. Corn—No. 3 yellow, 55½c., track, Toronto, all-rail shipment. Flour—Ontario, ninety-per-cent. winter-wheat flour, \$3.95 to \$4.05. Manitoba flour—Prices at Toronto are: First patents, \$5.80; second patents, \$4.80; in cotton, 10c. more; strong bakers', in jute, \$4.60.

HAY AND MILLFEED.

Hay.—Baled, in car lots, track, Toronto, No. 1 per ton, \$13 to \$13.50; No. 2, \$11 to \$12.

Straw.—Baled, in car lots, track, Toronto, \$10 per ton.

Bran.—Manitoba, \$19 to \$20 per ton; shorts, \$22 to \$23; Ontario bran, \$19 to \$20, in bags; shorts, \$22 to \$23, car lots, track, Toronto.

TORONTO SEED MARKET.

Alsike No. 1, per bushel, \$11.50 to \$12.50; alsike No. 2, per bushel, \$10.50 to \$11; alsike No. 3, per bushel, \$9.50 to \$10; red-clover seed, Ontario-grown, \$7 to \$9 per bushel; timothy No. 1, per bushel, \$1.90 to \$2.25; timothy No. 2, per bushel, \$1.25 to \$1.60.

COUNTRY PRODUCE.

Butter.—Market about steady. Choice creamery pound rolls, 32c. to 34c.; creamery solids, 30c.; separator dairy, 28c. to 30c.; store lots, 24c.

Eggs.—Since the decline in prices for new-laid eggs, the consumption has increased, which has kept prices about steady, although the receipts are larger. New-laid sell at 27c. to 30c. for case lots; cold-storage eggs are worth 23c. to 24c. On the St. Lawrence market, new-laid eggs sell from 30c. to 35c. retail, 32c. being about the average price for the bulk.

Honey.—Extracted, No. 1 clover honey, 12½c. per lb.; combs, per dozen sections, \$2.75 to \$3.

Cheese.—Large, 14c.; twins, 15c.
Potatoes.—Market easy. Car lots of Ontario, track, Toronto, 65c. per bag; New Brunswick Delawares, 80c.

Poultry.—Receipts liberal, but not greater than the demand. Dressed, wholesale prices are as follows: Turkeys, 25c. to 26c.; geese, 15c. to 16c.; ducks, 19c. to 20c.; chickens, 17c. to 18c.; hens, 14c. Cold-storage poultry

sells at about 2c. per lb. less than these quotations.

Beans.—Primes were quoted at \$2.45 to \$2.50; hand-picked, \$2.60 to \$2.65, that is for broken car lots.

HIDES AND SKINS.

No. 1 inspected steers and cows, 14c.; No. 2 inspected steers and cows, 13c.; No. 3 inspected steers, cows and bulls, 12c.; country hides, cured, 12c.; country hides, green, 10½c. to 11c.; calf skins, per lb., 14c.; lamb skins, \$1 to \$1.35; horse hides, No. 1, \$3.50 each; horse hair, per lb., 37c.; tallow, No. 1, per lb., 5½c. to 6½c.

FRUITS AND VEGETABLES.

Apples.—Spies, No. 1, \$3.50 to \$4; No. 2 Spies, \$2.75 to \$3.25; No. 1 Kings, \$3.50 to \$3.75; Greenings, \$2.75 to \$3.25; Baldwins, No. 1, \$3.25; No. 2, \$2.50 to \$2.75; cabbage, \$1 per barrel; beets, 75c. per bag; carrots, 75c. per bag; turnips, per bag, 40c. to 50c.; parsnips, per bag, 75c.

Buffalo.

Cattle.—Prime steers, \$8.50 to \$8.75; butchers', \$6 to \$8; bulls, \$4 to \$6.75; stock heifers, \$4 to \$4.50; shipping, \$7.25 to \$8.25; heifers, \$4.75 to \$7.50; cows, \$3.25 to \$6.75; stockers and feeders, \$4.50 to \$6.75; fresh cows and springers, \$35 to \$80.

Hogs.—Heavy, \$7.90 to \$3; mixed, \$8.05 to \$8.10; Yorkers, \$8.15 to \$8.20; pigs, \$8.10 to \$8.15; roughs, \$7 to \$7.15; stags, \$5.50 to \$6.50; dairies, \$7.85 to \$8.

Sheep and Lambs.—Lambs, \$6 to \$9.25; yearlings, \$5 to \$9; wethers, \$5.75 to \$6.25; ewes, \$3.50 to \$5.50; sheep, mixed, \$4.50 to \$5.75.

Chicago.

Cattle.—Beeves, \$6.25 to \$9.20; Texas steers, \$4.90 to \$5.75; stockers and feeders, \$4.75 to \$7.60; cows and heifers, \$2.90 to \$7.45; calves, \$6.50 to \$10.20.
Hogs.—Light, \$7.40 to \$7.50; mixed, \$7.45 to \$7.70; heavy, \$7.25 to \$7.70; rough, \$7.25 to \$7.45; pigs, \$6 to \$7.45.
Sheep and Lambs.—Sheep, native, \$4.60 to \$5.90; Western, \$4.75 to \$5.85; yearlings, \$6.30 to \$7.75; lambs, native, \$6.60 to \$8.75.

British Cattle Market.

John Rogers & Co. cable Irish steers being quoted at 13½c. to 15c. per lb.

GOSSIP.

The executors of the late Thomas Weir, of Scarborough, Ont., advertise that on March 7th, the herd of Jersey cattle, flock of Oxford Down sheep, the horses, farm stock, and implements of the estate, will be sold by auction.

Mr. and Mrs. Geo. H. Pedlar, of Oshawa, have presented to the Oshawa Hospital Board, ten thousand dollars, to be used in the construction of a new surgical wing to the hospital. The surgical wing is presented by Mr. and Mrs. Pedlar as a memorial to their son, the late Geo. H. Pedlar, Jr., and the handsome offer came as a complete surprise.

At a consignment sale of Hereford cattle, at Denver, Colorado, January 20th, handsome prices were realized. The highest price was \$1,350, for the two-year-old bull, Heir's March On 2nd. The yearling bull, Heir's March On 8th, sold for \$1,250. Six other sons of The Heir brought a total of \$2,590. The highest price for a female was \$600, for a two-year-old heifer.

Attention is called to the advertisement in this issue of the auction sale on February 18th, of the herd of 21 registered Shorthorn cattle, the property of Andrew Kersell & Sons, of St. George, Ont., a station on the G. T. R., near Bradford and Harrisburg. The offering includes several cows with calf at foot, others due about time of sale, and heifers in calf; also half a dozen young bulls, six months to two years old, and the stock bull, Belvoir Beau, by the richly-bred Clipper King =64877.

Colver V. Robbins, Riverbend P. O., Welland Co., Ont., advertises for sale six registered Holstein cows of good type, in good condition, and due to freshen before April 1st, also some young stock of both sexes, and excellent breeding. He has Bell 'phone.

At an auction sale of Shire horses, from the stud of B. N. Everard, near Leicester, England, the second week in January last, seven mares sold for an average of \$675, eight three-year-old fillies averaged \$525, six stallions averaged \$680. Thirty-nine head made an average of \$475.

In consequence of the recent fire that destroyed the horse barns at the farm of Miss K. L. Wilks, near Galt, Ont., a consignment of her Standard-breds and Hackneys to the number of about fifty, were disposed of at auction last week in Toronto, at prices ranging up to \$650, three others passing the \$500 mark.

L. A. Wakely, of Bolton, Ont., has lately purchased as head of his splendid herd of Shorthorns, the proven sire, Imp. Ivanhoe =70134=.. He is a massive red, weighing 2,500 lbs., beautifully fleshed, and a sire of worth. He will undoubtedly do a lot of good for Mr. Wakely, as he has the right kind of a foundation to cross with.

Smith & Richardson, of Columbus, Ont., have lately sold to W. J. Cox, of Peterboro, Ont., the big, quality, and richly-bred stallion, Baron Murray (imp.). He is a bay, rising three years, sired by the renowned Baron's Pride, dam by MacMeekan. This colt, at Ottawa, was second in a strong class, being only beaten by his stable mate. He has the size, breeding, character, and quality that makes the successful sires, and Mr. Cox was certainly wise in his selection.

IMPORTANT AYRSHIRE SALE.

E. D. Hilliker, Burgessville, Oxford Co., Ont., in an advertisement in this issue, announces that as he is going into other business, his entire Sunnysbrook herd of Ayrshire cattle and flock of Leicester sheep, also his horses, implements, etc., will be sold by auction, without reserve, on Tuesday, February 18th. In founding his herd, Mr. Hilliker was fortunate in the selection of deep-milking strains of desirable type, with well-shaped udders, and good-sized teats. In the six fairs attended last fall, including Toronto, he states his cattle obtained 72 prizes, of which 33 were firsts, and no animal has been purchased to enter the herd unless it was his choice of the seller's herd, even if the price did pinch him. Another pleasure in his experience as a breeder has been the warm friendships formed with others in the business, and to hold that friendly feeling, he gives the assurance that not one animal of his herd will be retained in a direct, or indirect way. Look up the advertisement, and note the date.

AYRSHIRES AT GLENHURST.

Continual improvement along the lines of official production and official backing in the breeding end of the herd, official testing to determine their producing ability, and a systematic culling out of those not able to qualify for the official records, is the annual order of things in the noted Glenhurst herd of James Benning, of Williamstown, in Glengarry Co., Ont. Established over fifty years ago, the reputation of this great herd has been continual for excellence of type and big production, and certainly never in the many years of its existence has the standard of excellence been so high. This can easily be understood when it is known that the big majority of the herd are daughters and granddaughters of cows milking from 50 to 60 lbs. a day, and along from 36 to 40 lbs. a day is the average for the two-year-olds as they come to milk, and with that the butter-fat test of the entire herd as officially given, is an average of 4.6 per cent. Among the younger ones are daughters of Imp. Lessnessock Betty 2nd, who in 10 weeks gave 19,000 lbs. With such breeding as this, the results are assured, and should be more than interesting to parties wanting foundation stock of the

best procurable, both as show-ring quality, and as mortgage-lifters. Young herd-headers of high quality and choice heifers, are always on hand for sale.

If the big demand and number of sales of Clydesdales at the late Ottawa Show be a true indication of the country's requirements, it should be a most prosperous year for the Clydesdale men.

EXTENSIVE HOLSTEIN SALE.

On February 25th, as advertised in this issue, Messrs. Monro & Lawless, of Thorold, Ont., among the largest breeders of high-class Holstein cattle in the Dominion, will sell at auction, on February 25th, 100 head; 55 of milking age, mostly fresh or springing, 5 choicely-bred bulls of various ages, 10 yearling heifers, 25 heifer calves, and 5 choice grades in milk. This is one of the most important sales that have ever been featured in Canada, and should attract the attention of Holstein-breeders and dairy-men from far and near. For fuller particulars, write for catalogue, and watch Gossip in these columns.

SALE DATES CLAIMED.

Feb. 7th.—Graham-Renfrew Co., Bedford Park, Ont., at Burns & Shephard's Repository, Toronto; Clydes and Hackneys.

Feb. 12th.—Geo. Davis & Sons, Erin, Ont.; Aberdeen-Angus.

Feb. 12th.—Fred Bogart, Kettleby, Ont.; Shorthorns.

Feb. 18th.—Andrew Kersell & Sons, St. George, Ont.; Shorthorns.

Feb. 18th.—E. D. Hilliker, Burgessville, Ont.; Ayrshires.

Feb. 25th.—Monro & Lawless, Thorold, Ont.; Holsteins.

Feb. 25th and 26th.—Union Stock-yards Co., Ltd., Toronto; Clydesdales and Percherons.

March 5th.—Annual Contribution; Sale of pure-bred cattle, at Guelph, Ont.

March 6th.—James Cowan, Seaforth, Ont.; Shorthorns.

March 7th.—Executors, Thos. Weir, Scarborough, Ont.; Jerseys and Oxford Downs.

March 11th.—A. H. Teeples, Currie's Crossing, Ont.; Holsteins. Sale at Woodstock.

TRADE TOPICS.

What should be done to persuade a lot of cantankerous, non-productive hens to settle right down to business and pay a profit over their keep? The cornerstone of the structure—the keystone of the arch—according to the manufacturers of Dr. Hess' Poultry Panacea, is good digestion on the part of the hen. If digestion is strong, and the greater proportion of the food is assimilated, then the hen has egg materials in abundance, so there is wisdom in strengthening the digestion of the hen. Dr. Hess' Poultry Panacea is said to be composed of natural tonic elements which create an appetite and add strength to the hen, thus placing her in a position to lay more eggs. Look up the advertisement of Dr. Hess' Poultry and Stock Foods in another column.

THE DOMINION BANK.—Elsewhere in this issue of "The Farmer's Advocate" appears the very satisfactory annual statement of the Dominion Bank, adopted at the recent 42nd annual general meeting held in Toronto. The management were able to report a substantial and healthy growth in business during the past year, dividends to the amount of 14 per cent. being declared, which included a 2-per-cent. bonus dividend, the total amount so distributed to shareholders being \$683,526.53. The Reserve Fund has now reached the substantial sum of \$6,000,000. Additional land has been acquired for the erection of a suitable head-office premises in Toronto, in keeping with the needs and progress of the institution. Sir Edmund B. Osler, M.P., was re-elected President, and W. B. Matthews, Vice-President.

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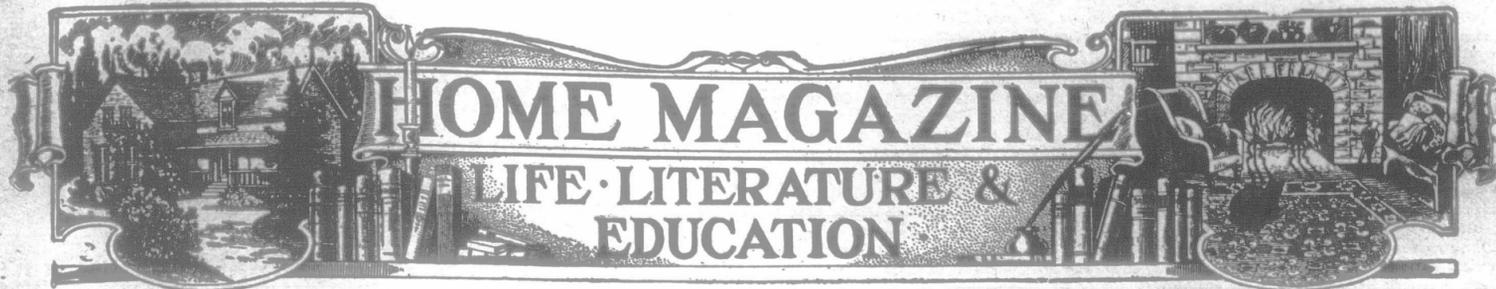
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Some Facts and Figures about Jamaica.

(JAYMACA, THE LAND OF SPRINGS.)
(By R. Wilson.)

[With the opening of the Panama Canal, the importance of Jamaica, a British possession, will be enormously increased. It will then lie directly on one of the greatest ocean highways of the world.]

Discovered in the year 1494, by Columbus, Jamaica remained a Spanish possession for upwards of one hundred and sixty years. The British, in the time of Cromwell and his Ironsides, captured it, since when, it has remained by far the most important of the West India islands belonging to Great Britain.

The area of Jamaica is about 6,400 square miles, with a length of 144 miles, and a width varying from 21½ to 49 miles. While in the possession of the Spaniards, the original inhabitants, the Arawak Indians seem to have died out. The negroes, who now form the bulk of the population, were first imported from West Africa by the Spaniards for the purpose of working the sugar plantations, which industry was also introduced by the Spaniards.

Kingston, the present capital of Jamaica, may be said to have come into existence after the destruction, by earthquake, of Port Royal, in 1692. It gradually increased in importance until fifty years ago, when it displaced Spanish Town and assumed the varied and multifarious responsibilities connected with the Island Capital.

The population of Jamaica is computed to be about 500,000 souls. Of this number, Kingston contains nearly 70,000, upwards of 60,000 of this number being either black or colored, East Indian, Chinese or Syrians.

The principal industries on the Island may be divided into three classes: 1st. Penkeeping (the rearing of horses, mules and cattle, with dairying, and, in a small degree, sheep). 2nd. Planting, the principal crops being sugar, bananas, coffee, logwood, pimento, coconuts, ginger, cocoa, tobacco, citrus fruits, cassava, and cotton. 3rd. A combination of penkeeping and planting, together with the growing and profitable industry of beekeeping.

It would be quite impossible, in a brief sketch such as this, to attempt to do anything like justice to the exquisite scenery to be found everywhere in this enchanting island, therefore, any allusion thereto may be treated as but merely superficial, and touching on a theme which, to receive justice, would require elaborate treatment.

Of the avifauna of Jamaica, forty-three of the birds are indigenous to the island. Of the ornamental representatives of the feathered tribe—of which the hummingbird is perhaps the most noticeable, owing to its extreme beauty and graceful movements—the nightingale is the most conspicuous of the song-birds, while the solitaire, the lonely inhabitant of the mountainous regions, is well known for its sad and melancholy note. Canaries and parrots are seen chiefly in the south-west of the island, whereas, the John Crow—a useful scavenger—awkward on terra firma, yet majestic in flight, is generally in evidence.

The insect life of Jamaica adds a distinct and unique charm to this lovely island. As "the sun from the gorgeous East seeks his sweet rest" in the flaming West, and the whole land becomes enveloped and shrouded in the impressive tropical gloom, which so mysteriously and with such rapidity overspreads all, these insects, apparently at a given call, uplift their voices in a harmony weird and effective. Add to this, the artistic touch lent to this enchant-

ing scene, by the myriads of varied fireflies which, flickering in and out, and here and there shed their intermittent and delicate illumination to that which has been frequently described as a veritable fairyland, and some faint conception of the charm presented by the nights of this southern island may be realized.

Climatic conditions in Jamaica are not at all as frequently represented. As a

feet, the mercury drops to 55 degrees. Around Kingston, the capital, the sea and mountain breezes serve to still further temper the heat.

The climatic characteristics of Jamaica have been much maligned, as have those of many another remote land. Speaking broadly, fine, cloudless mornings, chequered cloud at noon, fine, sunny evenings, and bright, star-lit nights, con-

hottest summer months, the climate in the plains is seldom unbearable. The temperature may be what we designate high, but for the greater part of the day, a strong, steady breeze, right off the ocean, known locally—and appropriately—as "The Doctor," brings the exhilarating ozone-laden breath of the sea, just when the sun's rays are at their worst, and when it is most appreciated. The visitor from the North, in search of thorough change of environment, could not fail to become enchanted with the beauties of Jamaica at Mandeville, Malvern, or Hollymount, in the summer, nor could he fail to benefit by the fresh and invigorating air.

Even the oft-abused negroes lend an attraction to Jamaica. The cheerful "marnin' massa," of the Jamaican peasant, who is proverbially polite, more particularly away from town centers, is redolent of easy good humor and nonchalance. The street-cries with which the towns of Jamaica abound, strike the ear of the visitor with peculiar interest as they are vociferated by itinerant street vendors. "Ripe bananas gwine pass." "Ripe pear, dyah for breakfast," being two of the most familiar to visitors.

It would be opportune, while on the subject of Jamaica's natives, to make some allusion, if only en passant, to a few of the local proverbs in daily use. As a rule, when the members of this good-humored class make any attempt to court one or other of the muses, an undercurrent of welcome humor is conspicuous. This is self-evident in the following expressions which are peculiar to Jamaica:

"Dog behind is dog, dog before is Mister Dog."

"Nebber call alligator big mou' till you cross ribber."

"Candle no bun tap an' bottom."

"Alligator lay egg, but im no lowl."

"De soger's blood, but de general's name."

"Little fanga say 'look yondah,' big tumb say 'look yah.'"

"Hog run fe im life, awag run fe im character."

"Fowl swear fe im egg, but no fe im pickney."

There is a strange kind of traditional literature extant among the people of Jamaica, known as the "Anancy Stories." Many of these stories would form no bad addition to the fairy stories of the world, but the race of "nanas," or creole nurses who used to tell them to delighted audiences in the "old country" residences, is fast dying away. The word "anancy" signifies a "spider" in the creole African language, or patois, but its real meaning is not quite clear.

Speaking of the term "creole," it would be well to explain that it is not of necessity applied to people of colored descent alone. This is not the case. A creole might refer to anyone born in the West Indies. Thus, a child born of white parents in those lands would undoubtedly be a creole. And the term is not confined to the human race only, but has a wider scope and interpretation. Thus, it is no unusual thing to hear tell of a creole dog, while even agricultural produce is not exempt, and corn grown on a particular island, may be referred to as creole corn.

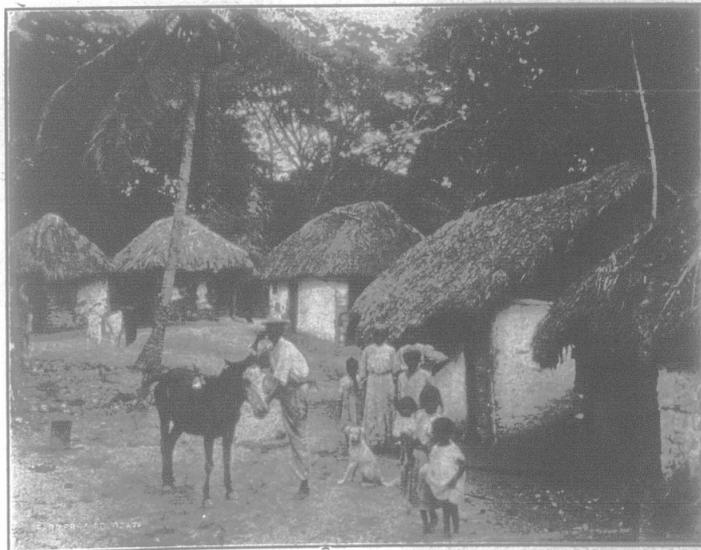
Generally speaking, sport in Jamaica is excellent. If the shooting be not quite equal to that of some other countries, the fishing is second to none. The mighty tarpon, declared by many fishermen of considerable experience to be superior to the salmon, and running up to hundreds of pounds in weight, are here, to be tempted and decoyed by the astute angler, the pastmaster in the art of casting the fly. To the more adventurous class, crocodile, or alligator



Pineapple Plantation, Jamaica.

matter of fact, Jamaica is a far-renowned health resort. It possesses a climate so varied, by reason of the varying heights to which its mountains attain, that a visitor may choose any climate between the warm tropical atmosphere of the plains, and the coolness—even the coldness—of the highlands rising upwards of 7,000 feet above the

stitute the unvarying daily weather, all the year round, interrupted only by the rainy seasons of May and October. Even the wet seasons, despite much that is said to the contrary, are not the bane they are said to be; many a one passing over with but a few light and welcome showers. It has been stated on unimpeachable authority, that, on account of



Native Huts, Jamaica.

level of the sea. Thus, if one place does not suit the requirements of the exacting stranger, another may be found, easy of access, yet possessed of the necessary advantages, as may be gauged by the following figures: The mean temperature of the island, at sea-level, is 78 degrees; at an altitude of three thousand feet, 68 degrees, while at seven thousand

certain moisture in the atmosphere, the sun's rays do not play the same havoc on suffering humanity as in the city of New York. This doubtless accounts for the fact that, in Jamaica, sunstroke is almost unheard of.

Like many another country, Jamaica is misrepresented, and, as a consequence, grossly misunderstood. Even in the

hunting, is just as plentiful as it is exciting. It is, however, fraught with a dual risk: that of the "Jonah" variety, and the danger to health, owing to the noxious exhalations of the malarial swamps frequented by these creatures.

The island of Jamaica is well intersected by Government railways, the capital city being well equipped with an electric-car service. Splendid hotels and stores are to be found in most towns, where shopping is generally relegated to the position of an early matutinal exercise.

The scenery of Jamaica is of a tropical character, and strangely beautiful. Few lands possess such undoubted fascinations as are to be found in the Blue Mountains of Jamaica, of which the lover of mountain scenery will never tire. Blue Mountain Peak (7,860 feet) in particular being well worth the special attention of the mountaineer. The view from the summit is beyond the power of pen to portray. In the deep hush, before the glimmering dawn, it is a world of mists, of clouds, and unrealities. Then, as the "rosy-fingered morn" gilds the heavens, and the world grows slowly light, the swirling cloud-sea grows primrose, pink, and crimson, wreathes itself about one, and floats away. Little by little the hills below rise out—even as they must have done at that "first sinking of the waters"—valleys come into view, and trickling streams, then, in the searching sunlight, the mountain homesteads, and away, and beyond, to the far south and the far north, over the terraced mountains, like giant stairways, to the rolling plains and the distant sea. In south, sunrise from Blue Mountain Peak is a sight worth travelling far to sea. Castleton, and Hope Gardens, within easy access of Kingston, are well worth a visit, amply repaying the

visitor for any time or trouble spent thereon.

Far too few, in their craving for new lands and new conquests, visit this alluring island of the South. Little more than a few days are necessary to lead the traveller to that which is, in almost every feature, a new world. Far more remote lands are too frequently selected for holiday or health resorts, whose attractions invariably lie in their extreme distance from home. Jamaica is a British Dependency, within easy access of the shores of Canada, and is the selected home of a fair sprinkling of our own kinsmen. Latitude and climate may account for many differences in customs and habits, but the same loyal hearts are there to be found, inspired with the same lofty ambitions, and with the same regard for their brethren in the great world beyond, whether it be in the sunny South, or the more vigorous North. This alone should cause many a one to pause, and act as an incentive to a visit to this lovely land over which the sun shines with a strange prodigality, and the stars with a bewildering brilliancy.

To the lover of astronomy, the stellar infinities as seen from this land, possess an indescribable fascination. There, doughty old Orion, with glorious Sirius, Ursa Major, and fragile Cassiopeia, together with inspiring Aldebaran, the gem of the Grecian Hyades, and many another heavenly gem and constellation, assume fresh beauties, greater glories, brighter hues, as they sparkle and scintillate with a magnificence altogether unknown in many another clime, speaking to the understanding of man, silently, yet convincingly, of Him Who created, not only the heavens and the earth, but who "made the stars also." Surrounded by cane and banana fields,

nestles the erstwhile busy town of Montego Bay, almost hidden by foliage, among which may be seen many graceful and gigantic tree-ferns and cocoanut palms. Montego Bay, formerly known as Manteca Bay by the Spaniards, earned its name on account of its trade in lard; the boiling of swine's flesh into lard constituting the early commerce of the place. It was ever in close touch with the outside world, owing to the facilities it presented for exporting goods without unnecessary transportation across country. Columbus visited this port on his second visit to the island.

Lucea, the picturesque, is a little town twenty-five miles west of Montego Bay, three hours by buggy sufficing for the journey. The best view of this attractive town may be obtained approaching from Montego Bay, whence the road skirts the sea-coast for about four miles, ere reaching Lucea, snugly ensconced at the foot of a number of adjacent hills.

Black River, the chief town and shipping port of St. Elizabeth, is situated at the mouth of a river of the same name. The town is generally well equipped, possessing a court house, club, and fine church, and is lighted by electricity.

Savannah-la-Mer is the chief sea-port in Westmoreland, and is a favorite stopping-place for tourists and others passing through on the popular motor-tour from Montego Bay to Mandeville. While surrounded by beautiful country and attractive scenery, the town possesses but little of interest, except as a center for the industries connected with coffee, ginger, rum, sugar, and logwood.

The visitor to Jamaica, satisfied with the peculiar and distinctive amusements and pleasures provided by its capital, will derive exceptional enjoyment from a

moonlight excursion across the harbor to the Palisadoes.

After the heat of the day, and the brilliant sunshine, the subdued light of the moon, the cool north breezes from the mountains, the dim palm-fringed landscape weirdly silhouetted against a lustrous sky, the whirring and chirruping of strange insects in the bush, all go to make an enchanting wonderland as one drifts upon the gently heaving waters.

The Roundabout Club

Results — Study II.

At first glance, it might have been thought that the topic, "The Greatest Movement in the World To-day," would probably bring out two, or, at most, three, subjects. The actual harvesting of the letters submitted in Study II., however, promptly dispelled the idea of so meagre a choice. "The Peace Movement," "The Laymen's Missionary Movement for the Evangelization of the World," "A General Movement Towards Liberty and Truth," were some of the captions of articles received, mentioned here in a trio, because in them the discerning eye may descry a certain relation and interdependence. On the face, it might seem that if the evangelization of the world, the preaching of the message of the Prince of Peace, were to result in the Christianization of all lands, then all other good must follow, the peace of the nations, the substitution of world-service for selfishness, the breaking of chains of superstition and slavery; yet it is a sad travesty on the sincerity of peoples proclaiming the Prince of Peace as their head, and the principles of liberty and



A Bit of Jamaica Scenery.

truth as their doctrine, that after nineteen hundred years of the preaching of Christianity, they are the very peoples that are leading the world in the maintenance of armies and warships, and, in these later days, even of aerial ships, designed for the destruction of property and human life. It has been well said that the "civilized" nations of the earth are Christian by profession, and pagan in their dealings one with another. The only hope lies in the fact that, after all, the world is, in many respects, growing slowly better. For instance, among civilized peoples the cruelty could not obtain to-day that existed a few centuries ago—even one century ago, e. g., during the horrors of the French Revolution. Again, never, perhaps, were more men gifted with high intellect engaged more earnestly in plans for the uplift of humanity; yet even this bright spot has a counter-balancing shadow. Never, perhaps, were more men engaged in the selfish game of emassing enormous personal fortunes through profits filched, by one means or another, from the lives of the masses of the people. Unquestionably, we live in the Trust Age, as one of our students has pointed out in his article on "Capital and Labor."

This, then, brings us back to our question of subjects: One student saw in the establishment of a republic in China the most momentous movement of modern times, and the one most fraught with importance for the immediate future of the world, while yet another, in no uncertain tones, proclaimed "The Woman's Movement" as the greatest in the world to-day. Not a single one, it was rather surprising to note in this distribution of opinions, touched upon the great growth of Socialism, which, it might be thought, would not be altogether overlooked in such a general study of world-forces.

Truly, "Many men of many minds," yet it may be most gratifying to our students to know that not a single poor or trivial essay, nor an utterly uninteresting one, was submitted.

The first awards have, however, gone to W. J. Way, Kent Co., Ont.; "Taps," Wentworth Co., Ont.; "Dufferinite," Dufferin Co., Ont.; "Dundee," Perth Co., Ont., and "Enoch Arden," Grey Co., Ont. Secondary award, to Mrs. W. Buchanan, Grey Co., Ont.

Honor Roll—"Grit," Grey Co., Ont. Some of the essays will appear as soon as possible.

The Greatest Movement in the World To-day.

(One of the prize essays.)

Perhaps in no previous era has the drama of life presented so many acts and scenes involving issues of deep concern and far-reaching consequences. Among the notable movements may be named, that under Dr. Sun Yat Sen, establishing democratic government for the Chinese; the Peace propaganda, the antithetical one of building vast armaments; and the movement towards church union.

These, and other great movements, however, are but contributive and auxiliary to the universal movement of humanity toward the ultimate goal of liberty and truth. The desire of men's hearts, and the trend of events, bespeak the dawn of a better day for the race,—a day when wrong shall cease and right shall prevail,—a day when peace and righteousness, harmony and truth, shall rule in state and church alike. In the material world, rightly understood, there are no discordant notes; so in the truly intellectual world there are none; then, why in the moral or religious world? Why should the church (or churches) raise a dissentient voice? As there shall be "one fold and one shepherd," there can be but one essential religious truth.

Intellectual truth for one man is intellectual truth for all men; so moral truth for the individual is moral truth for the race. That "the three interior angles of every triangle are together equal to two right angles," is a truth, and that it is in harmony with all truth, is an essential, eternal fact, and is in no way dependent upon a man's ability to demonstrate its truth. So moral or religious truth is one and eternal for all men, though all have not attained the knowledge which the "fulness of time" shall reveal. Tennyson beautifully expressed the thought when he wrote of:

"One God, one law, one element,
And one far-off, divine event,
To which the whole creation moves."

Recent science teaches that the physical universe arose from one simple element—the ether. Apparently multiple, all is essentially simple and one. Diversity is "adaptive change" to accomplish some end or design.

The movement of the age—including and transcending all other movements—is the quest of the inquiring mind for Truth. Recent advances indicate a synthesis and unification of knowledge. At various points the veil of seeming mystery is pierced or is rendered translucent by the light of science. Ever and anon, advancing with a stronger light and more searching method, the translucent becomes transparent, obscurity becomes clearness, doubt gives place to certainty, error is discarded, and truth established.

As the sun is above the clouds of earth, so the day-star of truth shines

mony with the highest intuition, he shall pass from conquest to conquest,—from heights of attainment to greater heights,—from glory to glory, to the summit of his being—to the very vicinage of heaven. He shall then behold the great Apocalypse. W. J. WAY.
Kent Co., Ont.

Hope's Quiet Hour.

Love Is Kind.

Love suffered long, and is kind.—1 Cor. xiii.: 4, R. V.

"We starve each other for love's caress,
We take, but we do not give;
It seems so easy some soul to bless,
But we dole the love grudgingly less
and less,
Till it's bitter and hard to live."

In that wonderful song of Love, which has been ringing out its melody ever

my life is like, go to the nearest farmer and spend the night in his pig-sty among his pigs. If you find it difficult to wriggle through the hole into the sty, that is like my difficulty here. But the advantage lies with you among the pigs."

That was many years ago, when pigs were not so well housed as now.

He went long journeys of many hundreds of miles by canoe, or in winter—with the thermometer registering 40 or 50 degrees below zero—travelled day after day by dog-sleigh. When 72 years old, he travelled for six days by stage, to relieve a sick clergyman, though the cold was terrible in its intensity. He was impelled by his love of Christ to carry the great tidings of God's Love to those who were living like beasts. Before the light of the Sun of Righteousness; savagery and sin were driven out. Bishop Bompas laid down his life willingly for his ignorant hearers, and was preparing a sermon to preach to them when the angel of death summoned him to meet the Master he loved.

A life like that humbles but inspires us. Sometimes, perhaps, it makes us dissatisfied with the commonplace tasks God has given us to do. Then it is well to remember that the Greatest Life the world has ever known, the Life that has transformed many millions of other lives, was lived almost entirely in a country village. The Saviour of the world spent nearly all the precious years of His short earthly life, working in a little carpenter's shop; or, perhaps, going out with a basket of tools on His shoulder to build or mend the houses of His neighbors. He worked for His daily bread like other men, although the salvation of mankind was His special, God-appointed vocation. Even when He was free to devote Himself particularly to the care of sick souls and bodies, He kept strictly within the limits of His own little country—a country only about 140 miles long, and not more than 70 miles wide.

Everyone is not called to do work which the world can easily see is heroic, but everyone is called to live a life of love. Love is the highest point we can reach in our climbing after greatness and goodness. Even heathen nations believe in the Power of God, but the glory of His revelation, as written down for us in the Bible, is that He is Love.

So we, if we are to be followers of God as His dear children, must learn by practice—daily and hourly practice—the lesson of love.

And so we come back to the commonplace duty of everyday, and learn that it is not grand and far away, but right within our reach. Love is long-suffering and kind. Perhaps this considerate kindness towards all, even towards those who are "hard to get along with," is not so commonplace and easy as we imagine.

There was a knight once who was noted for his gifts to the poor. Food, clothing, and money, were showered recklessly on all who chose to beg at his castle gate. He knew little, and cared less about the danger of pauperizing the people about him, and possibly he was very satisfied with himself; but he was no hero to his own servants. They were ordered about and scolded with scanty courtesy or consideration. He was willing enough to let the world admire his generosity, but his wife and children and servants knew, by everyday experience, that he was not really kind in heart.

We read lately about the lavish bounty of Miss Helen Gould at the time of her marriage. It seemed grand to be able to give a magnificent banquet to a thousand poor men; but perhaps—in God's sight—her considerate thoughtfulness to an old farm-servant was still more beautiful. Even the world—which can be cynical enough over large sums of money given by millionaires to various philanthropic objects—is touched to the heart by an unobtrusive act of real kindness. We cannot all give millions—I never read in the Gospels that Christ gave great sums of money—but we can all be long-suffering and kind.

Long-suffering kindness does not mean just being pleasant and agreeable towards the people who treat us well. That is a natural thing, requiring no effort at all. What about the people



Algonquin Park in Winter.

(Photo by Sallows.)

in the intellectual firmament above paltry allurements and unworthy ambitions, and in due time these will fade into shadow before the triumphant sway of the light and power of truth. Tradition, also, and ancient records, shall pass under its crucial and refining tests, and shall surrender their illusions.

Man, in the lowest plane of his existence, pays homage to a carved block of wood or stone. In the course of generations, his conceptions of Deity rise to more superb objects, and to crude ideas of the Invisible through the visible. In more advanced enlightenment, man conceives of the ideal, the Absolute. These are but steps, or degrees, in the ascending scale of being. Thus successively, gods are dethroned, codes revised, dogmas renounced, creeds abandoned. Havmas renounced, creeds abandoned. He turned his back on the comforts of life, on friends, and books, and kindred, living more than forty years among Indians and Esquimaux, and sleeping sometimes in huts which he described to a friend in England after this manner: "If you wish," he wrote, "to know what

since St. Paul wrote his first letter to the Corinthian church, the first thing we hear about Love—"the greatest thing in the world"—is that it is "kind." That is such a commonplace virtue we are apt to overlook its beauty. Our hearts are stirred by tales of heroic endurance, and we long to prove ourselves heroes, too, by doing something splendid and unusual. It is very good for us to hear about the men and women who have lived grandly. It is not only an inspiration to us to follow in their train, but it also takes the conceit out of us. We feel very small—most of us—when we compare our easy work for Christ with the many lives laid down for Him in self-sacrificing devotion. Only last Sunday I heard a sermon describing the work of Bishop Bompas in the far North. He turned his back on the comforts of life, on friends, and books, and kindred, living more than forty years among Indians and Esquimaux, and sleeping sometimes in huts which he described to a friend in England after this manner: "If you wish," he wrote, "to know what

who are fault-finding and bad-tempered, who seem to go out of their way to make life disagreeable for others? Can we keep our temper unruffled and be really kind—in thought as well as in word—when working with them or under them? Then we shall have a gift of great value to lay at the feet of our God.

Harold Begbie tells the story of a man who had grown up in the London slums, had begun to steal when almost a baby, and had sunk lower and lower under the influence of drink and bad companions. After nine years in prison, he was sick of the misery of sin. Like the Prodigal Son, he "came to himself" and to his Father. Then he searched for his mother and found her living in wretchedness and want. He made a home for her, and taught her to serve the God of Love. She showed the power of God's Life within her soul lavishing on her son the kindness he missed in his neglected childhood. Misery has made room for happiness in that home—a home where Christ abides. The son "loves to put by his savings to give his mother little treats and little surprises—oh, quite little treats and surprises, for they are poor people; and she, on her part, loves to make him some tempting dish for his supper, and, by her labor, to keep his linen and his wardrobe in apple-pie order. . . . They are quite beautiful in their love."

The Master, Who was made glad by the simple beauty of the wild flowers at His feet, must rejoice greatly over the homes where kindness is the everyday law and custom. We all know people who seem to breathe naturally the atmosphere of kindness. To hear an irritable note in the voice of such a one would give us a real shock. Why can't we all, by persistent practice, make kindness natural and easy?

A woman once lived in France who was famed for her fascination. She won the hearts of all who knew her. Authors sought her sympathy and read their books to her, painters brought their pictures for her to look at. She was genuinely interested in the happiness and success of others, and always ready to put her own affairs to one side and give full attention and sympathy. Long after the beauty of youth had passed away, she continued to charm all around her by her beautiful kindness.

Kindness is a most valuable accomplishment and worth cultivating. If we pray every day: "Lord, help me to remember others and forget myself!" and keep always on the watch for a chance to be kind, we shall grow more and more like our Father, Who "is kind unto the unthankful and to the evil."

"Two little old ladies, one grave and one gay,
In the self-same cottage lived day by day.
One could not be happy, 'Because,' she said,
'So many children were hungry for bread';
And she really had not the heart to smile
When the world was so wicked all the while.
The other old lady smiled all day long,
As she knitted, or sewed, or crooned a song;
She 'had not time to be sad,' she said,
'When hungry children were crying for bread.'
She haked, and knitted, and gave away,
And declared the world grew better each day.
Two little ladies, one grave, one gay;
Now which do you think chose the wiser way?"

DORA FARNCOMB.

Visiting Foster Children.

Rev. Amos Tovell, Agent for the Children's Aid Society of Guelph, writes: "Fifty children in country homes were visited by me during the past month, and about two hundred and fifty miles were driven. I can give nothing but the most satisfactory reports of these children. Not a sick child was found. Only one foster parent lodged a complaint, and that was very minor. One child has since been transferred to another home because of changed conditions in her former home. In almost every case the foster parents spoke well of the children."

The Beaver Circle.

OUR JUNIOR BEAVERS.

[For all pupils from the First Book to Junior Third, inclusive.]

Dear Little Beavers,—Do you wonder what the little girl and boys shown in the picture are doing? They live in Ireland, and they are gathering peat. Peat is made up of decayed mosses, plants, and roots, as you may know. It is cut from the bogs, dried, then used for fuel, just as we use coal and wood. These children, you see, have been gathering up the peat and piling it into baskets, or panniers, to be carried home by the sturdy little donkeys that you see in the picture. I daresay you think the work would be great fun.—Don't you?

Junior Beavers' Letter Box

Dear Puck and Beavers,—I live on a farm. I go to school every day. I have three sisters and two brothers. We each found a bird's nest last summer. Before the little ones were feathered there came a big rain storm, and they all perished in two nests.

My father has taken "The Farmer's Advocate" for twenty years, and his father for as many more.



Little Peat Gatherers.

Will any one who has a birthday on December 10, please write to me?
GERTRUDE CLARK (age 9, Grade V.).
Bayhead, Nova Scotia.

Dear Puck and Beavers,—This is the first time I have written to you. My father has taken "The Farmer's Advocate" for six years. I have read the letters, and like them very much. I live on a farm near the school. I think it is fun going to school. My pets are a collie dog and a colt. We call the colt Minnie.

The G. T. R. train runs through the back of our farm. The name of our farm is "Elm Lane." As my letter is getting rather long, I will close.

CARMAN FITCHETT (age 10, Jr III.).
Tuftsville, Ont.

Dear Puck and Beavers,—As this is my first letter to the Circle, I will tell you where I live. I live near Thornbury, in the county of Grey. They have built a new municipal telephone line here. We have the rural mail here. It is very handy to bring the mail in when coming home from school. For pets, I have a dog named Joe. I had a cart. One day at I was riding along, all at once I

fell down; the axle had broken off near the wheel. My father was plowing one day in November when he saw a big hawk flying around. It had killed a chicken. Father told me to get the trap and a stake; then we fastened it down. When we got to the other end, the hawk came up to the chicken nice and quietly, and got caught in the trap. His wings measured four feet from tip to tip. My father has taken "The Farmer's Advocate" for a long time, and likes it very much.

LEONARD SHORE (age 10, Jr. III.).
Clarksburg, Ont., R. R. No. 2.

Dear Puck and Beavers,—This is my first attempt to write to you. My father has taken "The Farmer's Advocate" for a number of years, and I like reading the Beaver Circle letters. I live on a farm of two hundred acres. My father keeps sheep, pigs, cows, horses, and poultry. We have two little colts named Queenie and Modie. I go to school every day; I like it very much. We have a lady teacher. I am in the Junior Third Class. I think this letter is long enough for this time.

FREDDIE RATZ (age 10, Jr. III.).
Mitchell, Ont.

Dear Puck and Beavers,—My father has taken "The Farmer's Advocate" for quite a number of years, and I enjoy reading the letters from the Beavers very well, so I thought I would write one, too. We have three horses; their names are Dan, Daisy, and Maud, and one little colt; its name is Queen. I have a new sleigh. My letter is getting too long, so I will say good-bye.

ORVILLE TROTT (age 8, Class II.).
Mt. Bridges, Ont.

The Ingle Nook.



Miss M. E. Durham.
(From "The Bookman.")

[Miss Durham is the first European war correspondent. She has completed a book, "The Burden of the Balkans," which will be published soon.]

"Dick Durham."

Dear Ingle Nook Friends,—Perhaps, today, just for a change, you will enjoy a chat about a real, live person, instead of our usual meandering over generalities and household topics.

The one I have chosen to talk about seems to me a very remarkable young person indeed, and very likely you already know something of her, especially if you have been following the weekly accounts of the terrible war in the Balkans.

My own attention was first attracted to her some weeks ago, when reading one of her war reports, written in the very heart of the distracted country, for the British "Nation." "Ha!" thought I, "Here is a war correspondent who knows how to write!"—so crisp, so direct, so vivid in word-picturing was the sketch.

This first report was followed by others, some scribbled within ear-reach of the moans of the wounded in hospitals, others in the huts of devastated villages, and a very few (for war correspondents have, as a rule, been kept away from the vicinity of battle-fields during the Balkan war) from heights within bullet-reach of plains whereon terrible battles were being fought, but not for weeks did I find out that "M. E. Durham" was a woman, and a comparatively young one at that, Miss Mary Edith Durham, "artist, traveller, nurse, author, and war correspondent."

Whether as nurse or as newspaper reporter Miss Durham first found her way to the Balkans, I have not been able to ascertain, but it may be imagined that she combines the two, finding it possible to carry on woman's work in the homes and hospital-wards along with the more masculine occupation of writing about battles.

"The women love her," says a writer (in "Westminster") who met her out there. "Indoors they pet her like a kitten, break off pieces of bread for her at meals, and, when she cannot understand their speeches, 'burble over her like delighted guinea-pigs.' . . . And the young men? They fall in love with her in batches, while the go-between assures her it is 'such a chance as hardly ever happens,' and cannot understand her failure to snap at it."

With this introduction, then, may I quote to you a bit of Miss Durham's own writing?—so that you may see at first hand how wonderful her talent as a word-colorist is.

But then, she should be a colorist. She has studied, you must know, at the Royal Academy, and has exhibited pictures at both the Royal Academy and the Royal Institute. After all, there is a close kinship between brush-coloring and word-coloring, is there not?

After reading the sketch below, you will surely realize more keenly than ever before the awful, sickening horrors of war. Once, in his early days, John Ruskin said that women, by their encouragement of it, help to keep alive the spirit of war, and sometimes when hearing of presentations to school-boys, of

Dear Puck and Beavers,—This is my first attempt at writing to the Beaver Circle, and I hope I may see it in print when my turn comes. My mother and father and I live alone just now, although I have two brothers and one sister. My oldest brother, who is an engineer on the Grand Trunk Railway, got married lately, and lives in Toronto, and my sister is staying with them.

I like "The Farmer's Advocate" fine. I try to be a good boy and help my mother all I can. I am a little too young to know whether I'll be a farmer or not, but whatever I am I will try to do my best. As my letter is getting pretty long, I will close.

RALPH DENNIS (age 8, Jr. III.).
Caistorville, Ont.

RIDDLES.

What has eyes and cannot see? Ans.—Potatoes.

What has ears and cannot hear? Ans.—Corn.

Sent by Teresa Brohman, Ponsonby, Ont.

HOW CATS WASH.

Bobby—"Look at pussy washing her face."

Susie—"She's not washing her face; she's washing her feet and wiping them on her face."

flags and rifles, and uniforms, by certain women's organizations, I have wondered if he did not speak truly. Yet, surely, every woman who has thought deeply into the matter, must realize that there is no glory in war, and must see that we have long out-lived the barbarous age in which it was held to be a grand and noble thing. Surely, woman, with the tenderness of heart with which she is generally accredited, should find it more to her mind to devote her influence toward the establishing of peace and human kindness on earth, than towards stirring up in young minds a rose-glamored vision which sees little past the tinsel of parades and blare of martial music. Now, let Miss Durham speak of that which she has seen at first hand, so long ago than the first of last month.

(See "Miseria," next column.)

"The Farmer's Advocate" Fashions.



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coat, the other for skirt, twenty cents must be sent. Address Fashion Department, "The Farmer's Advocate and Home Magazine," London, Ont.

Miseria.

"It isn't an illness," said a little Croatian sister, whose business it is to count the shirts and sheets, and see that the Montenegrin maidens do not steal them from the Montenegrin sick and wounded—for your Montenegrin woman is a rare thief, and will plunder anywhere. "It is not illness—it is only miseria!" A human wreck—a fragment left by the wave of war—lay gasping and retching. "Miseria!" Only miseria! It is what we are suffering from here now. "Red Crosses," English, Austrian, French, Italian, Russian, Bohemian, swarm. They struggle indeed for patients. They are fitted up with wondrous surgical appliances—but they will take no infectious cases. And the aftermath of every war is illness—not wounds. So the beautiful and costly foreign hospitals, which absorb all the best buildings, remain half-empty, and we—who are attached to the Montenegrin Red Cross—wrestle with typhus, enteritis, gastritis, dysentery, and smallpox—all mixed together in one seething mass.

In spite of the fact that a marked and typical case of smallpox was in the ward, the Montenegrin authorities persisted it was chickenpox, and poured in other patients, till too late. And these wretched "other patients!" Patient is indeed the word that fits them. Suffering intolerable and incredible! Miseria! One lay in a corner on a filthy straw mattress, and stank most sickeningly. There he lay moaning ceaselessly. "Dysentery—very typical," said the doctor.

"Don't go near him," said a Montenegrin maiden; "he stinks." In truth "miseria" summed him up. An elderly man, stricken for a fortnight with acute dysentery—emaciated, hardly human in his filth. His extreme forlornness was appealing.

He muttered feebly, "I've worn these clothes for a month and a half. I cannot live any longer. I can't sleep for the vermin. My foot is dead. They tied it up ten days ago." Such words—feeble and disjointed—told his tale. We loosened the filthy bandage, and the little toe, bone and all, came off with it. Lice rushed from the oozing sore. It was a frost-bite. "Ten days and nights," he moaned, "I walked through snow, sometimes up to my breast. Then I was ill. My other legs hurts too!" His other leg was raw and suppurating. Another frost-bite.

He had been ordered milk by the doctor. But no one had been there to see that he had it, and for two days little but dirty water had passed his lips. Then a Bosnian doctor and his wife, a Russian doctor, and a few other foreign assistants came as volunteer helpers. "If it weren't for the strangers we should all be dead!" said an unhappy man.

But even with "the strangers," miseria triumphs. A man—all that remained of one—was brought in, moaning horribly. Three days and nights he had lain in a ditch of snow, and, though marble-cold, was still alive. Conscious, alas! and in agony. But he survived only a day in spite of all efforts.

General Vukotich's army plunged through snow for ten days, and slept in it for ten nights, in order to come from "Old Serbia" to Scutari. Bronchitis, pneumonia, and rheumatism, are the price paid. And, alas! from Turkish territory they carried smallpox.

Here, in the hospital, lie men, whose legs to the knee and above are cold as stone. They cannot sleep for the aching. And not more than one blanket is available for each. Almost all, when they arrived, were stockingless, and not a pair of socks or stockings can Podgoritz produce.

"It isn't the fighting I mind; it is the lying awake all night as cold as ice. If we could only have a bit of fire!" said one. But wood is hard to get, and the stove smokes.

Endless rubbing with camphor and mustard spirit fails to stir more than a feeble and temporary circulation.

An icy wind blows—shrieks—tears the water cans from the hands of the river women, who struggle up from the river with them. Bang—crash goes a window-

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páne, and a blast cuts over the miserable, shivering beings on their filthy mattresses. A gum-pot and a daily paper from England serve as temporary repair.

Fresh glass cannot be obtained, as all workmen are out as soldiers. Service in the hospital is largely performed by Turkish prisoners.

Miseria! If this be the price paid by the conquerors, the woe of the conquered must be untold and incredible.

Scutari—Scutari, the joy of all lovers of the picturesque and beautiful—lies starving and suffering but a day's journey distant. And around it, freezing and shoeless, and suffering, is the besieging army.

Why is it that so much sympathy is expended on the wounded? The wound from a modern rifle—if it does not touch a vital part—is comparatively insignificant.

The speed of the bullet partly cicatrises the wound, and if it be kept even moderately clean, it heals in a fortnight. And the wounded has always a certain glory that buoys him up.

It is the victims of miseria that are truly pitiable. Those that drop in the track and rot.

And miseria is the price of war! "The Balkan land for the Balkan People." But the Balkan lands were but sparsely populated, and the victims are innumerable.

At the beginning of September, when all was being prepared for war, and the Serb inhabitants of Kosovo Vilayet being daily supplied with rifles, a Serb of Plava said, "Last year the Malsori of Malsia-madhe revolted. They fought fair; they never assaulted a woman, nor burnt a mosque, nor mutilated a body. They hoped Europe would intervene and protect them, and recognize that they had fought as civilized people. What did Europe do? She hurled those people back to the Turks with never a guarantee of any sort. She supported the Turk who burnt, mutilated, and assaulted. This has taught us a lesson. Europe likes horrors. Very well—she shall have them. This war that is just going to begin will surpass all others. We will take eye for eye—head for head. Then perhaps Europe will be satisfied!"

This programme has in truth been carried out. All that the Turk has done for five centuries has been repaid him in one supreme blood-bath.

The vengeance is colossal and complete. But the price paid is miseria.

"There will be no Moslem problem," says many a Balkan man, "because we have killed them nearly all off. Those that survive will have been taught a lesson they will not forget."

To us on the spot, with "Peace" now almost in sight, the question is, what will be the result of the struggle that must inevitably follow? The struggle against no human foe, but the struggle against the horror that will fall alike upon victor and vanquished as they reel exhausted from the fight—the struggle with Miseria.

M. E. DURHAM.

This is war—real war!

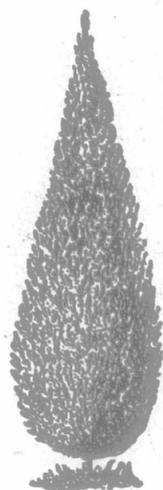
Our New Public Health Department.

Without doubt you were much interested in the new department, dealing with public health, which appeared on page 182, January 30th issue; and without doubt also, you would like to hear a little more about it. The department, as stated, is under control of the Institute of Public Health, this city, whose staff at present is made up of a medical doctor, a professor of bacteriology, and a professor of chemistry. As you may imagine, these men do not undertake to treat, by mail, critical cases of illness which require the personal care of a physician. They are ready, however, to answer all questions in regard to public health, through our pages, and also to answer questions privately, if a stamped, self-addressed envelope accompanies the inquiry. If you have, then, any problems in regard to general health conditions, etc., send them to us, addressing the envelope, "The New Public Health Department," "The Farmer's Advocate," London, Ont., and they will be placed in the proper hands.

The Chinese, as you may remember, pay physicians to keep them well. This

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 How *fat—rounded—substantial*.
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 Because the *Manitoba strength* that
 is in FIVE ROSES will hold them up
 till eaten.
 This sturdy *elastic* gluten has kept them
 from dropping *flat* in the oven.
 No unsightly holes 'twixt crust and crumb—
never.
 All risen *evenly—to stay* risen.
 Never heavy—sodden—soggy—indigestible.
 Yours are the FIVE ROSES loaves—
 Crinkly and *appetizing* of crust.
 Golden brown and tender.
 Snowy of crumb—*light as thistledown*.
 FIVE ROSES helps a lot.
 Try it soon.

Five Roses Flour

Not Bleached



Not Blended

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new venture is something in the same line, is it not?—Only that to you the information given is free.
 The new department will appear on an average about every second week.

PRETTY "NECKWEAR"—CELERY RELISH.

Dear Junia,—Enclosed you will find a recipe for celery relish which someone enquired for in last issue of "The Farmer's Advocate."

Have you not found the supplying of everyone's needs in the recipe and fancy-work directions lines a little bit tiresome?

For years we have enjoyed the Dame Durden or Junia columns, and have often felt a guilty sense of taking all and giving nothing—not even a word of appreciation. I am enclosing samples of simple fancy-work. The daisy explains itself. Three of them are applied to the popular velvet bow, in a triangular point down, while three more hang by three- and four-inch lengths of braid from the others. The washable frill is made as follows: To the length of tape required, fasten thread of brilliant cotton, chain five, one treble into edge of tape, chain two, one treble into tape, repeat from star.

Second row—Three doubles into last two chain, fold tape together, five trebles over treble of last row, one single into two chain of last row, repeat from star to end of tape, cut off thread.

Third row—Use silk, one thread, size E, sewing silk, or two threads if finer. One double into each treble of previous row.

Celery Relish.—Two dozen stalks celery, 6 large onions, ¼ lb. mustard, 3 cups white sugar, 1 teaspoon red pepper, 1 tablespoon curry powder, 1 tablespoon salt, 1 quart vinegar. Cut celery and onions fine, put the mixture over

Farm the Hills Too

You don't have to own a prairie to use a tractor. A little planning, and a tractor will be as useful on sloping land as on level. Especially the

GAS PULL LA PORTE

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Write for our interesting tractor story—Gas Pull Data-book No. 352, and ask the name of our nearest dealer.

RUMELY PRODUCTS CO.

(Incorporated)
 Power-Farming Machinery
 TORONTO, ONT.

them, cook slowly, stir often, and don't let them get soft.

Victoria Co., Ont.

Our thanks are certainly due to "M. M.," who has gone to so much trouble to help us along. The "daisy" pattern which she enclosed is made of coronation braid, rather heavy, and with long "knots," two knots, doubled, forming each petal. The center of each daisy is then filled in with yellow silk, in French

knots, and very pretty indeed is the effect.

Since receiving this letter I have made one of the frills, and found that it could be done quite easily by following M. M.'s directions closely, only that, I imagine, she uses the term "treble crochet" (thread twice over the needle) instead of the usual term, "double crochet" (thread once over the needle). By experiment, I found that the treble crochet makes

exactly the same kind of frill, only considerably wider than the sample enclosed by M. M. The "first row," when completed, is a row of square holes; the trebles (or doubles) of the second are worked along the uprights of these, the tape being doubled each time.

BRONCHITIS CURE—BREAD.

Dear Junia,—Many happy returns of the New Year to you all, also all the season's greetings.

I took a notion I'd send you a little letter to help our "Advocate," if I could at all escape the w.-p. basket.

We still read the paper with pleasure, and hope it may always prosper. We have had a pleasant winter so far in our part of this terrestrial ball. I am going to send you a few recipes, and one is a cure for a baby who is subject to bronchitis or cold in chest. Rub chest back and front with tallow, also the bridge of the nose; heat the tallow, and it forms a coat on the flesh, and this softens the cold. We lost one dear little boy from bronchitis, and have another subject to it, and this is a simple remedy. It was given us by a kind mother.

My second little help is to tell my way of baking bread, which may help some other little school ma'am who settles down to the sturdy work of a farmer's home.

Take three good-sized potatoes after dinner (boiled ones) and mash fine, or pound. Add a handful sugar (brown), also 1 handful flour, and stir into mashed potatoes, then pour on 1 cup boiling water and whip this like a cream. Set aside till you eat your dinner, and soften 1 Royal yeast-cake and drop into the potato sponge (if it is lukewarm). Set in warm place till bed-time, and add three quarts water and stir all to a batter like pancakes, then cover for the

POTATO GROWING COSTS CUT IN TWO

EUREKA PLANTER

Double your potato profits. Minimum labor. Use a Eureka Potato Planter. Open the furrow, drop seed accurately any distance or depth desired; puts on fertilizer if wanted, covers perfectly and marks for next row. Always plants uniform depth. Requires only one man. Driver can walk drop. Made in three sizes, for 1 or 2 rows.

The Eureka Harrow and Seeder

A harrow, smoothing harrow, cultivator, weeder and seeder all combined. Forms dust mulch and conserves moisture. Three sizes, 6, 10 and 12 ft. Lever with pressure spring regulates depth of cut. Pulverizes the soil. Levels the ground. Teeth are flat and can be removed to cultivate in rows. The driver rides.

Seeding boxes can be easily attached to sow grass seed, alfalfa, clover, etc. Adjusts for seeding various quantities. Teeth cover seed thoroughly, either shallow or deep. Economical in price.

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North Pelham,
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W. H. Calder, Grimsby.

EXPERIENCED feeder (single) wanted for Shorthorn herd, near Toronto. State experience. Box H, Farmer's Advocate, London, Ont.

EXPERIENCED farm hands and married couples require good positions. Farm Employment, 140 Victoria St., Toronto, Ont.

FARM for sale or rent—130 or 180 acres, well drained, excellent for grain, dairy, in Delaware Township. Jos. Weld, Farmer's Advocate, London, Ont.

FARM for sale—One Hundred acres in Township of Ancaster, County of Wentworth, ten miles west of Hamilton, on stone road; half mile two stations, school, store, church, blacksmith shop. Rural mail and telephone; everything else up-to-date. Stanley Templar, Copetown, Ont.

FOR SALE—Two rich and productive farms, suitable for beef or dairying. Containing about 218 acres, soil clay and sandy loam. Well tile drained, good brick dwelling, modern bank barns and silo nearly new, and situated to accommodate both farms with rock water before stock. Ten acres woods and three acres orchard, remainder cleared. Seventy acres seeded to alfalfa and red clover, 14 acres under wheat, 18 acres ready for spring crop. Situated 2½ miles from Appin, Middlesex Co., Ont., with rural mail and long-distance telephone. Forty per cent. cash, and remainder mortgage. Will sell all or part at reduced figure on account of ill-health. Apply to A. B. McDonald, Appin, Ont.

FARM for sale—One of the best equipped in North Dorchester, about 100 acres, all wire-fenced; 8 acres in wheat; well tiled; bank barns, bog pen and other out-buildings nearly new, cement basement stables; silo and windmill; 2 story Milton red pressed-brick house, hard and soft water inside; buildings worth nearly the price asked. \$10,000. D. D. York, Harrietsville, Ont.

WANTED—About April 1st, a competent married man for farm work, to engage by the year; must be a good milker; good wages to a good steady man, and a comfortable house provided; the farm adjoins the village. Apply to H. M. Ralph, Glen Rouge Farm, Markham, Ont.

WANTED—Single man for dairy farm; good plowman and horseman. State yearly wages. F. Jackson, Downsview.

WANTED—Reliable married man to work with horses. Must understand farm implements. Reply stating terms and giving references. Robt. McEwen, Byron, Ont.

WANTED—Two experienced herdsmen for Eastern Ontario, to take charge of important dairy herds. Wages for head herdsman to start at \$65.00 per month, with house; for assistant herdsman, \$65.00 per month, without house. Farm conveniently located to city, and living conditions attractive. For further information apply: Box R, Farmer's Advocate, London, Ont.

WANTED—Good farm hand, single, capable of taking charge for part of year; highest wages. Apply at once to John Buchanan, Box 168, Dutton, Ont.

WANTED—Nice young woman to do house-work in fine Protestant country home. Mrs. E. W. Burt, Paris, Ont.

WANTED—An experienced farm hand, single or married, well experienced in feeding show stock and handling horses, to engage by year or shorter term. Apply to Geo. D. Fletcher, Erin, R.R. No. 2, Ont.

\$4,500 WILL BUY choice farm, forty acres, more or less, lot 6, con. 4, Delaware Township; ten acres of fruit trees, fine sugar bush, large brick house, fine fruit house, barn and drive house; over one hundred magnificent spruce trees along front and driveway. Address: Miss Doust, Lambert P. O., or on the premises.

WANTED—CUSTOM TANNING—Send me your cattle and horse hides, and have them tanned and made into robes and coats. Deerskins tanned for buckskin, also made into mitts and gloves. We tan all kinds of hides, skins and furs. Send them to me and have them dressed right. S. F. BELL, DELHI, ONT.

Seed Oats for Sale—Lincoln—From prizewinning field competition, 1912. I won fourth prize for grain at Ottawa Exhibition, fifth prize at Guelph Winter Fair; also second in open grain exhibit. Price, 85c. in 5-bushel lots; \$1 per single bushel. Bags 25c. each. J. M. MOODIE, Black Bank, Ont.

For Sale—About 300 bush. O. A. C. No. 21 Barley, guaranteed free from weeds and true to variety; 90c. per bush.; 80c. in 10-bushel lots. Bags extra. Cash with order. WM. ELLIOTT, Galt, R.R. No. 1.

night. In the morning, you take your sponge and add a pint of lukewarm water with a handful of salt dissolved, and mix all together into a soft sponge. Give one more mixing in dish, and then mix on table and let stand 20 minutes and shape softly into rolls in pans, and you will have six pans of two rolls each. I am delighted the time for the crochet work has come in our paper, as that is the part I enjoy.

With best wishes, I guess Wee Jean will exit. -Your little
SCOTCH LASSIE JEAN.
Onslow Cor., Que.

Many thanks, Jean, to you, and all others who believe in "passing a good thing on."

RE FINISHING HOUSE.

Dear Junia,—I have been an interested reader of the Ingle Nook for some time, and have enjoyed the weekly chats and letters very much.

I am puzzled over a problem of house-decoration, and wonder if you can help me. If I finish my dining-room and living-room in white, how shall I treat the doors that join another room, finished in a different color? To have one side white and the other another finish would not look well from either room when the door was open. Thanking you in advance, I am,
LOUISE.
Essex Co., Ont.

In most of the houses I have seen in which the drawing-room was finished in white, there were no doors—only arches and curtains—so the difficulty was obviated. I have, however, just asked a man who owns one of the finest houses in this city, one in which the drawing-room is finished in white, and provided with doors to adjoining rooms finished in mahogany, how the doors have been finished. He says that they are enameled in white on the drawing-room side, and finished in mahogany on the other, and that the effect is by no means bizarre.

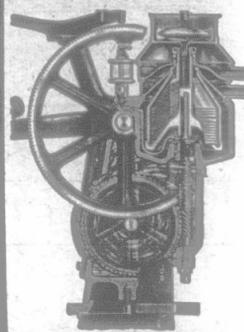
How to Manicure.

[The following, from "Lady's World," has been kindly sent us by "Greybird," for the Ingle Nook friend who wrote in regard to taking care of her finger-nails.]

The first process is to wash the hands and then to soak the nails for several minutes in soapsuds made from pure Castile soap. A small pinch of borax, or a few drops of simple tincture of benzoin, may be added to the water. Some manicurists simply add a little perfume. After wiping the hands with a soft towel they should be trimmed to an oval shape with a proper nail file. Unless the nails have become very long, it is better not to use nail scissors. If there are any discolorations on the nail, a nail-bleaching or cleansing fluid may then be applied with a tiny piece of medicated cotton wool wrapped round the point of one of the little orange-wood sticks sold in bundles by chemists and manicurists. This removes all foreign matter that may have lodged under or round the edge of the nail.

Sometimes the cuticle has grown over the base of the nail, completely obliterating the pretty half-moon. With a well-kept hand, this, of course, never happens. If the skin surrounding the base of the nail is very gently pushed back with an ivory presser or with the forefinger, covered with a soft towel, every time the hands are washed, the cuticle will never obscure the lunular. Supposing, however, that through neglect the skin has grown over the lower part of the nail, it will probably be necessary to gently loosen it all round by carefully inserting the flat end of the orange-wood stick under it, being most careful not to cause pain or bleeding of the skin. The loosened skin may now be scraped away with the cuticle knife, or, if preferred, it may be most carefully and delicately cut away with the cuticle scissors. These have curved points, and should be made of the best quality steel. Cutting the cuticle, however, is not advocated, unless it is tough, and has grown very high up on the nail, as with sensitive skin, soreness and hang-nails may result. In all cases, after treating the nail in the way above described, a little cold cream should be rubbed round and over the nail. Allow this to remain on for a short time, then wipe off and

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In other, so-called, automatic oiling systems some of the parts have to be oiled by hand and no provision is made for getting rid of dirt that may get into the oil from the outside or of small particles of metal which come from wear, so that after a short time the oil supply becomes foul and injurious to the finely adjusted wearing parts.

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High-class Holsteins

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Fifty-five head of milking age, mostly fresh or springing, five choicely-bred bulls of various ages, ten yearling heifers and five choice grades in milk. No faulty udders. Tubercular tested. Good cattle and a square deal. Many of these cattle have R. of M. and R. of P. records. Some have both. We believe no such large lot of such uniform excellence was ever before offered to the public of Canada.

Thorold is easily reached by Grand Trunk, and by trolley every hour from St. Catharines, Merriton, Niagara Falls, Welland, Welland Junction and Port Colborne, which gives good connections with all C. P. R., M. C. R., T. H. & B., Wabash, Pere Marquette, Buffalo & Goderich and St. Thomas' points.

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R. E. HAEGER, Algonquin, Ill.
L. V. GARNER, Welland, Ont.)

MONRO & LAWLESS, Proprietors, Thorold, Ont.

WRITE FOR CATALOGUE

MORE POTATOES PER ACRE

Think of finding one to eleven \$5 bills in the furrow, on every acre you plant. It's been done many times. Plant the spaces you skip, sell the potatoes, and you've got the money. No extra land, no extra work, it costs no more to prepare ground, fertilize, cultivate, spray and the perfect stand.



IRON AGE (Improved Robbing) Potato Planter (Now made in Canada.) This machine soon pays for itself and yet puts real money into your pocket. One seed piece in every space and one only. Uniform spacing. No injury to seed. Ask your dealer to show it and write us for free booklet. "10c. Per cent. Potato Planting." We make full line Potato machines, Garden tools, The Bateman-Watson Co., Limited 416 Symington Ave. Toronto Ontario

Choice Regenerated Banner Seed Oats from my prize field. Also O. A. C. No. 21 Barley. Oats 75c. per bush.; Barley 90c. Bags extra. W. A. DOUGLAS, Tuscarora, Ont.

FARM FOR SALE

213 ACRES. Three miles east of St. Mary's, on Stratford Gravel Road. Very suitable for stock, being excellently watered, well fenced, noted wheat land, limestone bottom, comfortable house, cement silo, 14x40, three barns, 30x56, stone and cement walls, roomy cattle stables, up-to-date horse stable. Spring water piped to house and barn, runs the year round. About 20 acres maple bush. Price for quick sale, \$13,000. Easy terms. Apply to

H. H. STEVENSON
Manager of The Molsons Bank, St. Mary's

Young Men

FOR ONTARIO FARMS
Arriving February, March, April. Apply:
BOYS' FARMER LEAGUE,
Drawer 126. Winona, Ont.

apply a little nail-polishing powder. A chamois leather nail-polisher (this is a little oval-shaped pad covered with chamois leather, and having a polished wood top with shaped handle) should now be rapidly rubbed backwards and forwards over the nail. In a few moments the nail will have acquired a highly-burnished surface. If it lacks color, a tiny drop of carmine nail-coloring may be applied, and it may then be polished again. It should now appear of the delicate color of a conch shell.

Ridged or fluted nails are generally due to malnutrition. They are often seen in invalids and aged people, and may be, to some extent, corrected by rubbing in lanoline night and morning, and every time the hands are washed. This overcomes the lack of natural oil in the nails. White spots, or "gifts," as they are called, are due to the same cause.

Forgot to Sign Her Name.

The Fashion Department has received an order from Nashville, Ont., for three patterns, No. 7091, No. 7583, and No. 7582, but the writer has forgotten to sign her name. Upon receipt of this information, the order will receive attention.

Palatable Dishes from Left-Overs.

Cream Rice Pudding.—Two tablespoons cold boiled rice, 3 tablespoons sugar, yolk of 1 egg, 3 tablespoons cornstarch, 2 cups milk, 1 teaspoon vanilla. Put the milk and cold rice in a double boiler, add sugar and salt. When it boils, add the cornstarch wet in a few tablespoons cold milk. Just before it is ready to take from the fire, add the egg and flavoring. Eat cold, with whipped cream.

Oatmeal Muffins.—Scald 1/2 cup milk and add 1/2 tablespoons sugar and 1/2 teaspoon salt. When just lukewarm, add 1/2 yeast cake dissolved in 1/2 cup warm water. Work 2 1/2 cups flour with 1 cup cold oatmeal porridge and add to the milk. Beat thoroughly, cover, and let rise over night. In the morning pour into greased pans (have the pans warm), and set in a warm place to rise. Bake 1/2 hour.

Creamed Potatoes.—Two cups cold boiled potatoes, 1 1/2 cups white sauce made of milk thickened a little with flour and seasoned with butter, pepper, salt. Slice the potatoes and heat in the sauce.

Red Salad.—Two cups cold boiled beets, 2 cups cold boiled potatoes, 2 cups raw red cabbage, 1 teaspoon salt, 6 tablespoons oil, or may use butter instead. Chop beets and potatoes, and pour over them the red vinegar in which the beets have been pickled. Add the

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are the big crop seeds. They possess the power of giving wonderful results, due to long pedigree, careful selection, purity of strain and thorough testing. Carter's Tested Seeds are used in the Royal Gardens of England, and by gardeners and florists in every civilized land. They produce as good results in Canada as anywhere else in the world. That

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cabbage shredded very fine, the salt, and melted butter. Finally, mix with good salad dressing and a little onion juice.

Bubble and Squeak.—Cut cold corned beef or roast beef into small strips, about 4 cupfuls, and mix over the fire with a tablespoonful of melted butter. Chop 2 cups cold boiled cabbage and 2 tablespoons butter in a pan. Add pepper and salt, and stir over the fire until it begins to brown. Arrange it as a border on a hot platter, and into the middle put the hot meat.

Good Hash.—Chop 1 cup meat and mix with 2 cups chopped potatoes. Into a spider put 2 tablespoons butter and half a cup of stock or gravy. Let it boil up, then add the meat and potato. Season and heat, stirring occasionally with a fork.

Some More Midwinter Cookery.

Suet is one of the best heat-producers, and should be used in winter, but not in summer.

Suet Plum Pudding.—Three cups grated bread crumbs, 1/2 lb. suet chopped fine. Add to the suet 2 cups of small, seedless raisins, 1 cup currants, 1/2 cup thinly sliced citron, grated rind of an orange or lemon, and 1 cup sugar. Mix well, then add the crumbs, 1/2 teaspoon cinnamon, same of cloves, 1/2 teaspoon mace or nutmeg. Mix well, add well-beaten yolks of 4 eggs mixed with 1 cup milk, and lastly the stiffly-beaten whites of the eggs. Steam six hours in a well-greased two-quart mould, and serve with hard or liquid sauce. For a smaller pudding, use half the quantities, and steam a shorter time.

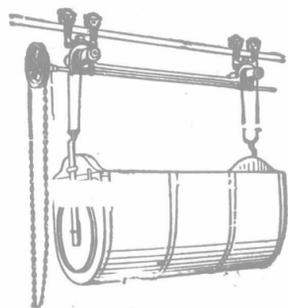
Suet Fruit Pudding.—Chop 1 cup beef suet fine. Add 1 cup New Orleans molasses, 1 cup sour milk, 3 cups sifted flour in which have been mixed 1 teaspoon of salt and 1 even teaspoon soda. Last of all add 1/2 cup seedless raisins, 1/2 cup currants, or any other dried fruit. Steam 3 hours. This pudding will keep well.

Cream Pudding Sauce.—Mix 1 tablespoon flour in 1 cup sugar. Rub in butter size of a small egg. Add 1/2 grated nutmeg, 1 tablespoon vinegar or lemon juice, and 1 1/2 cups boiling water. Boil five minutes.

Hamburg Steak.—Use any of the tougher portions or scraps of beef. Put through the meat-grinder. Season with pepper, salt, and onion juice. Mix well, moistening the hands with cold water to prevent the meat from sticking to them. Form the meat into flat cakes, fry until browned on both sides, and serve on a hot platter.

Onion Soup.—Put 1 tablespoon butter in the frying-pan. When hot, add 1 onion finely chopped, and fry until brown. Add 1 quart soup stock made

THE LEADERS

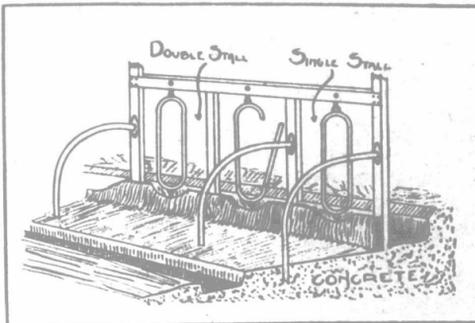


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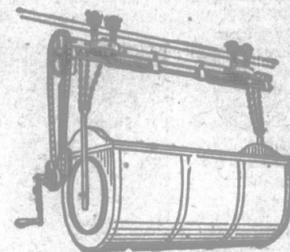
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Heavy Steel Frame, Triple Purchase Hoist, Extension Handle, Automatic Friction Clutch Brake, Heavy Galvanized Iron Box, Four-track Wheels.

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Our Litter Carriers and Stanchions have been awarded Medals and Diplomas at the Canadian National Exhibition, Toronto, annually since 1905.

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Can we tell you the Reason Why?

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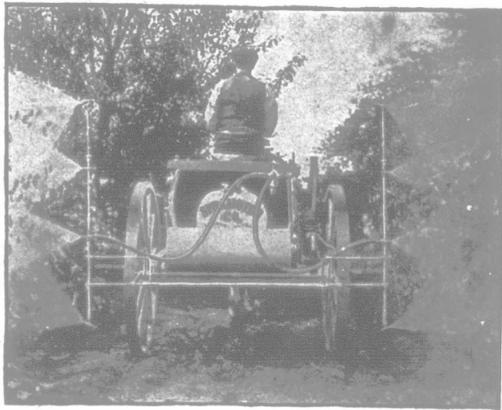
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The h.-p. Spramotor shown here is equally efficient on row crop or orchard work. Twelve nozzles that cannot clog—sprays with 125 lbs. pressure—gets after germs, parasites, canker worms, makes the blight impossible, giving crops greatest possible chance for maximum development.



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Note.—There's a Spramotor built for your exact requirements. Prices range from \$6 to \$350. You owe it to yourself to find out all there is to know about it. We forward you the facts with our treatise on "Crop Diseases" without placing you under any obligation to buy.

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from odds and ends of cold meat, and cook 15 minutes. Strain, return to fire, thicken with 1 tablespoon flour wet with a little cold water, and cook. Season. Cut 2 slices stale bread into dice (the bread should be buttered), brown in the oven, and put into the soup.

Potato Cones.—Boil 6 large potatoes. Mash, and season with salt, pepper, and onion juice, then beat in 1 tablespoon butter and 2 of milk. Shape the potato into cones, brush the outside of each with a little melted butter, and brown in the oven. These are nice for tea.

Fish Rissoles.—Take a cupful of raw or cooked fish, shredded, and cook with 2 tablespoons butter, covering the stew-pan. Mix with mashed potatoes or bread crumbs soaked in milk, a little chopped onion, and an egg or two. Season, and bake in small buttered cups or patty pans. Serve with sauce.

Buckwheat Cakes.—Two cups buckwheat flour, 1 cup Graham flour, 1/2 teaspoon salt, 1 large teaspoon baking powder, all sifted well together. Mix with milk into a thin batter, bake on a hot griddle, and serve at once with butter and syrup.

A Young Woman Farmer.

"I would rather plow than go to the theater. I would rather plant corn than attend a pink tea. I much prefer currying my horses to arraying myself in an evening gown. What's a butterfly social life in damp and foggy England compared to real life in bright sunshine and bracing cold?"

These are the views of no less a person than Miss Jack May, a slender and most charming young lady, who owns and operates a farm in the "wilds" of Canada. She is a daughter of Admiral May, of the British navy, and has seen life in the highest English social circles from the inside. When the Boer war broke out, she went to the front as a nurse, and there she awoke to the fact that there was something more in life than card parties and pink teas and theaters.

Upon her return home she at once entered the Swanley Agricultural College at Kent, and at the conclusion of her course she amazed her friends by becoming manager of a dairy farm. After a time she became manager of another farm in Kent, devoted to general purposes of agriculture, from which place she came to the Canadian West. She bought a ranch of 320 acres in Northern Alberta, near a railroad, and now all English society is watching her venture with interest. Not a man is employed on Miss May's farm. Her only companion and helper is a Canadian girl of eighteen.

"Go back to society again? Not for worlds," she declared, emphatically.

Although this little Englishwoman has sacrificed conventional feminine garb, and has given up social life completely, she has lost none of her charm that made her a favorite in select circles in the old land. Her everyday costume consists of stout leather boots and leather puttees, riding breeches of heavy blue serge, a man's shirt, and a short khaki coat. When she desires to really "dress up," she wears a soft collar and tie, and a peasant's smock of navy-blue denim, which comes to her knees, and is loosely belted around the waist. She is delightfully picturesque, and her happy, care-free laugh is a sure cure for the blues.

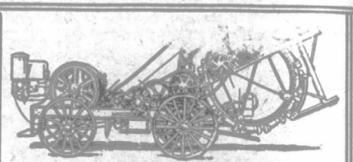
"I love the freedom of the life, and the bigness of things out here on the prairies," she said. "In England, one is bound by conventions as one's fields are girt with hedges. Here I can do as I choose. I would not go back to stay under any considerations."—The News.

MARMALADE.

Dear Junia,—I am asking you if you would please favor me by giving a few hints in your paper on making marmalade?

Lennox Co., Ont.

Marmalade may be made of any fruit that will boil into pulp, but at this time of year the interest in regard to it is chiefly connected with oranges, for the latter part of February, and all of the month of March, are the seasons par excellence for making orange marmalade.



**Your Own Business
 Your Own Boss
 Good Profits**

If those are your ambitions you can realize them right now. You can get into a business that will pay you from the start, and pay you well. How? By doing contract ditching with a

BUCKEYE TRACTION DITCHER

A part of your savings invested in this machine will set you up in a business paying \$15 to \$18 a day. You can be busy 9 to 10 months in the year.

Your field is unlimited—every farmer needs ditches. Clean-cut, perfect-grade Buckeye-made ditches are in demand everywhere.

The Buckeye will cut 100 to 150 rods a day, depending upon the soil.

This machine is made in many sizes. Let us tell you what you can do and how much you can make with the size which is suited to your needs.

Simply write for Catalogue T.

THE BUCKEYE TRACTION DITCHER CO.
 Findlay, Ohio.

POULTRY AND EGGS

Condensed advertisements will be inserted under this heading at three cents per word each insertion. Each initial counts for one word and figures for two words. Names and addresses are counted. Cash must always accompany the order for any advertisement under this heading. Parties having good pure-bred poultry and eggs for sale will find plenty of customers by using our advertising columns. No advertisement inserted for less than 50 cents.

BRONZE turkeys from prize stock. R. G. Rose, Glanworth, Ont.

BRED-TO-LAY S. C. White Leghorn (Cyphers stock) eggs, \$1 per 15; \$5 per 100. Indian Runner duck eggs, \$2 per 13. C. S. Wilson, Tambling's Corners, London, Ont.

B. R. COCKERELS—Good sized, vigorous birds, bred from aying stock; also Pekin ducks. Garland Bros., Pinkerton, Ont.

BARRED Rocks and White Wyandottes, single birds, pairs, trios or breeding pens; carefully mated. Prices low; satisfaction guaranteed. Write for particulars. John Pringle, London, Ont.

CANADIAN Ringlet Barred Plymouth Rocks—Winners International Laying Contest. Pedigreed cockerels, pullets, strong baby chicks. Large hatching eggs. Custom hatching. Alf. B. Wilson, St. Catharines, Ont.

EXTRA Choice S.-C. Brown Leghorn cockerels (Becker strain), \$2 each. David A. Ashworth, Maple Grove, Ont.

FOR Quick sale.—Bronze turkeys six dollars a pair, toms three fifty each. Emerson Tufts, Welland, Ont.

GUILD'S bred-to-lay strains. New catalogue and matings. Send for one. L. R. Guild, Rockwood, Ont.

M. B. Turkeys for sale, toms only. G. E. Nixon, Arva, Ont.

WE again lead with the best egg-producing strain of Barred Rocks. A grand lot of cockerels for sale. Central Ontario Poultry Yards, Colborne, Ont.

WHITE Rocks, Guelph winners. Booklet free. John Pettit, Fruitland, Ont.

YEARLING Embden gander and Light Brahma cockerels. Alton Stevens, Lambeth.

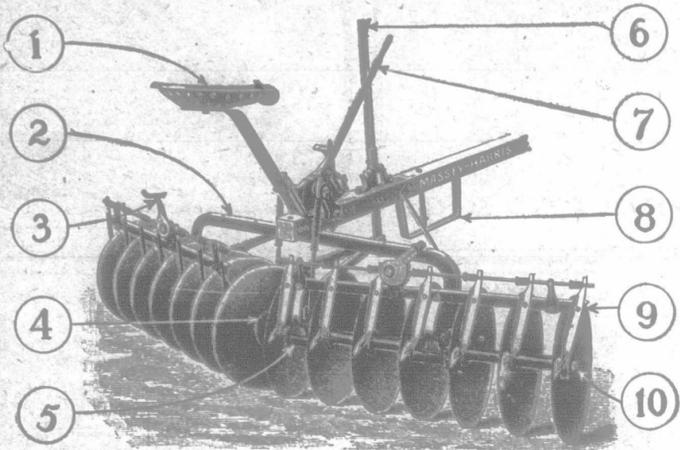
HEADACHE

INSTANTLY RELIEVED BY THE OLD
DR. MARSHALL'S
CATARRH SNUFF
 25¢ AT ALL DRUG STORES OR SENT PRE-PAID BY C. H. KEITH, 112 CLEVELAND OHIO

SHOEMAKER'S BOOK ON POULTRY

and Almanac for 1918 has 224 pages with many colored plates of fowls true to life. It tells all about chickens, their prices, their care, diseases and remedies. All about incubators, their prices and their operation. All about poultry houses and how to build them. It's an encyclopedia of chickendom. You need it. Only 15c. C. C. SHOEMAKER, Box 920 Freeport, Ill.

Let us point out some of the Special Features of the Massey-Harris Nos. 8 and 9 Disc Harrows.



1. Comfortable Spring Seat.
2. Heavy, Angle Steel Arch, securely braced.
3. Foot Lever, enables the operator to apply the Scrapers with any desired pressure or move them clear of the Discs.
4. Large Convex Washers take the end thrust of the Gangs.
5. Bearings have oil-soaked, hard maple bushings.
6. Angle of cut is regulated by this Lever.
7. Spring pressure is applied to inner ends of the Gangs by this powerful Lever.
8. The Low Hitch takes weight from the horses' Necks.
9. Steel Scrapers—each made flexible by means of a coil spring—keep the Discs clean in any soil.
10. Durable Discs with keen cutting edges, are mounted on a heavy square steel bar and securely held by means of a Lock Nut.

MASSEY-HARRIS CO., Limited.

Head Offices,—TORONTO, CANADA.

Branches at MONTREAL, MONCTON, WINNIPEG, REGINA,
SASKATOON, YORKTON, CALGARY, EDMONTON.

—AGENCIES EVERYWHERE—

WHAT you want WHEN you want it



No farmer wants to buy a flash in the pan, the kind of fertilizer that starts and stops, or the kind that begins to work next year. What he wants for his crop is a supply of plant food that once applied in the right amount and form will feed the crop from seed to harvest. It is not a question of being available at the start, or available at the finish, but being available all the way through.

The A. A. C. Fertilizers are made that way, timed to be available at each stage of the growing season.

We have a number of factories, all located at convenient points, and wherever you live, we can reach you with the **right fertilizers, the right service, and the right price.** Write today for copy of "Plant Food," a practical hand book on fertility. No advertising in it; sent without cost, while this edition lasts.

Agents wanted in unoccupied territory. Liberal terms and goods that sell. It pays to sell our fertilizers as well as use them. Ask for agency proposition.

The American Agricultural Chemical Co.

Makers of brands with fifty years of quality and results behind them.

71 Lyman Street, Buffalo, N. Y.
P. O. Drawer 814-E, Detroit, Mich.

know anything about farming. He tried to explain to me that it was economy, and a wise investment, to have labor-saving devices and machinery for the barn, but a luxury and extravagance to have them in the house. That house, in order to have been nearly as well equipped as the barn, should have had a good, dry cellar, with a laundry to wash and dry the clothes in the winter. As the family was large, it should have been half as large again, with good, warm walls, and heated with a furnace throughout. It should have had good chimneys, and a bath-tub, and a sink in kitchen and laundry, water piped to the house, and power to turn the churn and washing-machine.

I suppose it would be impossible to expect a vacuum-cleaner or electric light in the house of a farmer (unless it was a retired city man). This farmer was well able to pay for these things, only he did not think they were necessary, as he did not need them.

BUTTERCUP.

Perth Co., Ont.

A "FAIR PLAY" LETTER.

Dear Friends,—I have read with much interest this discussion, but recently I picked up my "Advocate" and came across Bernice Broomstick's letter. Dear friends, it rather "riled" me, as the saying goes. She says man was never intended for housework. Probably not. She says there is danger of making a sissy of him. I do not agree with her there at all. She says she has known men, always ready to help, and they were almost worthless. I have known men, and one in particular, that was always ready to help, and could do so to perfection in almost any part of housework. He could cook a splendid meal, take care of sick children or adults, and

\$15.95
AND UPWARD
SENT ON TRIAL
FULLY
GUARANTEED.

AMERICAN
SEPARATOR

Thousands In Use giving splendid satisfaction justifies your investigating our wonderful offer to furnish a brand new, well made, easy running, easily cleaned, perfect skimming separator for only \$15.95. Skims one quart of milk a minute, warm or cold. Makes thick or thin cream. Different from this picture, which illustrates our low priced large capacity machines. The bowl is a sanitary marvel and embodies all our latest improvements.

Our Twenty-Year Guarantee Protects You

Our wonderfully low prices and high quality on all sizes and generous terms of trial will astonish you. Whether your dairy is large or small, do not fail to get our great offer. Our richly illustrated catalog, sent free of charge on request, is the most complete, elaborate and expensive book on Cream Separators issued by any concern in the world.

Shipments made promptly from
Winnipeg, Man., St. John, N. B., and Toronto, Ont.

Write today for our catalog and see for yourself what a big money saving proposition we will make you. Address,

AMERICAN SEPARATOR CO., BAINBRIDGE, N. Y.

was a splendid farmer, and to my personal knowledge, was loved by all who knew him. I do not consider any man a sissy because he would help his wife a little over the rough places. She says again, if a woman manages her housework right, she would have no need of her husband's help. Yes, but we



were not all born with that great gift of love and order.

Then she says women were never intended to do chores around the barn, that if a man has the same affection he had before marriage, he would not ask her to do so. I do not know of a man in this part who asks his wife to do so,

but I believe it would be much better for the wife if she would, if she had the time. Every farmer's wife would be much better to know how to do such work, if, in a case of necessity, she was called on to do so. I have had entire charge of my farm for five years, and know what I am talking about. I had no idea how to do such work till my dear husband was taken from me, and it was the hardest winter I ever knew to do all the chores, I was so inexperienced to out-door work, and had three small children in the house to look after, but I am thankful I was given the strength to do my work.

Since then I have done nearly all kinds of out-door work, and feel all the better for it. I have gained much experience in business, which every farmer's wife ought to know, such as the weight of hogs, or what a cow is worth. A woman can still be just as much a lady when doing such work as if she were doing embroidery, and she would have much better health, and more roses in her cheek, by being out in God's pure air.

Sometimes I think women are far worse grumblers than men. When asked a little favor, dear sisters, stop grumbling. There may be a time when you would wish you had not. Life is too short to worry. I thank Providence every day that I was given a bright disposition. Never look down, look up! If the good man asks you to pick potatoes, do so; it will only make your back ache just a while. Be thankful you have him to help. I have planted, hoed, sometimes cultivated and picked them, for five years, and I have perfect health, and good potatoes. Now, dear friends, hear with one another while you are together.

Essex Co., Ont.

FAIR PLAY.

Reduce Your "Feed" Bills by using

Caldwell's Molasses Meal

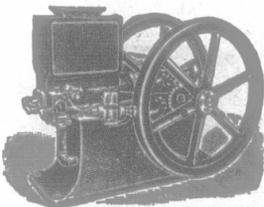
The quantity an animal eats counts for very little—it's the amount it digests which tells in class and value. Caldwell's Molasses Meal lowers "Feed" Bills. It takes the place of an equal quantity of cereal—makes other "Feed" more palatable and digestible. Molasses Meal is 84% pure Cane Molasses—16% an edible moss selected because of its known digestible action. You might as well save money and increase the value of your stock by using Caldwell's Molasses Meal. If your feedman cannot supply you—write to us—write anyhow!



THE CALDWELL FEED CO., Limited, DUNDAS, ONTARIO

Write Quickly "MONARCHS" Make Light Work

Cut out the hard work with a "MONARCH," best-made of all farm engines. Own one this winter. You can move it around easily. It will saw wood, grind chop, pulp roots, pump water—do scores of back-breaking chores. Write quickly for easy terms and full particulars. Made in 1 1/2 to 35 horse-power. By acting now you save winter work wonderfully.



Send a postal for our two-color circular and price list, giving interesting details.

CANADIAN ENGINES, LIMITED, DUNNVILLE, ONT.

Frost & Wood Co., Limited, Smith's Falls, Ont., selling agents from Peterboro East to Maritime Provinces.

News of the Week.

CANADIAN.

The Western Fair, London, Ont., is to receive a Provincial grant.

Manitoulin Island is now "dry," having carried the Canada Temperance Act.

The Duchess of Connaught will return to England in the spring for medical advice, and may not return to Canada.

Hon. Jas. Young, former Provincial Treasurer of Ontario, died at Galt, on January 29th.

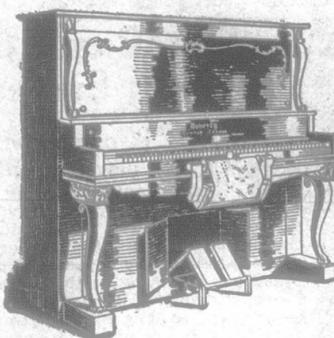
A men's association for the promotion of woman's suffrage is being organized in Toronto.

Col. the Hon. A. J. Matheson, K. C., Provincial Secretary, died at Perth, Ont., Jan. 26th.

Captain Roald Amundsen, the Norwegian explorer who discovered the South Pole, lectured in Toronto last week.

An extensive scheme for the beautification of Ottawa is under consideration.

Dr. Beattie Nesbitt, former President of the Farmer's Bank, died just an hour and a half after the charges against him had been quashed as not being cited in the criminal code.



We can make any piano a perfect

88-note Player Piano

Upright Players \$225

Grand Players \$300

Write for illustrated booklet.

W. DOHERTY PIANO & ORGAN CO., LIMITED
Clinton, Ontario

PLEASE MENTION THE ADVOCATE.

Telephone Attachments

TELEPHONE attachments are being peddled in a miscellaneous manner throughout the country and are purchased by unsuspecting or unthinking users and attached to their instruments. Generally the so-called "helps," disinfectants, etc., are a positive hindrance to telephone service, not being so designed as to secure the maximum of efficiency in hearing or speaking.

Many of them get the lines and instruments into trouble whereupon the Company, to protect its service, is obliged to remove them. The instruments should be kept clean by wiping them.

Telephone instruments, necessarily very sensitive and intricate, have been designed to produce the best results as they are. In the interest of good service, subscribers are requested to make no attachments of any kind to their instruments, and attention is especially called to the clause in the contract for service, wherein it is stipulated that "no electrical or mechanical attachments are to be made to the telephones or lines, which are the property of the Company, without its consent."

The Bell Telephone Co. of Canada.

MAKE MONEY SAWING LUMBER

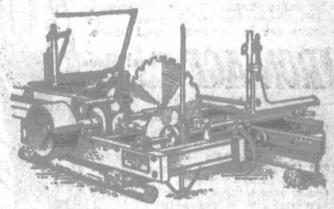


with an American Saw Mill

You simply cannot afford to let those trees stand on your wood lot. Think of the crops that land would yield, if cleared. And think of the money in the trees. Every 16-foot log averaging 14 inches makes 100 feet of lumber. Ten of them make 1000 feet, worth up to \$80 per thousand. Now, size up your trees and count the dollars in them.

And look at your neighbors' trees—money in them for you, too, sawing them into lumber on shares or by the 1000. There's always a market for lumber, and prices are higher now than ever before. Hundreds of farmers are doing a paying lumbering business in the fall and winter. You can do the same, for there are wood lots around you if you haven't one yourself.

All you need to buy is an "American" Portable Saw Mill, for you have the team and wagon and probably the engine. A 6 H.P. steam or 8 H.P. gas engine with an "American" Mill will



saw up to 2500 feet of lumber per day; 10 H.P. steam or 12 H.P. gas will saw up to 5000 feet. You can run the outfit yourself, with the boys or your man to help you.

Our wide knowledge will help you start in farm lumbering. It is all in our book, "Making Money Off the Wood Lot," and in our New Catalog just off the press. We want you to have them both. Tear out the coupon now, while interested. Fill in and mail it to our nearest office.

American Saw Mill Machinery Company

Makers of Standard Saw Mills of any size or capacity
113 Hope St., Hackettstown, New Jersey
1564 Terminal Building, New York
Chicago Savannah New Orleans

MAIL TODAY
FILL IN
AMERICAN SAW MILL MACHINERY CO. 33
Hackettstown, N. J.
Without expense or obligation on my part
Please send me your book "Making Money Off the Wood Lot" and new catalog.
NAME _____
TOWN _____
COUNTY _____
STATE _____ R. F. D. No. _____

The Basis of Oliver Success

THERE is one point about Oliver plows which gives them peculiar value in the plowing of Eastern Canadian fields. Each type of Oliver plow is manufactured for a certain section of the country, and can be depended upon to do good work under the conditions obtaining in that section. Before offering a type of plow for sale in any locality, Oliver plow manufacturers always send their expert plow designers to the place where the plows are to be used. These men study the conditions of climate and soil, learn the likes and dislikes of the people who are to use the plows, and when they return to the factory, they are able to superintend the manufacture of a plow which meets all the required conditions in the place where it is to be used.

Oliver Plows for Eastern Canada

The group of Oliver plows built for Eastern Canada includes walking plows of the famous Oliver No. 40 series, sulky plows, gang plows, and walking gang plows. Each of these is built for a certain purpose, and is the best plow obtainable for that particular purpose.

Back of the whole group is the fifty-seven



years of successful plow experience of the Oliver Plow Works. This experience eliminates everything in the way of chance. You do not have to experiment with Oliver plows. Go to the I H C local agent and tell him what kind of plowing you have to do, and he will show you a plow built to do that kind of work and do it in the best possible manner. You can get catalogues and full information of the entire Oliver line from him, or, if you prefer, write the nearest branch house.

Eastern Canadian Branches

International Harvester Company of America

(Incorporated)

At Hamilton, Ont.; London, Ont.; Montreal, P. Q.;
Ottawa, Ont.; St. John, N. B.; Quebec, P. Q.

These machines are built at Hamilton, Ont.



NEW COAL OIL LIGHT

Beats Electric or Gasoline

Powerful white incandescent mantle light. Replacing common oil lights everywhere. Burns 70 hours on one gallon of coal oil (kerosene.) No odor or noise, simple, clean. Tests by Prof. McKergow, McGill University, Montreal, on leading oil burning lights show this gives over twice as much light as the Rayo and other round wick lamps and uses less than half as much oil. Thousands of satisfied users endorse it as the best light in the world. To introduce this modern white light quickly, we will let you

TRY ONE TEN DAYS At Our Risk

We want one person in each locality to whom we can refer customers. Write quick for agents wholesale prices and special introductory offer, which entitles you to One FREE.

MANTLE LAMP CO.

723 Aladdin Building,

Montreal and Winnipeg

AGENTS WANTED

Experience unnecessary. Make Money evenings or spare time. Write quick.

A FARMER'S GARDEN

IS without real serious meaning to many thousand farmers because they think it is too hard work or it is not convenient to work a horse. So many farmers fail to understand what truly wonderful possibilities there are in modern hand tools.

IRON AGE Wheel Hoes and Drills

do all of the sowing, hoeing, cultivating, weeding, furrowing, ridging, etc., in any garden with better results, far less work and some real pleasure for the operator, 35 or more combinations at \$3.00 to \$15.00. Ask your dealer about them and write us for new booklet. "Gardening with Modern Tools" also copy of our paper "Iron Age Farm and Garden News"—both are free.

The Esteman-Wilkinson Co., Limited
412 Symington Ave., Toronto, Ontario.

LEARN TO RUN AND REPAIR AUTOS

TWO COMPLETE COURSES FOR THE PRICE OF ONE. Standard Course and 1913 Advanced Course. TWO MODELS, Moving Pictures of Auto Engine—over 900 Pages, and 1713 Charts and Diagrams. Other schools ask more for one out-of-date course. We teach you at home to earn BIG MONEY. Diplomas issued and Graduates assisted to positions. Great demand for Auto Experts. Our 35-page book with employment plan & sample lessons FREE. Write for it now. PRACTICAL AUTO SCHOOL, 287 E. 7th St., New York, N. Y.

CHURCH BELLS CHIMES AND PEALS

MEMORIAL BELLS A SPECIALTY

FULLY WARRANTED

McSHANE BELL FOUNDRY CO.,

BALTIMORE, Md., U. S. A.

Established 1866

For Sale—Thoroughbred Hereford bull

from L. O. Clifford's stock, 2 years;

won 2nd prize London Fair, 1911. Apply to

H. H. STEVENSON
Manager The Molsons Bank, St. Mary's, Ont.

Will You Have This Handy Electric Light on Your Farm?



POCKET
TYPE
\$1.50
PREPAID

When you want to find out quick what's causing the row in the stable, don't waste time over the lantern. Just grab up the little "Nine Lives" Electric Flashlight and run.

When you meet another rig on a pitch dark night, the "Nine Lives" will show you what you are doing. Same thing when a thing goes wrong with the harness, or the automobile. Just pull the

"Nine Lives" Electric Flashlight

out of your pocket, press the button and you have a bright light just where you want it. There are hundreds of times when it will be more than come in handy.

The wonderful new Tungsten Incandescent Lamp, supplied with current by the three Dry Batteries, gives a surprisingly bright light, which is concentrated by the lens into a powerful beam. Batteries hold their strength four times as long as any other dry cells, and can be renewed for a trifle.

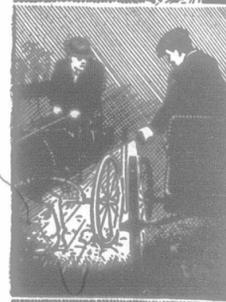
Don't be without this modern convenience. Send \$1.50 or \$2.00 according to style you prefer and we will send it carefully packed and fully prepaid.

Mail your order to-day to

CANADIAN CARBON CO., LIMITED,

92 West King St., Toronto.

TUBULAR TYPE
\$2.00 PREPAID



BEST RESULTS ARE OBTAINED FROM ADS. IN "ADVOCATE."

BRITISH AND FOREIGN.

Bielovucchi, the Peruvian aviator, flew across the Swiss Alps on January 25th.

.....

Col. Sir William Henry Manning has been appointed Governor of Jamaica.

.....

David Hogg, a Scotch Presbyterian, living in Londonderry, and a supporter of Home Rule, has been elected member of Parliament for Derry.

.....

It has been estimated that 20,000 Moslems and 15,000 Christians, non-combatants, have been massacred since the outbreak of the war in the Balkans.

.....

The Norwegian party sent to the relief of the party of German scientists stranded on Spitzbergen Island, has been unable to reach them, and cannot until ice forms across the open water. The scientists are in extreme danger.

.....

Dr. George Turner, who devoted many years of his life to the care of lepers in South Africa, himself contracting the disease, has been knighted by the king. He is at present in England studying the disease, and seeking a remedy for it.

.....

The "British House of Lords rejected the Home Rule bill by a large majority. This, however, if the present Government remains in power, will not, under the Parliament Act, prevent the bill from becoming law in May.

.....

Suffragettes in England are enraged that the Government decided to drop the franchise bill. Two thousand policemen were kept upon duty around the Parliament Buildings on succeeding days to guard against possible attacks. At present they are destroying the golf greens wherever opportunity offers.

.....

It has been stated that the Government of Jamaica, in view of the importance which the island will assume on the opening of the Panama Canal, is negotiating with a Canadian syndicate for the provision of better facilities for coaling and docking at the capital and other points.

.....

U. S. Senator Root, in a speech delivered at Washington, recently, hotly attacked the Panama Canal Act, calling for the removal of the obnoxious clause which has brought on the dispute with Great Britain. Secretary Knox has signified to Great Britain the willingness of the United States to submit the question to a Commission.

.....

Peace negotiations were finally broken on January 29th, and, on the next day, hostilities were resumed along the Tchatalja lines. Izzet Pasha has been appointed Commander-in-Chief of the Turkish army, in succession to Nazim Pasha, who was assassinated at Constantinople. Orders have been issued from the Bulgarian headquarters that, henceforth, no war correspondents whatever will be permitted to accompany the troops.

.....

The United States is to have an "Army League," in short, a standing army, which, if the United States follow the example of European countries, will be continually increased, the people bearing the burden of its maintenance. Many of the American magazines, which may be taken as an index of the sentiment of a large proportion of the people, are bitterly opposed to the measure. We quote from The Independent (N. Y.), one of the most moderate and most sincere among these publications: "There is every political, economic and moral reason for not increasing the size of our army. In the first place, we have not an enemy on the face of the earth, nor are we likely to have one if we mind our own business and live up to our treaty obligations. . . . It is disheartening to see this military madness sedulously being cultivated in free America, especially when fostered by otherwise good and patriotic citizens. Our peace organizations should keep a watchful eye on this new Army League, as well as on the older Navy League."

Rebecca of Sunnybrook Farm.

By Kate Douglas Wiggin.

[Serial rights secured from Houghton Mifflin Publishing Company, New York.]

XVI.

Seasons of Growth

The days flew by; as summer had melted into autumn so autumn had given place to winter. Life in the brick house had gone on more placidly of late, for Rebecca was honestly trying to be more careful in the performance of her tasks and duties as well as more quiet in her plays, and she was slowly learning the power of the soft answer in turning away wrath.

Miranda had not had, perhaps, quite as many opportunities in which to lose her temper, but it is only just to say that she had not fully availed herself of all that had offered themselves.

There had been one outburst of righteous wrath occasioned by Rebecca's over-hospitable habits, which were later shown in a still more dramatic and unexpected fashion.

On a certain Friday afternoon she asked her aunt Miranda if she might take half her bread and milk upstairs to a friend.

"What friend have you got up there, for pity's sake?" demanded aunt Miranda.

"The Simpson baby, come to stay over Sunday; that is, if you're willing, Mrs. Simpson says she is. Shall I bring her down and show her? She's dressed in an old dress of Emma Jane's and she looks sweet."

"You can bring her down, but you can't show her to me! You can smuggle her out the way you smuggled her in and take her back to her mother. Where on earth do you get your notions, borrowing a baby for Sunday!"

"You're so used to a house without a baby you don't know how dull it is," sighed Rebecca resignedly, as she moved towards the door; "but at the farm there was always a nice fresh one to play with and cuddle. There were too many, but that's not half as bad as none at all. Well, I'll take her back. She'll be dreadfully disappointed and so will Mrs. Simpson. She was planning to go to Milltown."

"She can un-plan then," observed Miss Miranda.

"Perhaps I can go up there and take care of the baby?" suggested Rebecca. "I brought her home so I could do my Saturday work just the same."

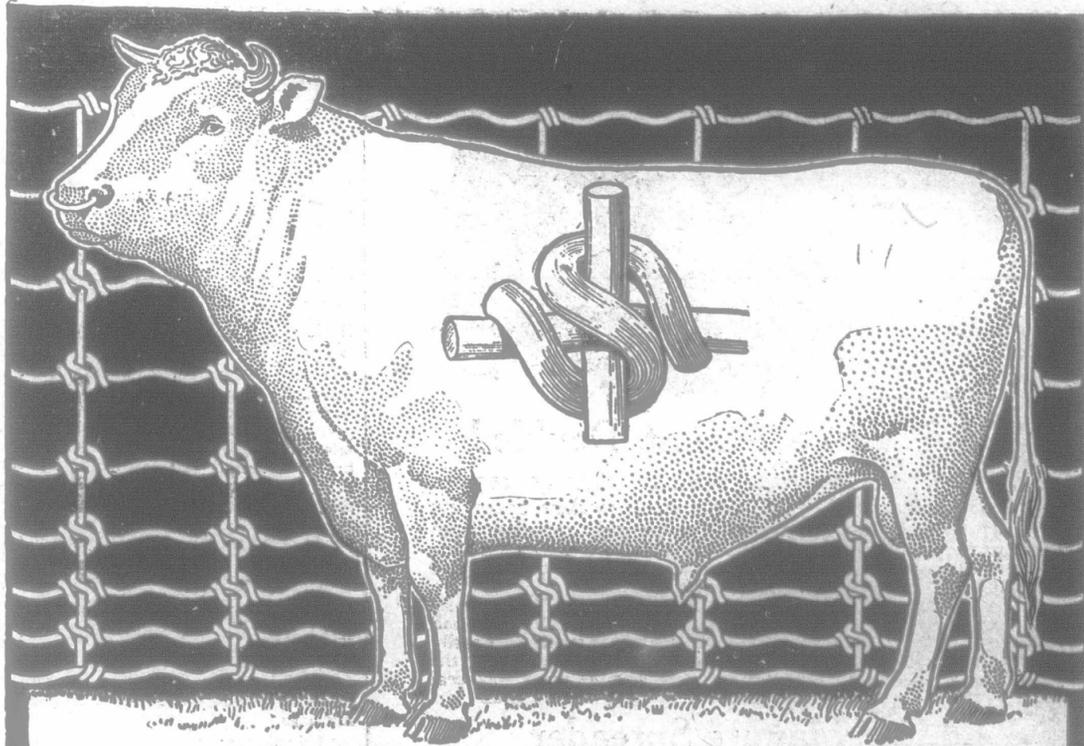
"You've got enough to do right here, without any borrowed babies to make more steps. Now, no answering back, just give the child some supper and carry it home where it belongs."

"You don't want me to go down the front way, hadn't I better just come through this room and let you look at her? She has yellow hair and big blue eyes! Mrs. Simpson says she takes after her father."

Miss Miranda smiled acidly as she said she couldn't take after her father, for he'd take anything there was before she got there!

Aunt Jane was in the linen closet upstairs, sorting out the clean sheets and pillow cases for Saturday, and Rebecca sought comfort from her.

"I brought the Simpson baby home, aunt Jane, thinking it would help us over a dull Sunday, but aunt Miranda won't let her stay. Emma Jane has the promise of her next Sunday and Alice Robinson the next. Mrs. Simpson wanted I should have her first because I've had so much experience in babies. Come in and look at her sitting up in my bed, aunt Jane! Isn't she lovely? She's fat, gurgly kind, not thin and fussy like some babies, and I



Is Anything On Your Farm Stronger Than A Bull ?

YES! If your fences are "IDEAL" Woven Wire, made of large gauge No. 9 HARD STEEL wire, heavily galvanized and with the verticals and horizontals clamped together with the Ideal Lock—that CANNOT SLIP. Bull-strong; hog-tight; horse high—a REAL fence.

NO! If you have wire fences of the ordinary kind—fairly good for a few years, but with no reserve strength to stand hard usage—because poorer wire makes them, and stretching them taut takes the utmost of their little strength to start with.

All Large Gauge Number 9 Hard Steel Galvanized Wire

From top to bottom Ideal Fence is all the same—large gauge No. 9 hard steel wire, heavily galvanized and therefore rust-proof. Note lock and its uniform smooth curve—no sharp turns to weaken the strength of the lock and yet a most positive grip—in FIVE different places. This is the fence that has ample springiness, immense strength, and the ONE LOCK THAT'S GOOD. Drop us a card and get our catalog telling all about the many styles and merits of IDEAL FENCE. Sample lock comes with it. Write us today.

McGREGOR BANWELL FENCE COMPANY, LIMITED, WALKERVILLE, ONTARIO

Your Winter Harvest in Eggs

There's not the slightest reason why every poultry raiser shouldn't have a harvest in eggs right now when eggs are high. Hens, your own hens, have a tendency to grow fat and lazy and the egg organs to become sluggish. This may be due to lack of exercise, the absence of green food and to other causes. But whatever the cause, remember that

Dr. Hess Poultry Pan-a-ce-a

positively tones up the dormant egg organs and takes the hens out of the loafer class and makes them lay eggs for market right when prices are the highest. It keeps hens hungry for their grain, so they remain busy all the time scratching for a living—and it's the busy hen that does the cackling and the more cackling the more eggs.

Dr. Hess Poultry Pan-a-ce-a contains:
Potassium Nitrate. An Eliminant.
Nux Vomica. A Nerve Tonic.
Quassa. A Bitter Stomachic and Appetizer.
Hypophosphite of Soda. An Internal Antiseptic.
Iron (Sulphate). A Blood Builder.
Iron (Red Oxide). A Blood Builder.
Carbonate of Lime. An Antacid and shell forming.
Sodium Chloride. An Appetizer and Cleanser.
Under the supervision of Dr. Hess (M.D., D.V.S.) the above is carefully compounded and blended, with just enough cereal meal to make a perfect mixture.

Note the formula for Pan-a-ce-a in this advertisement; the definitions of ingredients are taken from U. S. Dispensatory and our best writers. With the formula on the label there can be no exaggeration of claims. You can look up the ingredients in any medical dictionary, and besides every Hess & Clark preparation is guaranteed.
Our Proposition: Feed your hens Poultry Pan-a-ce-a right now when eggs are scarce; if you have the least shadow of doubt that it has not made your hens lay more eggs and kept them free from disease at a cost of only a penny a day for 30 hens—take to the dealer the empty package and he is compelled to refund your money. 1 1/2 lbs. 35c; 5 lbs. 85c; 12 lbs. \$1.75; 25-lb. pail \$3.50 (duty paid). If your dealer cannot supply you, we will. Send 2c for Dr. Hess 48-page Poultry Book, free.

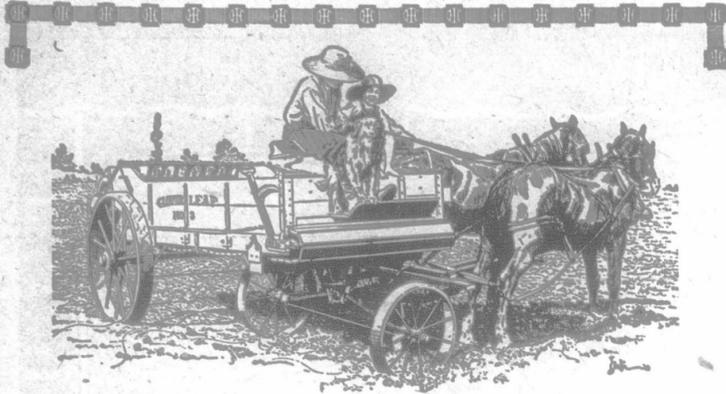


DR. HESS & CLARK
Ashland, Ohio

DR. HESS STOCK TONIC improves digestion, increases the appetite, expels worms. Bulletin No. 22, U. S. Department of Agriculture, says: "Only 60 per cent. of the food taken by stock is digested." You know yourself that you can fatten hogs on the corn that passes through the steers undigested. "The Dr. Hess Idea" is to save a part of this wasted feed by increasing digestion. The formula is on every package and the U. S. Dispensatory, or even a medical dictionary, will tell you whether the ingredients will produce the results claimed. And, besides, it's sold only on a written guarantee. 25-lb. pail \$2.25; 100 lbs. \$7.00 (duty paid). Send 2c for Dr. Hess Stock Book.

FREE. Dr. Hess (M.D., D.V.S.) will at any time prescribe for your ailing animals free of charge if you will send him full details. Mention this paper and send 2-cent stamp. 96-page Veterinary Book also free.

INSTANT LOUSE KILLER KILLS LICE



Land Value Almost Doubled

It is no longer an unusual thing for us to get reports from farmers who have been using manure spreaders properly and consistently for periods ranging from three to five years, to the effect that the land on which the manure spreaders have been used is regularly raising so much more produce that the value of the land is almost doubled.

"The beauty of it is," writes one Ontario farmer, "that the increased fertility seems to be permanent. Dry weather has less bad effect on our crops now than it used to, the soil is much more easily worked, making the day's work easier both for the horses and for the men, it is less trouble to raise better crops, and we are a good deal surer of good returns since our soil was built up by the use of an

I H C Manure Spreader

I H C manure spreaders, Corn King or Cloverleaf, are made in various styles and sizes to meet any and all conditions. There are wide, medium and narrow machines, all of guaranteed capacity; return and endless aprons; in short, a spreader built to meet your conditions and made to spread manure, straw, lime, or ashes as required.

I H C spreaders will spread manure evenly on the level, going up hill or down. The wheel rims are wide and are equipped with Z-shaped lugs, which provide ample tractive power without jarring the machines excessively. The apron moves on large rollers. The beater drive is positive, but the chain wears only one side. The I H C agent will show you the most effective machine for your work. Ask to see an I H C manure spreader. You can get catalogues from him, or, if you prefer, write the nearest branch house.

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International Harvester Company of America
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At Brandon, Calgary, Edmonton, Estevan, Hamilton, Lethbridge, London, Montreal, N. Battleford, Ottawa, Quebec, Regina, Saskatoon, St. John, Winnipeg, Yorkton



MAPLE SYRUP MAKERS!

ENTER THIS CONTEST



CUT OUT THIS COUPON

THE demand for genuine and high-grade goods so enhances the market price of Maple Sugar and Syrup that we have decided to open a competition to educate the consumer who is more familiar with the second- or third-grade article. To attain this result, we offer \$500 in gold for the best-made syrup and sugar.

Syrup and Sugar on Exhibition in Montreal

The object of making a display of this kind is to show the public the products of the very best Maple Syrup and Sugar Makers in Canada, and must undoubtedly result in unlimited benefit to you should you be one of the exhibitors. All syrup must be made on a Grimm "Champion"—will be judged impartially—must be of a light color to stand a chance of winning a prize—will be paid for if you enter the contest, or returned after contest is over if you so desire.

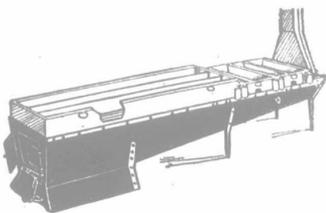
The entries will be exhibited in the magnificent show window of the "Montreal Star." Why not properly equip yourself to be a winner in this contest? State number of trees you tap, and we will give you price on a suitably sized outfit.

For all conditions and particulars, address:

PRIZE CONTEST

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58 Wellington Street
MONTREAL

(Don't forget coupon.)



thought I was going to have her to undress and dress twice each day. Oh dear! I wish I could have a printed book with everything set down in it that I could do, and then I wouldn't get disappointed so often."

"No book could be printed that would fit you, Rebecca," answered aunt Jane, "for nobody could imagine beforehand the things you'd want to do. Are you going to carry that heavy child home in your arms?"

"No, I'm going to drag her in the little soap-wagon. Come, baby! Take your thumb out of your mouth and come to ride with Becky in your go-cart." She stretched out her young strong arms to the crowing baby, sat down in a chair with the child, turned her upside down unceremoniously, took from her waistband and scornfully flung away a crooked pin, walked with her (still in a highly reversed position) to the bureau, selected a large safety pin, and proceeded to attach her brief red flannel petticoat to a sort of shirt that she wore. Whether flat on her stomach, or head down, heels in the air, the Simpson baby knew she was in the hands of an expert, and continued gurgling placidly while aunt Jane regarded the pantomime with a kind of dazed awe.

"Bless my soul, Rebecca," she ejaculated, "it beats all how handy you are with babies!"

"I ought to be; I've brought up three and a half of 'em," Rebecca responded cheerfully, pulling up the infant Simpson's stockings.

"I should think you'd be fonder of dolls than you are," said Jane.

"I do like them, but there's never any change in a doll; it's always the same everlasting old doll, and you have to make believe it's cross or sick, or it loves you, or can't bear you. Babies are more trouble, but nicer."

Miss Jane stretched out a thin hand with a slender, worn band of gold on the finger, and the baby curled her dimpled fingers round it and held it fast.

"You wear a ring on your engagement finger, don't you, aunt Jane? Did you ever think about getting married?"

"Yes, dear, long ago."

"What happened, aunt Jane?"

"He died—just before."

"Oh!" And Rebecca's eyes grew misty.

"He was a soldier and he died of a gunshot wound, in a hospital, down South."

"Oh! aunt Jane!" softly. "Away from you?"

"No, I was with him."

"Was he young?"

"Yes; young and brave and handsome, Rebecca; he was Mr. Carter's brother Tom."

"Oh! I'm so glad you were with him! Wasn't he glad, aunt Jane?"

Jane looked across the half-forgotten years, and the vision of Tom's gladness flashed upon her: his haggard smile, the tears in his tired eyes, his out-stretched arms, his weak voice saying, "Oh, Jenny! Dear Jenny! I've wanted you so, Jenny!" It was too much! She had never breathed a word of it before to a human creature, for there was no one who would have understood. Now, in a shamefaced way, to hide her brimming eyes, she put her head down on the young shoulder beside her saying, "It was hard, Rebecca!"

The Simpson baby had cuddled down sleepily in Rebecca's lap, leaning her head back and sucking her thumb contentedly. Rebecca put her cheek down until it touched her aunt's gray hair and softly patted her, as she said, "I'm sorry, aunt Jane!"

The girl's eyes were soft and tender and the heart within her stretched a little and grew, grew in sweetness and intuition and depth of feeling. It had looked into another heart, felt it beat, and heard it sigh; and that is how all hearts grow.

Episodes like these enlivened the quiet course of every-day existence, made more quiet by the departure of Dick Carter, Living Perkins, and Huldah Meserve for Wareham, and the small attendance at the winter school, from which the younger children of the place stayed away during the cold weather.

Life, however, could never be thoroughly dull or lacking in adventure to a child of Rebecca's temperament. Her nature was full of adaptability, fluidity, receptivity. She made friends everywhere she went, and snatched up acquaintances in every corner.

ONE MONTH'S FREE TRIAL Syracuse "EASY" Washer

Washes clothes better than any other machine made, and with one-third the work. It pumps air and suds through the fibre of the clothes.
Washes anything from carpets to lace curtains. Galvanized rustproof steel tub. Lasts a lifetime. Furnished with or without gas heater on rollers.

Try it 30 days at our risk.

If you are not delighted with it, return it at our expense within 30 days. Write at once for free booklet of laundry recipes and trial order form.



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A WIFE WANTED

to have a beautiful, clear complexion, free from blemishes. She consulted us and we gave her candid advice, upon which she acted. Her husband writes now that his wife is so much prettier that he is also going in for improvement.

A GOOD COMPLEXION

may be yours if you will give us the same confidence. We cure Pimples, Blotches, Eczema, Wrinkles and Discolorations. Our Electrolysis treatment is the only sure one for removing Superfluous Hair, whether on the face, neck, hands or arms. Twenty years' experience. Consultation invited personally or by mail. Booklet "F" and sample Toilet Cream on request.

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CANADIAN PACIFIC

SPECIAL CRUISE AROUND THE WORLD

Empresses of "Russia" and "Asia"
(New C. P. R. Pacific Steamships)

The Empress of Russia will leave Liverpool April 1st, calling at Gibraltar, Villefranche and Port Said, proceeding via Suez, Colombo, Singapore, Hong Kong, Shanghai, Nagasaki, Kobe and Yokohama, arriving Vancouver June 7th, 1913.

Vessel remains 16 days at Hong Kong. Empress of Asia will sail from Liverpool June 18th, particulars of trip will be announced later.

Most direct connection for April 1st sailing is via "Empress of Britain" from St. John, N. B., March 21st.

Rate for Entire Cruise, \$639.10

Exclusive of maintenance between arrival time in England and departure of "Empress of Russia," and stop over at Hong Kong. Particulars from Canadian Pacific agents, or write M. G. MURPHY, D.P.A., C.P.R., Toronto.

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The New Century Washers solves the washing problem. It eliminates slavish, arduous toil and reduces manual labor to the minimum. The city water pressure furnishes the power that is transmitted by the New Century water motor.

There are some exclusive and patented features in the New Century that make it unique. One prevents warping of the tub, another gives great strength and rigidity. See the New Century at your dealers or write to us for full information. 103

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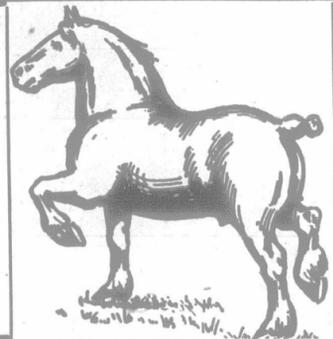
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at 11 a.m.
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CLYDESDALES AND PERCHERONS
Imported and Canadian Bred

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TUESDAY AND WEDNESDAY
February 25th & 26th, 1913

AT

UNION STOCK YARDS, TORONTO, ONT.

Some of the best Imported and Canadian bred Stallions, Mares, Mares-in-foal and Fillies will be sold at this sale; and as it is a Consignment Sale, anyone may enter Registered Stock. Catalogues will be issued about the middle of February.

Write for terms and particulars of this sale

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WATEROUS ENGINE WORKS
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WAGON AND STOCK SCALE, a Money-saver to You, Mr. Farmer

So often you lose money because you are not quite sure of the weight of the article that is changing hands, and by just putting it on the scales your eyes are opened, and you are in a position to judge very accurately as to what this or that particular thing is worth.

Write to-day for our illustrated catalogue, telling you about the Three-wheeled Wagon and Stock Scale. Capacity, 2,000 lbs. All material and workmanship first-class and guaranteed.

Address:
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It was she who ran to the shed door to take the dish to the "meat man" or "fish man;" she who knew the family histories of the itinerant fruit vendors and tin peddlers; she who was asked to take supper or pass the night with children in neighboring villages—children of whose parents her aunts had never so much as heard. As to the nature of these friendships, which seemed so many to the eye of the superficial observer, they were of various kinds, and while the girl pursued them with enthusiasm and ardor, they left her unsatisfied and heart-hungry; they were never intimacies such as are so readily made by shallow natures. She loved Emma Jane, but it was a friendship born of propinquity and circumstance, not of true affinity. It was her neighbor's amiability, constancy, and devotion that she loved, and although she rated these qualities at their true value, she was always searching beyond them for intellectual treasures; searching and never finding, for although Emma Jane had the advantage in years she was still immature. Huldah Meserve had an instinctive love of fun which appealed to Rebecca; she also had a fascinating knowledge of the world, from having visited her married sisters in Milltown and Portland; but on the other hand there was a certain sharpness and lack of sympathy in Huldah which repelled rather than attracted. With Dick Carter she could at least talk intelligently about lessons. He was a very ambitious boy, full of plans for his future, which he discussed quite freely with Rebecca, but when she broached the subject of her future his interest sensibly lessened. Into the world of the ideal Emma Jane, Huldah, and Dick alike never seemed to have peeped, and the consciousness of this was always a fixed gulf between them and Rebecca.

"Uncle Jerry" and "aunt Sarah" Cobb were dear friends of quite another sort, a very satisfying and perhaps a somewhat dangerous one. A visit from Rebecca always sent them into a twitter of delight. Her merry conversation and quaint comments on life in general fairly dazzled the old couple, who hung on her lightest word as if it had been a prophet's utterance; and Rebecca, though she had had no previous experience, owned to herself a perilous pleasure in being dazzling, even to a couple of dear humdrum old people like Mr. and Mrs. Cobb. Aunt Sarah flew to the pantry or cellar whenever Rebecca's slim little shape first appeared on the crest of the hill, and a jelly cake or a frosted tart was sure to be forthcoming. The sight of old uncle Jerry's spare figure in its clean white shirt sleeves, whatever the weather, always made Rebecca's heart warm when she saw him peer longingly from the kitchen window. Before the snow came, many was the time he had come out to sit on a pile of boards at the gate, to see if by any chance she was mounting the hill that led to their house. In the autumn Rebecca was often the old man's companion while he was digging potatoes or shelling beans, and now in the winter, when a younger man was driving the stage, she sometimes stayed with him while he did his evening milking. It is safe to say that he was the only creature in Riverboro who possessed Rebecca's entire confidence; the only being to whom she poured out her whole heart, with its wealth of hopes, and dreams, and vague ambitions. At the brick house she practised scales and exercises, but at the Cobb's cabinet organ she sang like a bird, improvising simple accompaniments that seemed to her ignorant auditors nothing short of marvelous. Here she was happy, here she was loved, here she was drawn out of herself and admired and made much of. But, she thought if there were somebody who not only loved but understood; who spoke her language, comprehended her desires, and responded to her mysterious longing! Perhaps in the big world of Wareham there would be people who thought and dreamed and wondered as she did.

In reality Jane did not understand her niece very much better than Miranda; the difference between the sisters was, that while Jane was puzzled, she was also attracted, and when she was quite in the dark for an explanation of some quaint or unusual action she was sympathetic as to its possible motive and believed the best. A greater change had come over Jane than over any other person in the brick house, but it had been wrought so secretly, and concealed so religiously, that it scarcely appeared to the ordinary observer. Life had now a motive utterly lacking before.

THIS WASHER MUST PAY FOR ITSELF.

A MAN tried to sell me a horse once. He said it was a fine horse and had nothing the matter with it. I wanted a fine horse, but I didn't know anything about horses much. And I didn't know the man very well either.

So I told him I wanted to try the horse for a month. He said "All right," but pay me first, and I'll give you back your money if the horse isn't all right.

Well, I didn't like that. I was afraid the horse wasn't "all right" and that I might have to whistle for my money if I once parted with it. So I didn't buy the horse, although I wanted it badly. Now, this set me thinking.

You see I make Washing Machines—the "1900 Gravity" Washer.

And I said to myself, lots of people may think about my Washing Machine as I thought about the horse, and about the man who owned it. But I'd never know, because they wouldn't write and tell me. You see I sell my Washing Machines by mail. I have sold over half a million that way. So, thought I, it is only fair enough to let people try my Washing Machines for a month, before they pay for them, just as I wanted to try the horse.

Now, I know what our "1900 Gravity" Washer will do. I know it will wash the clothes, without wearing or tearing them, in less than half the time they can be washed by hand or by any other machine.

I know it will wash a tub full of very dirty clothes in Six Minutes. I know no other machine ever invented can do that, without wearing the clothes. Our "1900 Gravity" Washer does the work so easy that a child can run it almost as well as a strong woman, and it don't wear the clothes, fray the edges, nor break buttons, the way all other machines do.

It just drives soapy water clear through the fibres of the clothes like a force pump might.

So, said I to myself, I will do with my "1900 Gravity" Washer what I wanted the man to do with the horse. Only I won't wait for people to ask me. I'll offer first, and I'll make good the offer every time.

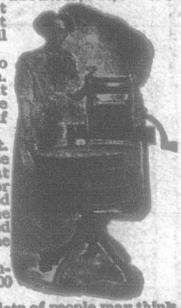
Let me send you a "1900 Gravity" Washer on a month's free trial. I'll pay the freight out of my own pocket, and if you don't want the machine after you've used it a month, I'll take it back and pay the freight, too. Surely that is fair enough, isn't it?

Doesn't it prove that the "1900 Gravity" Washer must be all that I say it is?

And you can pay me out of what it saves for you. It will save its whole cost in a few months in wear and tear on the clothes alone. And then it will save 50 to 75 cents a week over that in washwoman's wages. If you keep the machine after the month's trial, I'll let you pay for it out of what it saves you. If it saves you 50 cents a week, send me 50 cents a week 'till paid for. I'll take that cheerfully, and I'll wait for my money until the machine itself earns the balance.

Drop me a line to-day, and let me send you a book about the "1900 Gravity" Washer, that washes clothes in six minutes.

Address me personally:
A. U. MORRIS, Manager 1900 Washer Co., 367 Yonge St., Toronto, Can.



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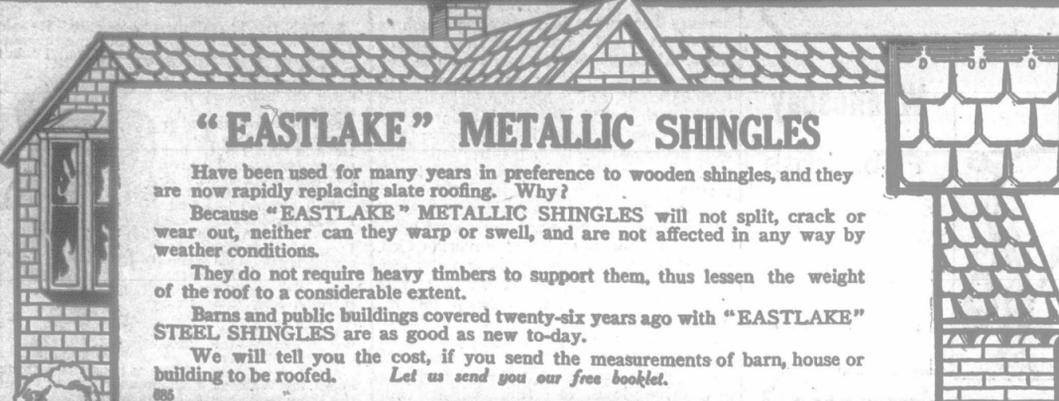
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Barns and public buildings covered twenty-six years ago with "EASTLAKE" STEEL SHINGLES are as good as new to-day.

We will tell you the cost, if you send the measurements of barn, house or building to be roofed. *Let us send you our free booklet.*

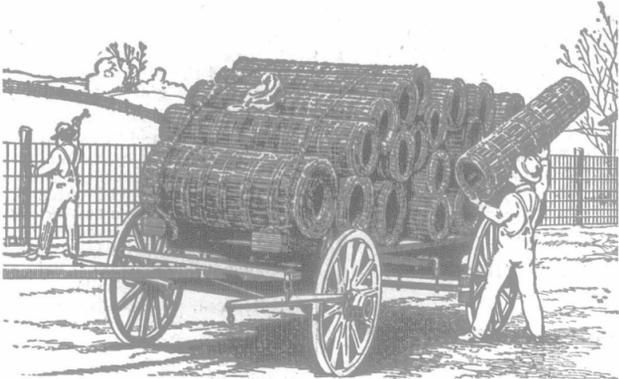
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WE could sell wagons for less money, but we don't care to sell that kind of wagon. We want your second order, and your third, and every order you give for a wagon. We can't be sure of getting those orders unless the first wagon you buy from us proves so satisfactory that you would not think of going anywhere else for the second. We have to tell you how good our wagons are to get your first order. After that, we expect the wagon itself to do the selling. I H C wagons

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are made of selected, high-grade material throughout. Come with us to the works where these wagons are built, and see the tremendous sheds where the lumber is air-dried—seasoned out of doors—for three years or more before it is used. Do you know the difference between air-dried and kiln-dried wood? One process takes years of time, and leaves the fibres of the wood filled with and cemented together by the natural resinous residue of the sap. The other requires only a few days' time, drives out all the sap, resin and all, and leaves the wood brittle and weak. Air-drying produces elastic lumber, wagon parts that bend and give under loads and strains, but that come back to their original position when the strain is



removed. Try for yourself some day the difference in breaking strain between an I H C wagon axle and a piece of kiln-dried wood a third larger. Then you will know why we can hardly keep up with orders.

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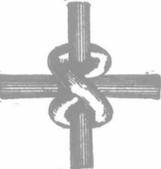
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ARE YOU LOOKING FOR A STRONG, DURABLE FENCE?

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The Anthony is made from all No. 9 spring steel wire, which is thoroughly galvanized.

The stay wires are locked to the line wires with the neatest, strongest and best lock on any fence made.

If you are interested, write for full descriptive catalogue.



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T. H. Hassard

Markham P. O., G. T. R. Locust Hill, C.P.R. is only 3 miles.

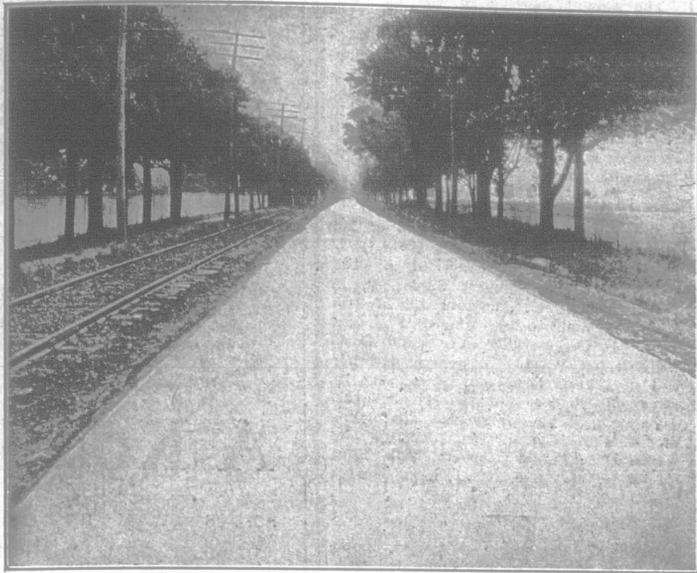
Breakfast was not eaten in the kitchen, because it seemed worth while, now that there were three persons, to lay the cloth in the dining-room; it was also a more bountiful meal than of yore, when there was no child to consider. The morning was made cheerful by Rebecca's start for school, the packing of the luncheon basket, the final word about umbrella, water-proof or rubbers; the parting admonition and the unconscious waiting at the window for the last wave of the hand. She found herself taking pride in Rebecca's improved appearance, her rounder throat and cheeks and her better color; she was wont to mention the length of Rebecca's hair and add a word as to its remarkable evenness and lustre, at times when Mrs. Perkins grew too diffused about Emma Jane's complexion. She threw herself wholeheartedly on her niece's side when it became a question between a crimson or a brown linsey-woolsey dress, and went through a memorable struggle with her sister concerning the purchase of a red bird for Rebecca's black felt hat. No one guessed the quiet pleasure that lay hidden in her heart when she watched the girl's dark head bent over her lesson at night, nor dreamed of her joy in certain quiet evenings when Miranda went to prayer meeting; evenings when Rebecca would read aloud Hiawatha or Barbara Freitchie: The Bugle Song, or The Brook. Her narrow, humdrum existence bloomed under the dews that fell from this fresh spirit; her dullness brightened under the kindling touch of the younger mind, took fire from the "vital spark of heavenly flame" that seemed always to radiate from Rebecca's presence.

Rebecca's idea of being a painter like her friend Miss Ross was gradually receding, owing to the apparently insuperable difficulties in securing any instruction. Her aunt Miranda saw no wisdom in cultivating such a talent, and could not conceive that any money could ever be earned by its exercise. "Hand painted pictures" were held in little esteem in Riverboro, where the cheerful chromo or the dignified steel engraving were respected and valued. There was a slight, a very slight hope, that Rebecca might be allowed a few music lessons from Miss Morton, who played the church cabinet organ, but this depended entirely whether Mrs. Morton would decide to accept a hayrack in return for a year's instruction from her daughter. She had the matter under advisement, but a doubt as to whether or not she would sell or rent her hayfields kept her from coming to a conclusion. Music, in common with all other accomplishments, was viewed by Miss Miranda as a trivial, useless, and foolish amusement, but she allowed Rebecca an hour a day for practice on the old piano, and a little extra time for lessons, if Jane could secure them without payment of actual cash.

The news from Sunnybrook Farm was hopeful rather than otherwise. Cousin Ann's husband had died, and John, Rebecca's favorite brother, had gone to be the man of the house to the widowed cousin. He was to have good schooling in return for his care of the horse and cow and barn, and what was still more dazzling, the use of the old doctor's medical library of two or three dozen volumes. John's whole heart was set on becoming a country doctor with Rebecca to keep house for him, and the vision seemed now so true, so near, that he could almost imagine his horse ploughing through snowdrifts on errands of mercy, or less dramatic but none the less attractive, could see a physician's neat turnout trundling along the shady country roads, a medicine case between his, Dr. Randall's feet, and Miss Rebecca Randall sitting in a black silk dress by his side.

Hannah now wore her hair in a coil and her dresses a trifle below her ankles, these concessions being due to her extreme height. Mark had broken his collar bone, but it was healing well. Little Mira was growing very pretty. There was even a rumor that the projected railroad from Temperance to Plumville might go near the Randall farm, in which case land would rise in value from nothing-at-all an acre to something at least resembling a price. Mrs. Randall refused to consider any improvement in their financial condition as a possibility. Content to work from sunrise to sunset to gain a mere subsistence for her children, she lived in their future, not in her own present, as a mother is wont to do when her own lot seems hard and cheerless.

To be continued.



No ruts on this or any other concrete road

You Can't Wear Ruts in a Concrete Road

Concrete is the Ideal Pavement
for either town streets or
country highways

CONCRETE IS "RUT-PROOF"

TO REALIZE WHAT THIS MEANS, it is only necessary to compare a piece of dirt or Macadam roadway with one that is built properly with concrete. The roadway shown in the illustration is a typical one of its kind. You can see one just like it in almost any Canadian Community. Take a look at the one nearest you. You'll see a big double rut down the centre, made by the vehicles driven there to escape the soft, oozy surface on either side.

There's a reason for that double rut down the centre. A Macadam road when originally laid, must be constructed with a high "Crown," so that the water may drain off properly on either side.

A Concrete road, you'll notice, is not built that way. True, it has a slightly sloping surface, a certain amount of "Crown", but very little is necessary, because a concrete surface drains so much more easily than dirt.

The high crown of the Macadam road forces all vehicles to drive in the centre of the road. From the very day the roadway is ready, every wagon takes the middle of the road; and every one that follows, follows in the ruts thus started. The result is that you have two narrow strips of surface carrying the total traffic that passes over that road. Everybody takes to the ruts.

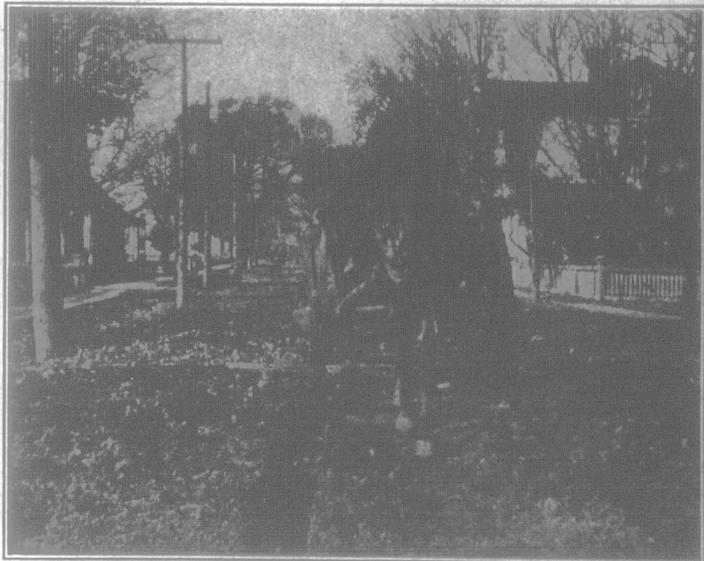
Now see what happens when the road is of concrete. The slope, or crown, of a concrete road is so imperceptible that there's no need to keep to the centre. Vehicles, therefore, use the entire width of the road. The traffic is distributed over the whole surface.

When you drive along a concrete pavement, you'll find no ruts whatever. Concrete doesn't give them a chance to get started.

Concrete roads are not an experiment. They have been proven the best and, in the long run, the cheapest of all roads.

Wind and rain, instead of making mud-pools and ditches, only serve to keep them clean enough to serve as a pathway for pedestrians.

Concrete roads save the farmer's money by allowing him to haul bigger loads, in faster time; they are never impassable when he wants to hurry in with a load of produce to catch high prices.



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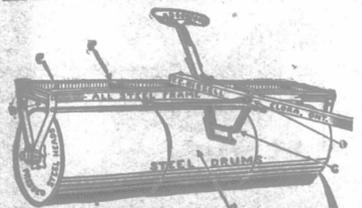
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Director of Colonization
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HON. JAS. S. DUFF,
Minister of Agriculture

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QUESTIONS AND ANSWERS. Miscellaneous.

FEEDING A BULL.

1. Would a bull calf, fed on millet largely, as a substitute for hay, be liable to have his usefulness as a breeder impaired thereby?

2. Is the feeding of whole, dry corn, likely to hurt the reproductive powers of a bull, or bull calf, fed on the same?

R. A. J.

Ans.—1. Not necessarily, provided he was judiciously fed, and kept in a thriving condition.

2. Not in the least.

CEMENT FOR FLOOR AND WALL—HENHOUSE PLAN.

How many yards of gravel and barrels of cement are required to floor the basement of a stable 36 x 56 feet, 2 inches thick, 1 to 6, deducting 20 feet square for root-house not floored?

2. How many yards of gravel and barrels of cement to build a wall 4 x 88 x 24 feet, 10 inches thick, building 1 to 8?

3. Send me plan of henhouse, and I will pay all cost.

R. S.

Ans.—1. About 11 or 12 barrels of cement, and a little over two cords of gravel.

2. Assuming that you mean all four sides of a building, 38 x 24 feet, it would require about 13 barrels of cement and about 3½ cords of gravel.

3. Write Prof. W. R. Graham, O.A.C., for Bulletin on Farm Poultry.

MILLET VS. CLOVER.

1. Explain the feeding value of millet as compared with clover hay. Also damaged millet and damaged clover hay.

2. Where would I have to write to get the bulletin on feedstuffs?

F. W. II.

Ans.—1. This depends somewhat on the class of animals to which the feeds are fed. Good red clover contains nearly 80 per cent. dry matter, between 7.5 and 8 per cent. digestible crude protein, about 35 per cent. digestible carbohydrates, and about 2.8 per cent. fat. While millet contains 86 per cent. dry matter, 5.2 per cent. crude protein, 38.6 per cent. carbohydrates, .8 per cent. fat. The allowance of millet given to horses should be limited, as in large quantities, fed exclusively, it sometimes causes kidney trouble. Millet should be fed in conjunction with some other roughage. Fed to lambs in large quantities induces scouring. Good millet is never as good a feed as good clover hay, and poor millet is far more dangerous to feed than the poorer quality of clover.

2. Write the Ontario Department of Agriculture, Parliament Buildings, Toronto.

KILLING WILD OATS.

I have a ten-acre field with a lot of wild oats in it, and would like to know how to get rid of them. I plowed it last fall, and was going to give it a coat of manure in the spring. Then I wanted to sow oats in it and cut it green for feed. Would it be best to plow it down before they come in head, or would it be all right to sow fall wheat on it, or would the wild oats come again the next year?

E. V. M.

Ans.—Wild oats are not easy to get rid of. Always be sure to sow clean seed. Seeding down and leaving the land in hay or pasture for about five years will eradicate them. Surface after-harvest cultivation will cause some of them to germinate. Short crop rotations, with a hoed crop and frequent clover seedings, and growing crops which are cut before the oats mature, are effective. Some cultivate early in spring and allow the land to remain about two weeks before sowing a crop, and then they cultivate again, which kills the already sprouted wild oats. If the field is sown to oats, and they are cut sufficiently early for green feed, all those which have germinated would be killed, but there is a danger that some of the oats would not have grown, and these might come in the fall wheat. You would get rid of a large proportion of them by this means, but where they are very thick you could not clean the field in one season.

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DAVID CUMMINGS

Maddox, Man.

W. MADDER

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Toronto. Booklets on request, 20 years' experience.
PLEASE MENTION THIS PAPER.

QUESTIONS AND ANSWERS. Veterinary.

FEEDING HEAVY HORSES.

1. How is the best way to feed a heavy horse?

2. What is the best thing to give to purify the blood? R. V. K.

Ans.—1. A heavy horse should be fed three times daily, the amount of grain given depending upon the amount of work being done. A horse of 1,600 lbs., working every day, should be fed about as follows: Six lbs. hay and two gallons of rolled oats for breakfast; four lbs. hay, two gallons of rolled oats, and two or three carrots for dinner; ten lbs. hay and two gallons rolled oats at night. On Saturday night, instead of oats, give two gallons bran and a cupful of linseed meal dampened with hot water.

2. Arsenic—the dose being from five to eight grains two or three times daily, but we do not consider it wise for any person other than a professional man to recommend its administration. The popular idea that horses require "blood purifiers" periodically is wrong, and when such are needed, a veterinarian should be consulted, else serious trouble may result. V.

ITCHY LEGS AND INJURED FETLOCK.

1. Clyde mare has itchy legs. The hair is coming off in patches above the hocks, but the itchininess is below the hock.

2. Mare injured her fetlock a month ago, and it is badly swollen. J. B.

Ans.—1. Give her a purgative of 9 drams aloes and 2 grams ginger. When purgation ceases, give 1½ ounces Fowler's Solution of Arsenic sprinkled on rolled oats twice daily for ten days. Make a solution of corrosive sublimate, 40 grains to a quart of warm water, and while still quite warm, dress the itchy legs, being careful to part the hair in different places to enable you to get the dressing to the skin. Dress this way once daily until itchininess ceases. After dressing, the legs need to be well rubbed, and kept warm until dry, else the reaction may cause cracking. To the bare spots, apply oxide-of-zinc ointment twice daily.

2. Get a lotion made of 1 ounce each of acetate of lead and sulphate of zinc to a pint of water. Bathe the fetlock with hot water, rub well until dry, then dress with the lotion. Wrap in absorbent cotton, and bandage. Change the bandage, bathe, etc., three times daily. When the inflammation is allayed, if enlargement still continues, blister the joint. Details for blistering are very frequently given in these columns. V.

PARASITIC MANGE.

In your issue of the 16th inst., I noticed an article on "Parasitic Mange." I have several mares presenting the symptoms noted, and have been trying for months to cure them, but without success. I was thinking of trying kerosene emulsion. T. S. C.

Ans.—Any parasiticide, properly applied, will effect a cure. Kerosene emulsion, no doubt, would be effective. It is very hard to effectively treat an animal with a long coat of hair. All affected animals should be clipped, but it is dangerous to clip now unless the quarters are very comfortable, and the attendant willing to pay particular attention to their comfort. Treatment consists in dressing with a warm five-per-cent. solution of Creolin, Zenoleum, or other of the coal-tar disinfectants, or dissolve a tin of Gillett's lye in a barrel of warm water, and add four pounds sulphur, and dress with this. The kerosene emulsion you mention will also do. Whatever is used should be applied warm, and the patient well rubbed, and kept warm until dry. The principal point is to get the dressing in contact with the parasite. In some cases it is necessary to moisten scales and scabs with oil, or soap and water, then remove them, and then dress. It may be necessary to repeat the dressing in a couple of weeks. If you have not effected a cure by the first of April, clip your horses, and then you will be able to treat effectively. V.

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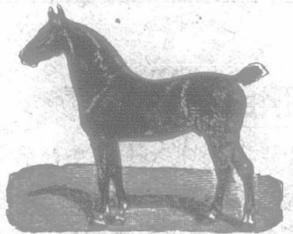
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Cures Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Bolls, Sore, Wire Cuts, Bruises, Swellings, Lameness, and allays Pain quickly without blistering, removing the hair, or laying the horse up. Pleasant to use. \$2.00 per bottle delivered. Describe your case for special instructions and Book 5 B Free. ABSORBINE, J. E. Liniment for manking. For Strains, Painful, Knotted, Swollen Veins, Milk Leg, Gout. Price \$1.75 per bottle at dealers or delivered. W. F. YOUNG, P.D.F., 258 Lyman Bldg., Montreal, Can.

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Commission Agent and Interpreter, NOGENT LE ROTROU, FRANCE

Will meet Importers at any port in France or Belgium, and assist them to buy Percherons, Belgians, French Coach horses. All information about shipping, banking, and pedigrees. Many years experience: best references. Correspondence solicited.

Notice to Importers
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If you want to buy Percheron Horses and Mares, I will save you time and money and all trouble with papers and shipment. Will meet importers at any landing port. I am acquainted with all breeders and farmers. Thirty years' experience. Best reference. Correspondence solicited.

For Sale—Registered Clyde Mare, 4 years old, sire Acme (imp.) (6187) (10485), dam Agnes (imp.) 13536; in foal to Lord Charming [2264] 7564. W. H. KER & SON, St. George, Ont., Brant Co.

DR. BELL'S Veterinary Medical Wonder. 10,000 \$1.00 bottles FREE to horsemen who will give The Wonder a fair trial. Guaranteed to cure Inflammation, Calf, Coughs, Colds, Distemper, Fevers, etc. Agents wanted. DR. BELL, V.S., Kingston, Ont.

Clydesdales, Standard-Breds, and Short-horns. Our herd numbers about 40 head. Headed by the great stock bull, Trout Creek Wonder. Ten bulls for sale, from 6 to 14 months old; all good colors and good individuals. DUNCAN BROWN & SONS, Walnut Grove Stock Farm, Iona, Ont.

QUESTIONS AND ANSWERS. Veterinary.

MISCELLANEOUS.

1. Last spring my five-year-old horse had lampas. I had the gums scarified, but they have grown again.
2. This same horse ate well and was well fed all summer, but did not get fat. Last month his appetite failed, and I observed that he had worms, for which I treated him, but he passed only a few. I feed him two quarts oats, 2 quarts cracked corn, and four quarts bran, daily, and all the good hay he will eat.
3. Give treatment for thrush.

E. J. H.

Ans.—1. Lampas is simply a congestion of the bloodvessels of the gums, which occurs during dentition. It is doubtful whether treatment at any time is necessary, but in many cases the gums are scarified to relieve the congestion. A horse over five years old never suffers from lampas.

2. Worms doubtless prevent thriftiness. Take three ounces each of powdered sulphate of iron, sulphate of copper, and tartar emetic. Mix, and make into 24 powders. Give a powder every night and morning, and after the last has been taken, give a purgative of 8 drams aloes and 2 drams ginger. Feed bran only for 12 hours before and 24 hours after giving the purgative. Feed well on rolled oats, bran, and a few roots and good hay, and give daily exercise.

3. Mix 1 part formalin with 9 parts water. Clean out the cleft of the frog and pour a little of the liquid on and then stuff with batting. Do this every third day until cured. V.

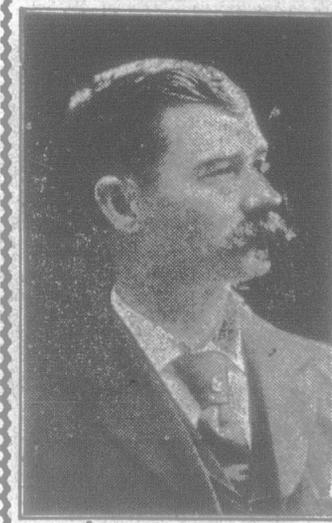
FISTULA—LEUCORRHOEA.

1. I bought a cow two months ago, and noticed a little hole near the back part of udder which discharges matter and comes down through one teat. I bathed it, and it healed, but it broke out again. She is in calf, and nearly dry.

2. I bought a mare two months ago. She urinates frequently, and occasionally discharges a thickish, white substance. A man who owned her two years ago, says that she had the whites, and gets worse in warm weather. W. R. W.

Ans.—1. This is called fistula. If the fistula continues from the external opening into the milk duct, as your description indicates, it is not probable a cure can be effected. Treatment in any case requires an operation, which consists in cutting to the bottom of the sinus, or pipe, removing diseased tissue, and then dressing three times daily until healed with a five-per-cent. solution of carbolic acid. It will be wise to get a veterinarian to operate. When she is dry will be the proper time to treat.

2. This is leucorrhoea, commonly called "whites." In a case of such long standing, the results of treatment are doubtful, and in all cases of this nature recoveries are very slow. Treatment consists in flushing out the womb every six days with about a gallon of a second day with about a gallon of a warm one-per-cent. solution of Creolin, or other mild and non-irritating disinfectant, introduced with an injection pump or syringe with a long nozzle. Also give her three times daily 40 drops carbolic acid in a pint of cold water, sprinkled on her food, or given as a drench. Treatment must be continued until all discharge ceases. V.



My barns at Weston, Ontario, and Brandon, Manitoba, are now full of

PERCHERON Mares and Stallions

Ages from one year old to five years old. Blacks and grays. Weights from 1,600 to 2,100 pounds; of the very best style and quality and breeding France produces. They are of the big thick kind: See them before you buy. I do my own buying in France, ship large numbers, have no partners to divide profits with. Will take small profits so feel sure it will save you money to get prices before you buy. No reasonable offer will be refused. Terms to suit. Many of the mares are safe in foal. For further particulars, write

J. B. HOGATE
West Toronto, Ontario



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We have at our barns the largest and finest bunch of imported approved Percheron stallions and mares ever brought into this country. Our stallions range in age from two-year-olds to six, and are all the large, drafty, heavy-boned type and good movers.

Our mares, of which only a few are left, range from two to five years old, and are all in foal.

As we buy for cash direct from the small French farmer, we are able to sell at prices that will save any buyer from \$200 to \$300 on a stallion, and give more quality and breeding.

To all parties contemplating buying a stallion, we feel confident that it will be to their advantage to inspect our stock, as we sell below competition. Correspondence invited from all interested parties.

R. HAMILTON & SON, SIMCOE, ONTARIO

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We have a large stock of imported stallions and mares to choose from. Our stallions are all Government inspected and approved, and are guaranteed foal getters. We have mares all ages, some nice matched pairs in a lot, and a good many in foal. At the Toronto Exhibition and Guelph Fat Stock Shows our Percherons won more ribbons than any other firms in the business. Intending purchasers write for catalogue.

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Bigger and better than ever before is our 1912 importation just arrived. Stallions with size, character, quality and breeding. Fillies of high-class breeding and quality for show or breeding purposes. Come and see them. Terms and prices right. JOHN A. SOAG & SON, Queensville P.O. and Station, on Toronto to Sutton Electric Line L.D. Phone.

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I am offering prizewinners and champions in Percheron stallions, Standard-bred stallions, French Coach stallions and Percheron mares, filly and horse colts. Prices very low. C. P. R., Ottawa to Montreal line. J. E. ARNOLD, Grenville, Quebec.

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If You Keep 20 or More Cows We Want You to Have This Free Book

It shows the Sharples Mechanical Milker at work in large dairies; tells what other dairymen think of these wonderful machines; shows how much more profit you can make on every quart of milk your cows yield; proves that

The Sharples Mechanical Milker cannot possibly injure the finest animals; shows how it completely solves the milking problem; frees you from this most irksome job; makes you independent of "hired help" and adds \$300 to \$1,000 more each year to your dairy profits. "The Sharples" is the only mechanical milker having

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With our Maple Evaporator sap is easily and economically converted into the finest quality maple syrup.

The body of the Perfect Evaporator is made of heavy sheet steel, thoroughly riveted and braced with steel angles and fitted with cast-iron door and frame. The working of the Evaporator is very simple—put the sap in at one end, and it comes out syrup at the other.



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QUESTIONS AND ANSWERS.
Miscellaneous.

JOINING CLYDESDALE ASSOCIATION.

Please tell me where to send to join the Clydesdale Horse Association of Canada. G. H. G.

Ans.—You can join through the National Records office. Apply simply to "Accountant," National Records Office, Ottawa, Ont., enclosing fees.

OIL - SKIN MOCCASINS.

Editor "The Farmer's Advocate": I saw in your issue of January 9th, an enquiry as to the value of oil-tanned moccasins for winter footwear. I wore these two winters—one in the lumber camps and one on a farm—and found them excellent except when driving. They are as soft and comfortable as the ordinary raw-hide moccasin, and have the advantage of turning the wet when around a barn.

The only disadvantages I found in them were that the seams were apt to rip, and that they made my feet so tender that spring work on a farm in hard boots caused blisters on my heels. The first of these defects is easily overcome with a needle and some strong, waxed thread.

These shoe-packs, as they are usually called, should be worn very big—about three sizes larger than ordinary boots. Wearing them so, with two pairs of socks and birch-bark insoles, I kept my feet very warm and dry, so long as I was walking about, both in the woods and on the open prairie.

Manitoba. W. G. MACLEOD.

ONION MAGGOT.

Tell me, through your paper, a remedy for the onion maggot, which is so destructive to that vegetable, as it works in the roots, and is very troublesome in sandy land. P. N. L.

Ans.—Avoid planting on soil previously infested with the maggot. The maggots prefer carrots to onions, and some plant a little carrot seed with the onions as a decoy, the maggots attacking the carrots and leaving the onions. The late Dr. Fletcher, of Ottawa, recommended the application of carbolic-acid emulsion, made by dissolving 1 lb. of soap in 1 gallon of boiling water, and adding 1 pint of crude carbolic acid. Churn thoroughly with a pump until a creamy emulsion is obtained. Dilute 1 part of the emulsion with 30 of water, and apply around the plants. The first two applications should be four or five days apart, and then one a week for a month. A mixture of carbolic acid and lime is also recommended. Slake the lime three pints to a gallon of water, and add a tablespoonful of crude carbolic acid. Apply every week with a sprinkling can or sprayer.

CHOLERA.

Would like to know something of the cause and cure of cholera in turkeys. One of my turkey hens which I am wintering over, took sick, and as I know the symptoms, I saw she had cholera, and she died the next day. What is the cause of them taking it, and is there any cure for it, or anything to prevent them from taking it. When they take it, they are too sick to eat, so a person could not put anything in their feed. FARMER'S WIFE.

Ans.—When cholera makes its appearance in a flock which has free range, it is almost impossible to control. It is generally advisable to kill and burn all diseased birds, and, if possible, house the remainder in quarters which are not infested. Infection usually takes place through food or drink, which has been fouled by discharges of diseased birds. The germs also gain entrance to the body by inhalation of dust in infected coops which have not been properly disinfected. Pigeons, sparrows, and other birds, may spread the disease. Disinfect all infected houses and runs with a five-per-cent. sulphuric-acid solution. Disinfect water for drinking and other purposes with a teaspoonful of naperool in each two-gallon bucketful. Give any birds showing a suspicious looseness a three-drop dose of spirits of camphor, made into a small pill with breadcrumbs and a little sugar. Administer twice daily for three or four days.



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The Marlin hammerless 12-gauge repeating shotgun, Model 28, is a fine-appearing, beautifully-balanced gun, without any objectionable humps or bumps; no holes on top for gas to blow out through or water to get in; can't freeze up with rain, snow, or sleet; its solid steel breech (not a shell of wood) permits a thoroughly symmetrical gun without sacrificing strength or safety; it is the safest breech-loading shotgun ever built.

It is Hammerless with Solid Steel Breech (inside as well as out)—Solid Top—Side Ejection—Matted Barrel (which costs \$4.00 extra on other guns)—Press Button Cartridge Release—(to remove loaded cartridges quickly from magazine without working through action)—Double Extractors—Take-Down Feature—Trigger and Hammer Safety. Handles rapidly; guaranteed in shooting ability; price standard Grade "A" gun, \$22.60.

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THE WORLD'S GREATEST BEEF BREED

At their farm, Glengrove, four miles from either Alton or Erin stations, C. P. R., where conveyances will meet the morning trains, Mr. Geo. Davis & Sons, will, on **Wednesday, February 12th, 1913** sell unreservedly by auction 30 head of Aberdeen-Angus cattle, 16 registered females, 5 registered bulls, balance grades. These are a choice lot, nearly all young, of the popular Mayflower and Fair Lady tribes.

TERMS: 10 months' credit, 5% per annum off for cash.
W. HULL, Erin, Ont., Auctioneer.

GEO. DAVIS & SONS, R. R. No. 2, Erin, Ont.

THE MAPLES HEREFORDS Never before have had so choice a lot of bulls and heifers about one year old, including the 1st-prize calf herd at Toronto. We can also spare a few older ones. We breed our winners and win with our breeding. Inspection invited. Write us your wants. **MRS. W. H. HUNTER & SONS,** Phone. THE MAPLES, ONTARIO

Orchard Grove Herefords I have lately made a big importation of the leading herds of Illinois. In my herd you now have 25 Bulls to select from; a big range of Heifers and Cows. High-class show and breeding stock a specialty.
L. O. CLIFFORD, Oshawa, Ontario, G. T. R. and C. N. R.

15 SHORTHORN BULLS 15

We have been breeding Shorthorns on this farm for over 60 years, and I never saw a better lot of young bulls for sale than I have at the present time. Nearly all of the best Scotch breeding; reds and roans, from 10 to 20 months old. Also a few females and several registered Clyde fillies. Prices within the reach of all. Will quote prices, freight paid to your nearest station.

Claremont Stn., C. P. R., 3 miles. Pickering Stn., G. T. R., 7 miles. **JOHN MILLER, Brougham, Ont.**

Shorthorns—Records show that cattle bought from the Salem herd won numerous ribbons the past season. We have others. Several young bulls are priced reasonably.
Elora G. T. R. and C. P. R. J. A. WATT, Salem, Ont.

Springhurst Shorthorns Four of the first-prize Shorthorns at the late Guelph show, including the champion and grand champion fat heifer, were all sired by bulls of my breeding. I have now for sale ten young herd headers of this champion-producing breeding. **HARRY SMITH, HAY P. O., ONT** Exeter Station. Long-distance phone.

Shorthorns of breeding and quality—Our offering this year in young bulls and heifers, out of Scotch cow, and sired by our great Mildred Royal, are put up on show lines, and strictly first-class.
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Cure the lameness and remove the bunch without scarring the horse—have the part looking just as it did before the blemish came.

Fleming's Spavin Cure (Liquid) is a special remedy for soft and semi-solid blemishes—Bog Spavin, Thoroughpin, Splint, Orb, Capped Hock, etc. It is neither a liniment nor a simple blister, but a remedy unlike any other—doesn't irritate and can't be limited. Easy to use, only a little required, and your money back if it ever fails.

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Our present offering in Shorthorn heifers and young bulls are modern in type and of richest Scotch breeding, and the prices are low; Cotswold Ewe and Ram lambs of high quality.

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L. D. Phone

Woodholme Shorthorns

I have for sale a number of choice young bulls, from 8 to 14 months old (pure Scotch); also a number of heifers, 1 to 2 years old, of this level type, and richest breeding. **G. M. FORSYTH,** North Claremont, Ont.

SPRING VALLEY SHORTHORNS

Herd headed by the two imported bulls, Newton Ringlander, -73783- and Scottish Pride, -36106- The females are of the best Scottish families. Young stock of both sexes for sale at reasonable prices. Telephone connection.

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1854 Maple Lodge Stock Farm 1913

Am offering a very fine lot of young Shorthorn bulls just now. Excellent breeding and most from splendid milking dams. The kind that is needed.

House is one mile from Lucan Crossing, G. T. R.

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Present offering: Three choice yearling bulls. Young cows in calf. Yearling heifers; Clippers, Minas, Wimples, Julias, etc. Inspection solicited. Prices moderate. Phone connection.

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Oakland—50 Shorthorns.

Offering for winter and spring trade, is six excellent bulls from ten months to two years old. Out of fine dual purpose dams and sired by our noted Scotch Grey Bull 72692. He is a beautiful roan and all quality, he is also for sale or exchange.

John Elder & Sons, Hensall, Ont.
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Our herd of Shorthorns (Imp.) or direct from imported stock, is headed by the grandly-bred Bruce Mayflower bull, Royal Bruce (Imp.) -55038- (89909) 273853. Choice young stock for sale.

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Have some choice young bulls for sale, also cows and heifers of show material, some with calves at foot. Also choice Yorkshire and Berkshire sows. **ISRAEL GROFF,** Elmira, Ontario.

GOSSIP.

THE BLACK DODDIE SALE.

Farmers interested in beef-producing cattle should remember the date, Wednesday, February 12th, and attend the sale of Geo. Davis & Sons, near Alton or Er'n, C. P. R. It is seldom that an opportunity is offered to purchase by auction Aberdeen-Angus cattle that have for years proven their superiority at the leading British, American, and Canadian fat-stock shows as the beef breed par excellence. Another year will soon roll around, when another battle royal will be waged for supremacy at the fat-stock shows, and the nine grades to be sold offer an excellent opportunity to get a candidate for preparation. The pure-breeds are also the best possible kind for a herd foundation, and at the price beef cattle are selling at, and the price they will certainly continue to sell at, no mistake is possible in purchasing Aberdeen-Angus cattle. The sale is absolutely bona fide, and every animal put up will be sold, as the herd must be reduced, and the pick of them all are the ones going in. Nearly all are young, and in nice condition. There will also be sold eight head of horses, so that the sale will be particularly interesting.

HIGH-CLASS CLYDES AT ORMSBY GRANGE.

Ormsby Grange Stock Farm, at Orms-town, Quebec, the home of Scotland's best in Clydesdale fillies, and one of the best equipped horse importing and breeding farms in Canada, and the property of Dr. D. McEachran, who for many years successfully and acceptably filled the position of Chief Veterinary Inspector for the Dominion, and inaugurated our present faultless system of live-stock quarantine, which has resulted in Canada's live stock carrying the cleanest bill of health of any country in the civilized world, was visited by a representative of this paper a few days ago, and was shown through the commodious stables by the Doctor, who is never so happy as when explaining to visitors the breeding and qualities of his big selection of prizewinning Clydesdales, for it is certain that very seldom, if ever before, were so many Scotch prizewinners seen together in a Canadian stable. A few only, of the many, have we space to mention. Lady Edward is a brown three-year-old, in foal to the H. & A. S. first-prize and Kilmarnock champion horse, Star o' Doon, and sired by the Kilmarnock champion, Royal Edward, dam by the noted Gay City. She was first at the Highland, and at Dunblane, and champion at Kilmarnock. Lady Caroline is a brown two-year-old, that was first at Cornhill, and third at Elgin and Banff, sired by that big, quality horse, Musilino, dam by the four-times Cawdor Cup champion, Prince of Carruchan. Miss Lanark is a brown three-year-old, that was first at the Douglas Show, and is in foal to the Aberdeen first prize and Inverness champion horse, Scotland's Splendour, and sired by the Dunbarton champion, Mellenside, dam by the H. & A. S. first prize, Baron's Chief. Darling of East Blacks is a brown two-year-old, that won at the Kintyre Show, sired by the Royal and Highland first-prize horse, Silver Cup, dam by the noted breeding horse, Sir Ronald. Lovely Comet is a black two-year-old, by the Cawdor Cup champion, Revelanta, dam by the £700 show horse, Brooklyn. Alice Ross is a bay yearling, by the H. & A. S. first prize, Pride of Blacon, dam by the renowned champion, Everlasting. These mentioned show the high-class breeding of the entire lot, many of which have pedigrees that go back to the Clyde dale origin, with five and six numbered dams. They are all up to a big size, with great draft character, 17 hands high, and weighing upwards of 1,900 lbs. They are the kind the country wants, and the Doctor has them priced right. At the time of our visit he was preparing a big shipment sold to P. Burns, of Calgary, among which were several Old Country winners, which, like all the Doctor's selections, are solid colors.



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Please find enclosed postal notes for \$15.00, the amount of my account. I have found International Stock Food excellent for my horses and cattle, and pigs. It has given me every satisfaction, and I would not be without it. As soon as my present supply is finished, I shall send a further order.

(Signed) J. V. SMITH.

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Pigs fetch higher prices and are ready for market three weeks earlier when fed on MOLASSINE MEAL than when fed on any other food. It is the best food known to Science for all Live Stock. It puts the digestive organs in perfect condition and enables the animals to obtain all the nutriment of their entire food. It keeps them free from worms.

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SCOTCH SHORTHORNS FOR SALE

Two high-class imported yearling bulls. Eighteen bull calves, 8 to 14 months old, by the imported sires Bandsman and Village Duke. Forty heifers and young cows of best Scotch families, bred to imported sires. Some Toronto and London prizewinners, both sexes; also some imp. yearling heifers.

MITCHELL BROS.
Burlington, Ontario
Farm 3/4-mile from Burlington Junction Station.

SHORTHORNS!

Have now a choice lot of young bulls to offer; also with something nice in heifers. Catalogue of herd and list of young animals on application. **H. Cargill & Son, Props.,** John Clancy, Manager. Cargill, Ont., Bruce Co.

I Have SHORTHORN Bulls and Heifers, SHROPSHIRE and COTSWOLD Rams and Ewes, CLYDESDALE Fillies and Colts that are as good as I have ever had, and that I will sell for prices within the reach of all. We have been in the business 75 years, always in the front rank, and propose to keep that position. You cannot afford to buy without writing us for prices. **ROBERT MILLER, STOUFFVILLE, ONTARIO**

10 SHORTHORN BULLS 10

If in need of a bull those that we are offering should interest you. They range from 8 to 14 months old, and are nearly all bred direct from imported stock. We also have females of all ages. Bell phone. Burlington Junction, G. T. R. **W. G. PETTIT & SONS,** Freeman, Ontario.

1861 Irvine-Side Shorthorns 1912

Offering for sale young bulls and heifers that are the result of over 50 years successful breeding. Pure Scotch, and carrying the best blood of the breed. Few good Oxford Down rams.

John Watt & Son, Salem P. O., Ont. Elora Station, G. T. and C. P. R.

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Write for prices and particulars.



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Maple Grove, Crescent Ridge and
Motto: Richest breeding, superior individuals,
representing the famous Tidy Abberkerk's, the
Merona's, also granddaughters of Pietertje Hen-
gerveld's Count De Kol, and Pontiac Korndyke
and other rich producers; 100 head to select from.
King Lyons Hengerveld and two grandsons of
Pontiac Korndyke head the herds.

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Holstein Cattle

The most profitable
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Holsteins of Quality

Write us to-day for our proposition, telling
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Performance cow without investing a cent
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MORRO & LAWLESS, "Elmdale Farm"
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Registered Holsteins

6 cows in splendid condition, all large,
straight animals and due to freshen
before 1st April. Also some young
stock of excellent breeding,
both sexes.

Calver V. Robbins, Riverbend. Bell Phone.

Hawthorne Glen Holstein Herd

Offers young bulls ready for service, one from
Calamity Houwtje, winner of 1st prize in
cow class at Guelph, 1912; also a half-
brother to Pontiac Jessie, sweep-
stakes heifer under 36 months;
also a few females. Prices
reasonable.

Write for particulars, or come and make your choice.
MARTIN McDOWELL
Eastwood Sta., G. T. R. Oxford Centre, Ont.

The Maples Holsteins

I am now offering for sale 10 young bulls, official
record backing on both sire's and dam's side. They
are good enough for service, and my prices should
soon sell them.

WALBURN RIVERS, Foldens, Ont.
Phone. Oxford County.

Holstein-Friesians

Special offer-
ing: Bulls
from 1 to 15 months old. The growthy kind that
will give good service. One from a son of Ever-
green March, and all from Record of Merit dams.
Write for particulars. G. W. CLEMONS, St.
Cecilia, Ont. Bell telephone.

Holsteins and Tamworths

I am over-stocked and will sell a lot of young cows
and heifers, winners and bred from winners; offici-
ally backed and right good ones. Also Tamworths
of all ages.

R. O. MORROW & Son, Hilton P.O., Ont.
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For Sale Choice Reg. HOLSTEIN HEIFER
CALVES, sired by Homestead
Colantha Sir Abberkerk 2nd, whose dam and sire's
dam average 26.81 butter 7 days and from tested
dams; and two yearling heifers, sired by Corinne Cal-
amity Ormsby. W. A. Bryant, Cairngorm, Ont.

HOLSTEINS and YORKSHIRES
Minster Farm offers a young bull fit
for service in spring, from a R.O.P.
dam, whose 8 nearest tested dams aver-
age 24.16 lbs. butter in 7 days. For
extended pedigree and particulars,
write—Richard Honey & Sons, Brickley, Ont.

Young Holstein Cow For sale; 4 years
old, due
to calve in February; also her heifer, 1 year and 4
months old; served by pure-bred bull. Will sell at
reasonable prices. A. D. URLIN, Dutton, Ont.

Bataphorene Farm Jerseys Present offerings:
Choice bull calves
from three to sixteen months, at very reasonable
prices for quick sale. JOSEPH SEABROOK,
Havelock, Ontario

For Sale—Jersey cows and heifers and bulls
for exportation. All pedigree and
Herd-book stock. For further particulars apply to
A. T. SPRINGATE, Breeder and Exporter,
Gorey, Jersey, Europe.

TRADE TOPICS.

SPECIAL AROUND - THE - WORLD CRUISE

Canadian Pacific Expresses of "Russia"
and "Asia."

An unusual opportunity for an around-
the-world cruise, all under the Canadian
Pacific flag, with its consequent standard
of service, is offered with the advent of
the great new quadruple screw turbine
engine steamships "Empress of Russia"
and "Empress of Asia."

The "Empress of Russia" will sail from
Liverpool April 1st, and will call at
Gibraltar April 4th, Villefranche April
8th, Port Said April 18th, and will pro-
ceed via Suez, Colombo, Singapore, Hong
Kong, Shanghai, Nagasaki, Kobe, Yoko-
hama, and arrive at Vancouver Satur-
day, June 7th. From Vancouver to Tor-
onto, passengers may travel via Cana-
dian Pacific main line or Crows' Nest
Pass line, and may also travel from
Fort William or via Great Lakes route
to Port McNicoll.

Vessel remains 16 days at Hong Kong.
The most direct connection to make
for the sailing from Liverpool April 1st
is via "Empress of Britain," from St.
John, N. B., March 21st, 1913.

The rate for the entire cruise is
\$639.10, exclusive of maintenance be-
tween arrival time in England and de-
parture of the "Empress of Russia" and
stop-over at Hong Kong.

The "Empress of Asia" will sail from
Liverpool June 18. Particulars of trip
will be announced later.

For information apply to Canadian
Pacific Agents, or write M. G. Murphy,
District Passenger Agent, Toronto.

CONSERVING SOIL FERTILITY.—A

sixty-page booklet of exceptional interest,
which may appropriately be given a
careful study at this season of the year,
is that entitled "Conservation of Soil
Fertility," with recommendations for
furnishing plant food to farm crops.

The author is Emmons B. Dunbar, B.Sc.,
agronomist of the educational depart-
ment, International Agricultural Corpora-
tion, Buffalo Fertilizer Works. The sub-
ject is conveniently discussed in seven
chapters, and is freer from bewildering
technicality and decidedly more readable
and lucid than many pamphlets covering
the same ground. The first chapter
shows the necessity for a more deter-
mined effort to increase the quantity
and quality of farm crops, followed by
an understandable statement of the soil
conditions, physical and chemical, which
may be corrected with the result of
larger crops. An admirable chapter is
that on humus, the supply of which the
writer states may be increased by ap-
plying stable manure, plowing down
green crops, and a rotation system, by
which stubble, sod and roots of crops
are turned back into the soil. The part
played by soil moisture and the different
classes of manures, are in turn de-
scribed, and the needs in turn of all the
principal farm and garden crops. Four
factors at least are shown to be in-
volved in the increase of farm resources:

(1) Good cultivation; (2) thorough
drainage; (3) complete organic matter;
(4) plenty of available plant food. Every
pound of wheat or corn, every bushel
of wheat or corn, every pound of other
farm-grown products shipped out of the
country, means so much fertility or
capital stock gone out and lost for ever,
if not replaced from other sources. Of
those outside the farm, the great fertil-
izer manufacturing companies are re-
turning it in a measure in the form of
ammonia, salts, phosphate, and potash,
together with meat products, such as
bone, dried blood, etc. This pamphlet,
of which copies can be secured
from the Buffalo Fertilizer Works, Buf-
falo, N. Y., will be a help in the under-
standing of farm conditions in order to
improved and more profitable methods.
In the United States, the use of fertil-
izers increased about 1,500,000 tons be-
tween 1909 and 1911, being in the lat-
ter year 6,594,692 tons. The American
farmer is assuredly not doing this
without tangible return. The pamph-
let concludes with an appendix giving
spray calendar and formulae, seeds to
sow per acre, and other useful farm
tables.

HIGHEST PRICE FOR CREAM

T. EATON CO. LIMITED is now paying 31c per lb. for
Butter Fat. We buy cream, sweet or sour, of good
flavor. We furnish the cans and pay the express
charges within a radius of 250 miles of Toronto.

We test and weigh each can on arrival, and send
you a statement for same.

We pay all patrons once a week, and the price is
increased as the price of butter advances.

Drop us a card, and we shall be pleased to furnish
you with any further information you may require.

THE T. EATON CO. LIMITED
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Livingston's OIL CAKE MEAL

Is the most wholly nutritious stock food you can buy. Made of the
purest linseed—by the celebrated Old Patent Process (which makes it
keep three or four years, if necessary) proved by feeding tests, both
practical and scientific, to be 95% digestible.

Even if LIVINGSTON'S OIL CAKE MEAL costs twice as much as
the other foods which do not keep and cannot be half digested, it would
pay every farmer and dairyman to get LIVINGSTON'S OIL CAKE
MEAL. The cost is only a trifle higher.

LIVINGSTON'S OIL CAKE MEAL is really cheapest in the end—
quickly increasing and improving the milk and healthily FATTENING
CATTLE.

Ask your dealer. If he cannot supply you, write us.

THE DOMINION LINSEED OIL CO. LTD.

Manufacturers.
BADEN, ONTARIO. MONTREAL, QUEBEC.

AVONDALE STOCK FARM

Herd bulls: Prince Hengerveld Pietje 8230 (50582). Sire, Pietje 22nd Woodcrest Lad, out o.
Pietje 22nd, 31.00 lbs. butter 7 days; greatest imported cow, and one of the greatest young sires of
the herd, having already sired a 35-lb. 4-year-old daughter. Dam, Princess Hengerveld De Kol,
33.62 lbs. butter 7 days, highest record daughter of Hengerveld De Kol, with 116 tested daughters.
King Pontiac Artis Canada 10042 (72294). Sire, King of the Pontiacs, greatest living sire of the
herd, and sired by the greatest sire of the breed Pontiac Korndyke. Dam, Pontiac Artis, daughter
of Hengerveld De Kol. Record, 31.8 lbs. butter 7 d. y. s. 128 lbs. 30 days. 1,076 lbs. 365 days. Young
bulls from these two great sires for sale, from cows with records up to 29 lbs. Write us, or bette
come and see them. Visitors always welcome. Address all correspondence to:
A. C. HARDY, Owner. H. LORNE LOGAN, Mgr., Brockville, Ont.

King Segis Walker

The highest pedigreed
sire in Canada. Aver-
age record of dam,
grandams, and g. gr.
dams: Butter, 25.38
lbs.; milk, 544.42 lbs.;
fat, 4.24 lbs. For service, \$25. This sire's get are 80 per cent. females. For sale: A grandson of
King Segis and Pontiac Pet. record 37.67 lbs. butter and the world's champion; also a bull calf whose
dam is a daughter of Pontiac Korndyke, and just completed a record of 722 lbs. in seven days

A. A. FAREWELL, OSHAWA, ONTARIO

LAKEVIEW HOLSTEINS

We have a few bulls left that are ready for service, and must sell them now, as
our barns are full. They are sired by Count Hengerveld Fayne De Kol, or out of
his daughters by Dutch and Colantha Sir Mont. and all their dams are in the
Record of Merit. For immediate sale the prices will be greatly reduced. A
post card will bring extended pedigrees by return of mail.

E. F. OSLER, BRONTE, ONTARIO

FAIRVIEW FARM'S HERD

OFFERS sons of Pontiac Korndyke
25983, the greatest sire that ever lived,
and the only bull that ever sired 12
daughters that have made 7-day records above 30 pounds each. Do you want your
next bull to be a brother to such cows as Pontiac Lady Korndyke (38.02), Pontiac
Pet (37.67), Pontiac Clothilde De Kol 2nd (37.21), Sadie Vale Korndyke (36.20),
Pontiac Korndyke. I also have sons of Rag Apple Korndyke and Sir Johanna
Colantha Gladi. E. H. DOLLAR, HEUVELTON, NEW YORK. Near Prescott.

Summer Hill Holsteins

Would you like your next bull to be from the same sire as the heifer that holds the world's
record for yearly work, and the same sire as the Champion Cow of Canada in the seven day work,
and the same sire as the Champion four-year-old of Canada in the thirty day work? We have bulls
of this breeding to offer whose dams have records of over 27 lbs. We have also some extra choice
heifers bred to our junior herd bull whose dam has a record of 34.60 lbs. butter in seven days and 111
lbs. milk a day. Yorkshires of all ages. D. C. FLATT & SON, R. R. No. 2, Hamilton, Ont.

HOLSTEINS AND YORKSHIRES We have at present a number of two-
year-old heifers, some in calf and some
just bred, also our stock bull King Peter Teak sired by Peter Teak O. A. C., dam Queen
Mabe. Also some sows safe in pig. A. WATSON & SON, R. R. NO. 1,
ST. THOMAS, ONTARIO.

HOLSTEINS

I can supply a limited number of high-producing and highly-bred females; also young
bulls, bred on both sides from high official backing. Let me know your wants.
W. E. THOMPSON, R. R. No. 7, Woodstock, Ont.

CREAM

per lb. for... of good... express... and send... price is... to furnish... require.

LIMITED CANADA

CAKE

de of the... makes it... tests, both... much as... it would... L CAKE... the end—... TENING

QUEBEC.

crest Lad, out o... st young sires of... gerveld De Kol... ested daughters... living sire of the... c Artis, daughter... 365 days Young... rite us, or bette

ckville, Ont.

ighest pedigreed... Canada. Aver... record of dam... ama, and g. gr... Butter, 25.38... milk, 544.42 lbs.;... : A grandson of... a bull calf whose... s. in seven days

TARIO

INS

ac Korndyke... at ever lived... ever sired 12... ou want your... 3.02), Pontiac... dyke (36.20),... e on a son of... Sir Johanna... ar Prescottt.

ins... olds the world's... even day work... We have bulls... e extra choice... n days and 111... milton, Ont.

wo... me... een... 1... 0.

les; also young... wants... ck, Ont.

Lump Jaw



The first remedy to cure Lump Jaw was Fleming's Lump Jaw Cure and it remains today the standard treatment, with years of success back of it, known to be a cure and guaranteed to cure. Don't experiment with substitutes or imitations. Use it, no matter how old or bad the case or what else you may have tried—your money back if Fleming's Lump Jaw Cure ever fails. Our fair plan of selling, together with exhaustive information on Lump Jaw and its treatment, is given in Fleming's Vest-Pocket Veterinary Advisor. Most complete veterinary book ever printed to be given away. Durable bound, indexed and illustrated. Write us for a free copy.

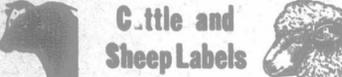
FLEMING BROS., Chemists, 75 Church Street, Toronto, Ont.

AYRSHIRES FOR SALE!

Seven bulls and a few heifers of different ages, sired by Woodroffe Comrade, whose first heifer in milk gave 11,392 lbs. milk, 480 lbs. butterfat in one year. Prices right. **H. C. HAMILL, BOX GROVE P. O., ONT.** Markham, G. T. R.; Locust Hill, C. P. R. Bell 'phone connection from Markham.

Hillcrest Ayrshires—At head of herd is Ivanhoe of Tanglewild, a son of the champion Ayrshire cow, Primrose of Tanglewild, R.O.P. test 16,195 lbs. milk and 625.62 lbs. fat; 60 head to select from. Inspection invited. **F. H. HARRIS, Mt. Elgin, Ont.**

Cattle and Sheep Labels



A cent spent now may be the means of saving you three calves next fall. Send your name and address for free sample and circular. It is no trouble, and you can judge them for yourself. Write to-day.

F. G. JAMES, Bowmanville, Ont.

Farnham Oxfords and Hampshires. The oldest established flock in America. Present offering: a few two-shear and older ewes of both breeds, bred to our imported champion ram. Also a few nice ewe lambs by imported sires. Prices reasonable. **Henry Arkell & Sons, Arkell, Ont. L.-D. 'phone in house.**

Dorset Ewes

In lamb. Ewe lambs. Chester White Boars about five months old. One Holstein bull 12 months old. All of the choicest breeding, and will be sold at a bargain to make room.

R. H. HARDING, THORNDALE, ONTARIO
Mapleview Farm.

ALLOWAY LODGE STOCK FARM

SOUTHDOWNS ANGUS COLLIES

The best in their respective breeds. Write for information to: **ROBT. McEWEN, Byron, Ont. R.R. Stn. and Tel. Office, London.**

For Sale—A number of young, registered Lincoln Breeding Ewes and Ewe Lambs of choice quality and breeding, and bred to first-class rams. For particulars, apply to: **S. W. EDWARDS, Watford P.O., Ont.**

Those who believe that calves from mature cows make better dairy animals than the first-born of a heifer, will find one notable exception in the case of the great Jersey cow, Jacoba Irene, the world's champion long-distance dairy cow, who was the first calf of her dam, born before her mother was two years old.—Jersey Bulletin.

Chapped Hands Won't Bother You



if instead of soap you use **SNAP**, the original hand cleaner. **SNAP** contains no lye or acids, but glycerine and neutral oils which keep the skin smooth and in splendid condition. Try **SNAP** for a week and notice the difference.

SNAP

Order from your dealer to-day. Save coupons.

GOSSIP.

Young registered Lincoln breeding ewes in lamb, and ewe lambs of choice quality and breeding, sired by Toronto, London and Chicago prizewinning rams, are advertised for sale by S. W. Edwards, Watford, Ont., G. T. R., thirty miles west of London. This flock is founded on stock bred by those excellent judges and successful breeders, Graham Walker, of London Township, and William Oliver, of the same place, and should be well worth looking after. The ewes offered have averaged over 11 lbs. of washed wool for a number of years, and are good representatives of this excellent breed.

SHORTHORNS AND COTSWOLDS AT GLENGOW.

Wm. Smith, M. P., & Son, at their farm, Glengow, Columbus, Ont., are just now offering some rare bargains in Scotch-bred Shorthorn heifers and young bulls, sired by the well-bred, mellow, and good breeding bulls, Broadhocks Prince =81055=, a son of the great sire, Imp. Bullrush, a Cruickshank Butterfly, and out of the cow Broadhocks Beauty 2nd, and the grandly-bred Claret bull, Royal Claret. The dams of these young ones on blood lines are the ever-popular Wedding Gifts, Killlean Beautys, Strathallans, and Crimson Flowers, better than which for the dual-purpose of the ordinary farmer there is none. About half a dozen young bulls, and over a dozen heifers, can be spared, and the quality of the offering and the prices asked, should very soon clean up the lot. In Cotswolds, the offering is sixteen ewe lambs and five ram lambs, of remarkable uniformity of type and covering. These can also be bought at very easy prices. Parties wanting either Shorthorns or Cotswolds will certainly be doing themselves a favor by getting in touch with the Messrs. Smith, at Columbus P. O. or Myrtle Station, C. P. R., Oshawa or Brooklin Station, G. T. R.

CLYDESDALES AND HACKNEYS AT MOUNT VICTORIA.

Another visit to the splendid farm, Mount Victoria, at Hudson Heights, Que., by a representative of this paper, developed a pleasant surprise at the splendid condition and high-class character of the Clydesdales and Hackneys. Continual improvement in breed character, individual excellence, and superb quality, seem to be the order of things on this well-managed farm, and surely the owner, T. B. McCaully, of Montreal, was very fortunate in his selection of E. Watson for manager. At the head of their splendid Clydesdale stud are the three noted sires, Netherlea (imp.), winner of championship honors at Glasgow; the well-known Canadian first-prize and championship winner, Lord Aberdeen (imp.), and the noted sire of winners, Lord Mac (imp.). It is seldom that three such horses are found in one man's barn, but it only bears out the motto in vogue on the farm, that "the best is none too good." The same high-class character is manifested in the mare and filly end of the stud, the 1912 importation making a decided acquisition to the quality of this end, notably the big, drafty filly, Miss Sally (imp.), by the Royal champion, Diploma, dam by the renowned King of Kyle, and Ida (imp.), by the noted prizewinner, Baron Mitchell, dam by the popular Ormonde. These are both two-year-olds, the former in foal to the Royal and Highland first-prize horse, Prince Shapely. At the head of the Hackney stud is the many-times champion, Christopher North (imp.), a son of the great Polonias. Assisting him is the St. John and Sherbrooke champion, Silver King. Another is the high-class Mathias 2nd imported in dam, by the famous Mathias. The almost unbeaten record of these great horses at the leading shows is the best guarantee of their high-class individuality and all-round action. Among the mares are such celebrities as the unbeaten champion Cymbal (imp.), the Ottawa, Quebec and Sherbrooke champion Ophelia's Heiress (imp.), and the many-times winner, Royal Ophelia, imported in dam. In breeding, there are also eight imported Shetland mares, probably the best lot in Canada. Their produce will be for sale.

Why Wood Silos are the best

Many Government experiment stations, especially in the United States, have made exhaustive experiments as to the most suitable material for silo construction, and the general conclusion seems to be expressed in the following statement from a recent experiment station bulletin: "A round, wooden stave silo, taking all things into consideration, has proved most satisfactory."

The reason for this is simple. The very best silage is obtained when the whole mass is kept at an even temperature and all air excluded. Cement, stone or brick silos conduct away the heat generated in the silage and thus prevent proper fermentation; furthermore, both cement and brick are porous and permit the air to get at the silage, thereby causing it to spoil. The many experiments and tests made have gone to show that frequently as much as one-third of the silage in a cement or brick silo will be spoiled and unfit for use, while in properly constructed wood silos the only spoilage will be a little on the top.

Due to our colder Canadian climate wood is the only material suitable for silo construction. If you have any doubts on this point write to us, and we will be glad to give you further information on this vital subject and show you why it is to your interest to erect an Ideal Green Feed Silo in preference to any other kind, not only from the standpoint of first cost, but also from the standpoint of more satisfactory service.

We are the oldest and best known silo manufacturers in Canada. Thousands of our Ideal Green Feed Silos are in use on many of the most prosperous farms, and they always give entire satisfaction.

Send for our new Silo Book. It will explain fully why the

IDEAL GREEN FEED SILO IS THE BEST WOOD SILO

DE LAVAL DAIRY SUPPLY CO., LTD.
LARGEST AND OLDEST SILO MANUFACTURERS IN CANADA
173 William Street., MONTREAL 128 James Street., WINNIPEG

80 Imported and Canadian-bred Ayrshires

I am now offering by private sale my entire herd of 80 Ayrshires, imported, imp. in dam and Canadian-bred; big producers, show stock, high-class in quality, with best breeding. L.-D. 'PHONE. **DAVID HUNTER, MAXVILLE, ONTARIO**

Ayrshires and Yorkshires—I have now offered at large sale bull calves dropped in July, 1912. All bred from (imp.) sire and from either dams with good records, or their daughters either imported or home-bred. Some choice February pigs: also young pigs.

stonehouse Ayrshires
Of choicest imported stock and with imp. sires and dams. I am offering young cows, 3, 4 and 5 years of age; a grand bunch of imp. yearling heifers, and a particularly good pair of young bulls.

City View Ayrshires—Three young bulls fit for service; females from 3 months to 9 years; all young stock 3 years and under from R. O. F. ancestors. Always something for sale. Bell phone connections; 1 1/4 miles from 3 railroad stations.

GLENHURST AYRSHIRES ESTABLISHED OVER 50 YEARS
high standard. We can supply females of all ages and young bulls, the result of a lifetime's intelligent breeding; 45 head to select from. Let me know your wants. **JAMES BENNING, WILLIAMSTOWN P. O. Summerstown Sta., Glengarry**

STOCKWOOD AYRSHIRES This herd is now headed by White Hill Free Trader (imp.) No. 33273, championship bull at Sherbrooke; also headed the 1st-prize aged herd. All ages for sale. Satisfaction guaranteed. **D. M. WATT, St. Louis Sta., Que. Telephone in house.**

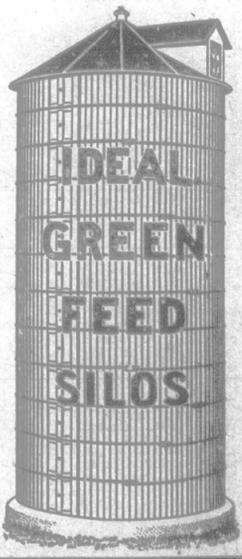
Belmont Shropshires and southdowns

I have a grand lot of rams and ewes for sale, both breeds. Anyone wanting a good ram, or a few good breeding ewes, should write me at once and get the first choice.

C. Hodgson, Brantford, Ont.

COTSWOLDS AND SHROPSHIRE At Toronto I won 1st on flock, champion on both ram and ewe in Cotswolds. I have for sale a big lot of shearling rams and ewes, ram and ewe lambs of both breeds: strictly high-class.

J. MILLER, JR., "BLAIRGOWRIE FARM," ASHBURN P. O., ONTARIO
AMERICAN SHROPSHIRE REGISTRY ASSOCIATION
Only Shropshire Association recognized by U. S. Government Largest membership of any live-stock association in the world. Life membership \$5.00. No yearly dues. Write for information. **J. M. WADE, SECRETARY, LAFAYETTE, INDIANA**



How to Make Better Cough Syrup than You Can Buy

A Family Supply, Saving \$2
and Fully Guaranteed.

Sixteen ounces of cough syrup—as much as you could buy for \$2.50—can easily be made at home. You will find nothing that takes hold of an obstinate cough more quickly, usually ending it inside of 24 hours. Excellent, too, for croup, whooping cough, sore lungs, asthma, hoarseness and other throat troubles.

Mix two cups of granulated sugar with one cup of warm water, and stir for two minutes. Put 2½ ounces of Pinex (fifty cents' worth) in a 16-ounce bottle, then add the Sugar Syrup. It keeps perfectly. Take a teaspoonful every one, two or three hours.

This is just laxative enough to help cure a cough. Also stimulates the appetite, which is usually upset by a cough. The taste is pleasant.

The effect of pine and sugar syrup on the inflamed membranes is well known. Pinex is the most valuable concentrated compound of Norway white pine extract, rich in gualacol and all the natural healing pine elements. Other preparations will not work in this formula.

The Pinex and Sugar Syrup recipe is now used by thousands of housewives throughout the United States and Canada. The plan has been imitated, but the old successful formula has never been equalled.

A guaranty of absolute satisfaction or money promptly refunded, goes with this recipe. Your druggist has Pinex, or will get it for you. If not, send to The Pinex Co., Toronto, Ont.

NO MORE WET OR COLD FEET!!

With Health Brand Clogs on, the man or woman who works in the wettest, coldest places always has warm, dry and comfortable feet. Try a pair yourself this winter.



Felt-lined CLOGS

(As illustrated)
Fine leather tops, hardwood sole and heel, cosily lined with warm felt. All sizes for men and women, delivered, all charges paid, ONLY

\$1.75

Higher 3 buckles \$2.25
High-legged Wellingtons \$2.75 and 3.25
Children's lace, 7's to 2's 1.25
Or if you wish to learn more about these wonderful Clogs before ordering, write to us for catalogue booklet, telling how Health Brand Clogs are made, etc., etc. Dealers, write for proposition.

CANADIAN FELT-LINED CLOG CO.,
Dept. 5, 363 Spadina Ave., Toronto, Canada

Maple Grove Yorkshires & Holsteins



Eight young boars fit for use; good, long, straight, growthy ones, and young pigs of various ages and both sexes, sired by S. H. Jack (28315) (imp.), for three years champion at Toronto. A few beautiful sows, big enough to breed. One two-year-old Holstein bull—a

show animal that has few equals—to be sold very cheaply; out of a heavy milking dam. One yearling Holstein bull, a good one, sired by Dutchland Olantha Sir Abbecker, and out of a grand young cow; also a heifer calf, just lately dropped, a beautiful, straight calf, out of the same dam; also grade heifer, calves and yearlings. All will be sold at bargain prices.

H. S. McDIARMID, Fingal, Ont.
Long-distance phone. Shedden Station.

Large White Yorkshires



Have a choice lot of sows in pig. Boars ready for service and young pigs of both sexes supplied not akin at reasonable prices. All breeding stock imported, or from imported stock from the best British herds. Write or call on

H.J. Davis, Woodstock, Ont

C. P. R. and G. T. R. Long-distance phone.

Newcastle Tamworths and Shorthorns

Present offering. Seven boars from 6 to 10 months old; boars and sow pigs 6 weeks to 4 months; sows bred and others ready to breed, from such noted stock as Colwill's Choice, Canada's champion boar, 1901, '02 '03 and '05, and Imp. Cholderton Golden Secret. Also a few choice Shorthorn heifers in calf; beef and milk combined. Show stock a specialty. Prices right. L. D. Phone A. A. COLWILL Newcastle, Ontario.

Duroc Jersey Swine AND JERSEY CATTLE.

Grand stock, either sex, constantly for sale. Price reasonable. MAC CAMPBELL & SONS, Northwood, Ontario.

TAMWORTHS A few sows bred to farrow in February and March; also choice pigs from three to five months. Bell phone. HERBERT GERMAN, St. George, Ont.

Cloverdale Berkshires—Present offering; Sows bred and others ready to breed; also younger stock of both sexes. Prices reasonable.

C. J. LANG, Hampton, Ont. Durham Co.

HAMPSHIRE SWINE

Both sexes and all ages, from imported stock. Prices reasonable.

C. A. POWELL Arva, Ontario
Four miles north of London

QUESTIONS AND ANSWERS. Miscellaneous.

DISHONORING A NOTE.

A gives B a note for a sum of money on which nothing has been paid.

1. If A signs his property over to C, can B collect the note, or can he put A to any cost?

2. Can B go to law over the note? Ontario. A SUBSCRIBER.

Ans.—1. Most likely he can.

2. Yes.

DILATORY TINSMITH.

Is it possible to collect damages from tinsmiths who have been promising to put eavestroughs on barn for over a year, and have set time at different days to come, and failed to do it, and as it has done damage to my stock and barn, I would like to know if they could be made to pay damages? N. S. Ontario.

Ans.—It is very doubtful, indeed, whether you could recover damages in an action such as is suggested. It does not appear from your statement that the agreement between the parties is sufficient for the purpose. However, the thing is possible, and it might be profitable to consult a solicitor about the matter, personally.

ALLOWANCE FOR PLOWING.

I rented a farm last fall, but do not take possession until the spring. As soon as I settled with the owner, I went out and told the man who was renting the farm to stop plowing, as I had decided to take the place. He had five acres plowed, for which he wants to charge me \$2.50 per acre. Is it right that I should pay him for it? Ontario.

Ans.—We think so—as a matter of equity if not of law. In legal strictness, it depends mainly upon the terms of the man's tenancy. If the term was uncertain—for instance, liable to be ended at any time by notice from the landlord, then the tenant would undoubtedly be entitled to be compensated for plowing done by him prior to his receipt of such notice; and this is probably this man's case.

FERTILIZERS FOR POTATOES.

1. I would like to know where to buy the complete fertilizer you prefer for potatoes. Would I have to buy each separate, and mix at home?

2. What would they cost per hundred?

3. When the potatoes are planted with the planting machine, would it require as much fertilizer? I understand it all goes right in the row with the potatoes. R. J. McR.

Ans.—1. The separate materials, sulphate of potash, acid phosphate, and nitrate of soda, for home-mixing, could be obtained from companies advertising in these columns, or from their agents.

2. The cost of these materials would be, approximately, as follows:

Sulphate of potash, \$2.60 per 100 lbs.
Acid phosphate, 90c. per 100 lbs.
Nitrate of soda, \$2.75 per 100 lbs.

The prices would vary, of course, according to the quantity purchased.

3. We are inclined to advocate broadcasting the fertilizers instead of putting them in the row with the potatoes, especially when one remembers that not only the potato crop, but succeeding crops, have to be considered in applying the fertilizers. Probably only one-half of the potash and phosphate will be taken up by the potato crop, the remainder being utilized by the following crops. Broadcasting encourages a wider root development, which means a greater feeding area, and less liability to injury from drought. If possible, broadcast the potash and phosphate on the land early in spring, and apply the nitrate of soda at the time of planting. All fertilizers require a certain amount of moisture to dissolve them, and to render them available to the plant, and, doubtless, the failure of many farmers to get results in the first season is due to the fact that they apply them too late. Very often in Ontario a dry spell sets in just after the hood crops have been seeded, and it is obvious that if fertilizers are withheld until then, the best results could not be obtained from their use in such a season. We would recommend that, if possible, a medium application of about 8 to 10 tons of barnyard manure per acre be applied also. B. L. E.

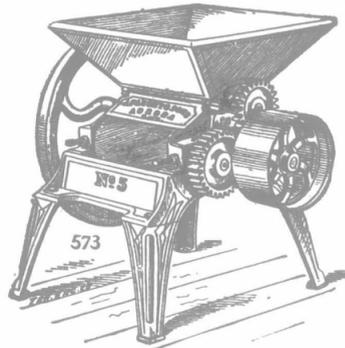
Roofing

Free Samples
Free Catalogues
Free Plans

If you are interested, send us a postcard with the word "Roofing" and your name and address -- then we will send you valuable information about your

ROOFING NEEDS

The Galt Art Metal Co. Limited
252 Stone Road, Galt, Ontario.



Why Waste Expensive Feed?

If you have FOUR or MORE HORSES you are losing—wasting—your grain if you do not crush or roll it with a

FLEURY Roller Grain Crusher

Made in various styles and sizes—Can be run by 2 H.-P. and up.

Mr. H. P. Banks, Waterville, N. S., who got a No. 2 two-roller Crusher from us in August, 1912, writes as follows:

"I am WELL PLEASSED with the ROLLER CRUSHER I got from you. It will crush 35 BUSHELS OF OATS AN HOUR with a 2 H.-P. ENGINE."

Write, stating the amount of your power, and the class of work you prefer, and we shall be pleased to advise the Crusher best suited to your purpose.

J. FLEURY'S SONS, AURORA, ONT.

Medals and Diplomas: World's Fairs, Chicago and Paris.

They Cost Less



and Last Longer

"Clay" Gates

STRONGEST and best farm gate made. 30,000 sold in 1912. Can't sag, bend or break. Can be raised as shown. Good for Winter and Summer. Send for illustrated price list.

The CANADIAN GATE CO. Ltd.
34 Morris St., GUELPH, Ont.

ELMHURST LARGE ENGLISH BERKSHIRES

Present offering: Select sows. Choice boars ready for service; also younger stock, the get of Duke of Somerset, imp., and out of imported dams. Satisfaction and safe delivery guaranteed. H. M. VANDERLIP, Breeder and Importer, CAINSVILLE P.O., Langford station, Brantford and Hamilton Radial.

BEST RESULTS ARE OBTAINED FROM ADS. IN "ADVOCATE."

If You Want Your Seed Well Planted, Buy a McCormick Drill

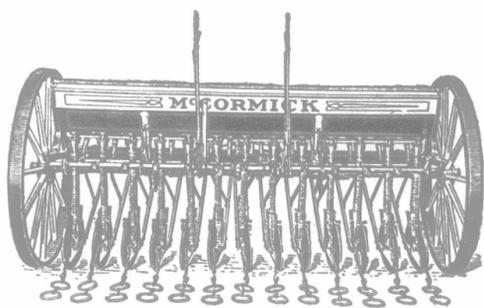
SEED that is just put into the ground and covered up is not necessarily planted. When you use a McCormick drill, you can be sure of good planting. It prepares the soil to receive the seed, sows the seed evenly without bunching or breaking kernels, and covers it to an even depth with a well-pulverized soil covering.

Use a McCormick Drill in Any Soil

A McCormick drill does good work in all conditions of soil—hard, dry, trashy, muddy, sandy, hilly, loamy, stubble, or in well-prepared seed beds. You can change it from a single disk to a double disk or a shoe drill, depending entirely on the kind of soil you must plant in.



The feed is positive in action, insuring delivery of the seed just as you want it planted. It works equally well going up hill or down, whether the hopper is full or almost empty. The feed is adjustable for different kinds and quantities of seeds by a simple and sure device.



McCormick drills have one very important feature. The disk bearings turn easily and are as nearly dust proof as it is possible to make disk bearings. Only clean oil reaches them, and that from the inside, tending to keep out all dust and grit, and keeping the bearings free-running.

The McCormick line includes drills, disk harrows, cultivators, peg and spring-tooth harrows, land rollers, etc. The I H C local agent will give you full information and supply you with catalogues. If you prefer, write the nearest I H C branch house and catalogues will be mailed to you at once.

Eastern Canadian Branches
International Harvester Company of America
(Incorporated)

At Hamilton, Ont. London, Ont. Montreal, P. Q.
Ottawa, Ont. St. John, N. B. Quebec, P. Q.

These machines are built at Hamilton, Ont.



GOVERNMENT STANDARD SEEDS

Here we are again with some splendid seeds for 1913. If you bought of us last year you know our quality, if you did not, try us now. We send our seeds under the guarantee that if they do not entirely satisfy on arrival, you may ship them back at our expense. Most of our seeds we buy direct from the farmers here who grow them.

ALFALFA.—Our home-grown seed was a failure this year, as the wet weather caused plants to send out new growth instead of seed. We have imported some specially suited to our soil and climate, which we recommend. Price, \$12.00 per bushel.

RED CLOVER.—A splendid, clean, bright sample. Price, \$15.00 per bushel.

ALSIKE.—Clean and bright. Price, \$15.00 per bushel.

O. A. G. No. 21 BARLEY.—90c. per bushel.

SILVER MINE OATS.—60c. per bushel.

SIBERIAN OATS.—60c. per bushel.

BANNER OATS.—80c. per bushel.

These prices are good till next issue. Bags extra—cotton 25c., jute 10c. Cash must accompany order. Ask for samples.

The Caledonia Milling Co., Limited
CALEDONIA, ONT.

GUNNS



FERTILIZER

ALSO
Gunn's SHUR-GAIN FEEDS
FOR STOCK and POULTRY

GUNN'S

40 years' experience behind them. Write for Price List and booklet.

Gunn's Pork and Beef Packers
WEST TORONTO

BUILT low, especially for farm use, a T-A Handy Farm Wagon saves much hard work. It is easier to load and unload, and will haul bigger loads without tiring horses, more than a small load.



T-A Wide-Tire Steel Wheels & Handy Farm Wagons

T-A Wide-Tire Steel Wheels are lighter, stronger, cheaper, and better in every way than ordinary wooden wheels. Make your old wagons new by fitting them up with these superb wheels.

Our free booklet (which please ask for), tells how you can make farm work easier and more profitable.

Tudhope-Anderson Co'y, Ltd.
Orillia, Ontario

SHYING, BALKING, KICKING a RUNAWAY

horses absolutely cured and all horses and colts thoroughly broken to obey, by the simple plans taught in a Home Study Course of instruction by Fred J. Riggs, an international horse educator and tamer. Cost is small. Results are beyond compare for particulars. Address room 22, B. B. Building, Young and Gerrard Sts., Toronto.

Talk About Simplicity!

Here are all the parts that go to make up the bowl of the

SHARPLES TUBULAR CREAM SEPARATORS

and with these three we guarantee Tubulars to skim 50% closer and to continue to skim 50% closer than any other separator made.

THIS BEING THE CASE—

Why should you have to wash up seven times this many pieces—twice a day?

That is a question that is easier to ask than to answer.

There has never a claim been made for Sharples Tubulars that could not be proven;—there has never a machine left our Factory that was not guaranteed *Forever*.

Mark that—not merely a year, or two years—or even five—but *Forever*. Look into these features before exchanging your old separator, or at the time you decide that there's money in selling the cream and keeping the skimmed milk on the Farm.

Write for our interesting Catalog 193 and arrange for a *Free test right under your own roof*. The people who ask questions are the ones who buy Tubulars.

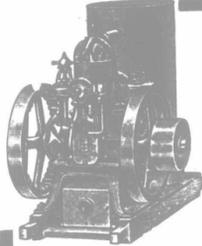
THE SHARPLES SEPARATOR CO.
TORONTO, ONT. WINNIPEG, MAN.



This Engine Runs on Coal Oil

Every farmer can afford an Ellis Coal Oil Engine. They give as much power from coal oil than other engines do from gasoline. They are safe, as well as cheap; no danger of explosion or fire.

The strongest and simplest farm engine made; only three moving parts; nothing to get out of repair. Anyone can run it without experience. Thousands of satisfied customers use these engines to grind feed, fill silos, saw wood, pump, thresh, run cream separators, and do dozens of other jobs. Cheaper than horses or hired men. Fill up the tanks and start it running, and so forth; attention is necessary; it will run till you stop it.



FREE TRIAL FOR 30 DAYS. You don't have to take our word for it. We'll send an engine anywhere in Canada on Thirty Days' Free Trial. We furnish full instructions for testing on your work. If it does not suit you send it back at our expense. We pay freight and duty to get it to you and we'll pay to get it back if you don't want it.

Absolutely guaranteed for 10 years. Write for free catalog and opinions of satisfied users. Special offer in new territory.

3 to 15 horse-power
We Pay Duty and Freight

Ellis Engine Co., 94 Mullett Street
DETROIT MICH.

Turn Minutes into Money

Make Your Spare Time Worth Money by Taking One of Our Home Study Courses. We Teach You by Mail.

Beginners' Course, Matriculation, Teachers' Examination, Civil Service, Chartered Accountancy, Commercial Specialist, Complete Commercial, Shorthand and Typewriting, Advertising, Journalism, Special English, Elementary Art, Mechanical Drawing, Architectural Drawing, Engineering (Stationary, Traction, Gasoline, Marine, Locomotive, Automobile), Agriculture, Stock Raising, Poultry Raising. Ask for anything that interests you.

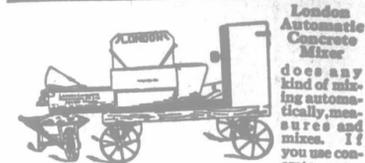
Canadian Correspondence College, Limited,
Dept. E, Toronto, Canada.

NEW TERM

now open. Students may enter any time. If you are interested in "Education That Pays" you should write to-day for a copy of our latest catalogue.

BRITISH AMERICAN BUSINESS COLLEGE

Y.M.C.A. Building, Toronto.
T. M. WATSON, Principal



better write us for price of this machine. We have the largest line of concrete machinery of any firm in the world. Tell us your requirements. London Concrete Machinery Co., Dept. B., London, Ont.

HACKNEY AUTO - PLOW

"The Great One-Man Outfit" The only "One-Man" Machine on the market that can be used successfully for plowing, seeding, harvesting, threshing, as a tractor for hauling loads, road grader, and as a stationary engine for all power purposes. Send for illustrated catalogue and testimonials.

HACKNEY MANUFACTURING CO.
618 Prior Ave. St. Paul, Minn.

SEED CORN—First-class Essex-grown seed corn. Apply for varieties and prices: WALTER G. ANDERSON, Malden Centre P.O., Essex, Ont.

An up-to-date **SILO OUTFIT** For four-ring Sale. Capable of building 10 feet per day. Apply to: EPH. DUNSMORE, Box 275, Stratford, Ont.

Important NOTICE TO FARMERS.—A post card mailed to us will afford you valuable information as to what to do in the event of FIRE. Our information will protect you from heavy losses. Dominion Chemical Bureau, Birk's Bldg., Montreal, Canada.

MODERN FARMING

Cultivate! More Crop—Less Weeds

THERE are two important reasons why you should cultivate your crops always. Cultivation kills weeds. Not only are weeds and thistles useless, but they rob the crop of moisture. To prove this, some day next June or July, in dry weather, go to your cornfield and note how damp the ground is only an inch or two below the surface in clean ground. Your corn gets the moisture. Nearby, where thistles or weeds are growing, earth at the same depth will be nearly dry. Kill weeds and your crop benefits. It pays.

Cultivation "mulches" the soil surface, so it absorbs rain, and prevents loss of water by evaporation. To test this, note a spot in dry weather where the soil is "crusted". It is dry beneath. Compare the soil beneath a mulched surface. It is moist. Cultivation pays. It conserves moisture for Crop growth.

To permanently rid land of weeds their roots must be destroyed. The "Climax" is the only Cultivator on the market that has sufficient strength to go down and rip out the weeds, roots and all, and bring them to the surface to be dried out and burned. Narrow points are used for this. Wide ones for thistle cutting supplied as well. Wide points overlap, so not an inch of ground is missed.

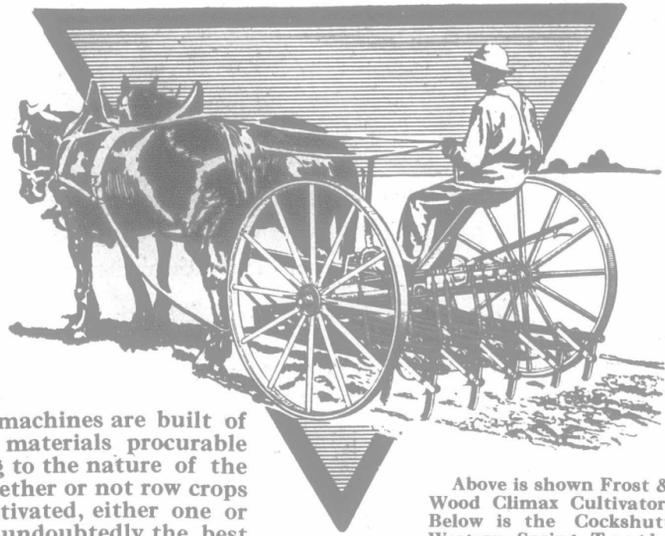
Owing to the steel frame, riveted in every part, these points are always right for years of use. The bars cannot spring out of alignment.

Our "New Spring Tooth Cultivator" is also made of steel throughout. It is built primarily for row cultivation but by adding the centre section, makes a fine field cultivator. Wide and narrow points are sent with each implement. Stiff legs in place of the Spring Teeth can be supplied if ordered. For harvesting beans we make an attachment for our Western Spring Tooth Cultivator. Either of these machines will solve the cultivation problem. By consistent cultivation the dirtiest land can be cleaned perfectly in a year or two. Write us for full details and plan now for the cultivator you are going to use this year. Let us send you our booklet illustrating them.

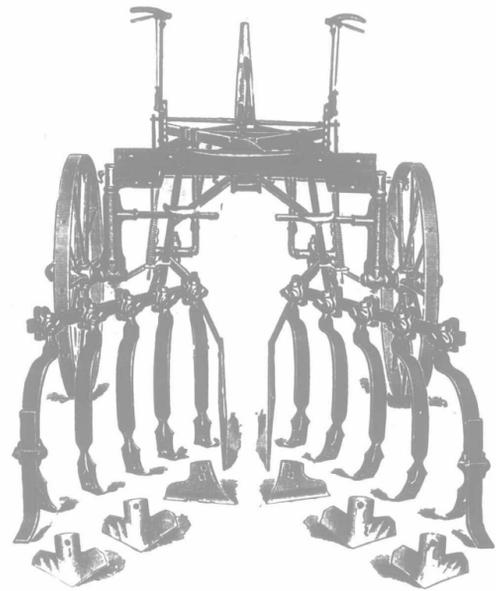
Write us for information regarding any Farm Machinery or Implement of any kind which you may need. See our Agent. He has a full line.

Sold in Western Ontario and Western Canada by
COCKSHUTT PLOW CO., Limited
 Brantford, Ont.

Sold in Eastern Ontario, Quebec and the Maritime Provinces by
The FROST & WOOD CO., Limited
 Smith's Falls, Ont.



Above is shown Frost & Wood Climax Cultivator. Below is the Cockshutt Western Spring Tooth, adapted for either Field or Row Crop Cultivation—two machines in one.



IMPLEMENTS OF QUALITY