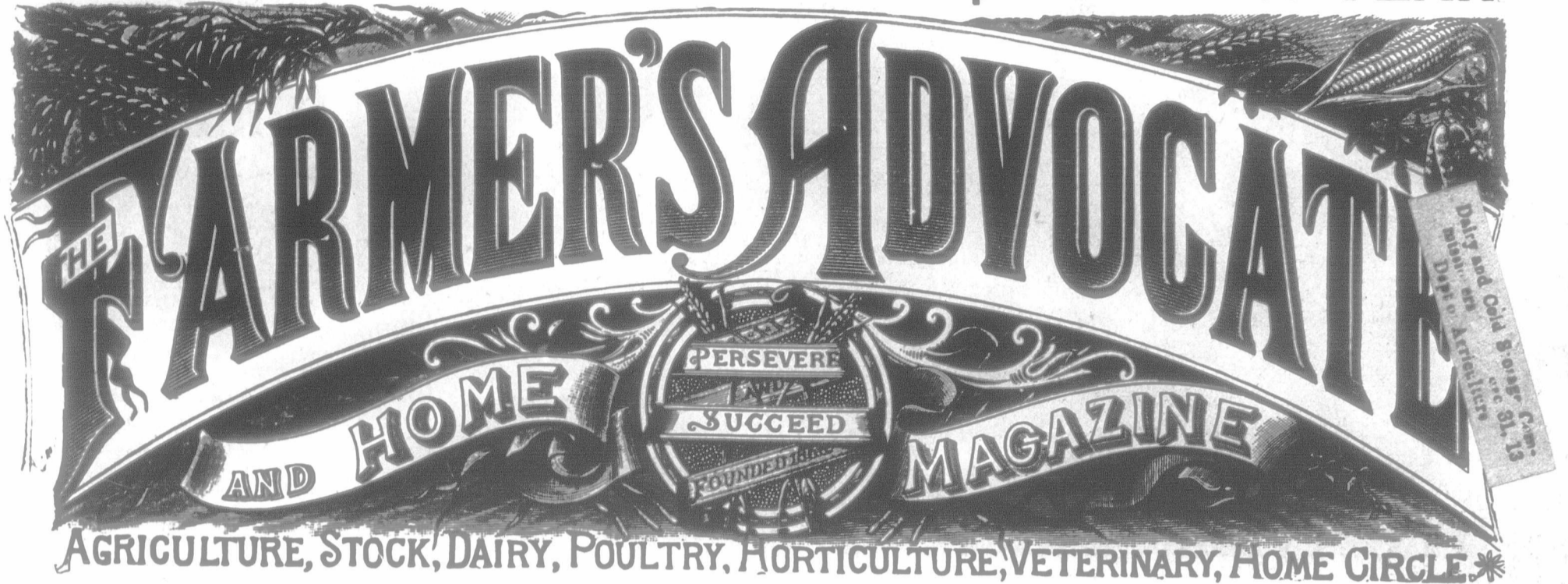


Dr. Maria Montessori

PUBLISHED EVERY WEEK. \$1.50 PER YEAR



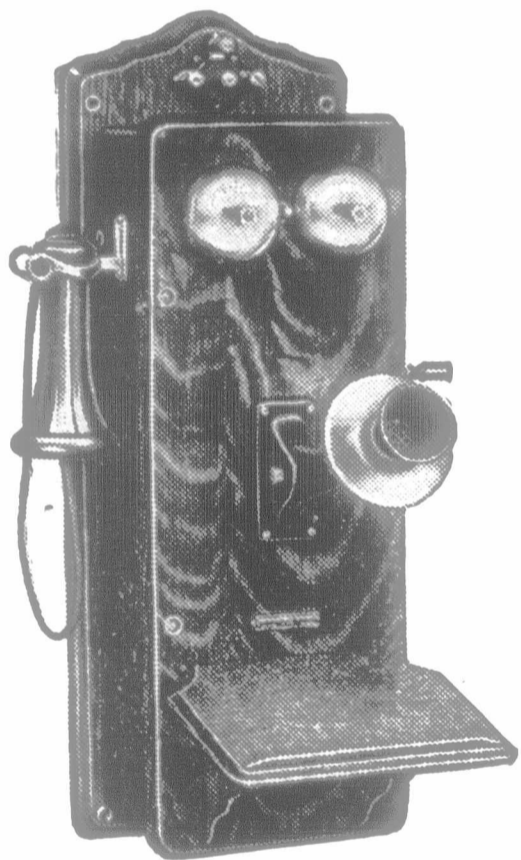
AGRICULTURE, STOCK, DAIRY, POULTRY, HORTICULTURE, VETERINARY, HOME CIRCLE

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VOL. XLIX.

LONDON, ONTARIO, JANUARY 15, 1914.

No. 1085

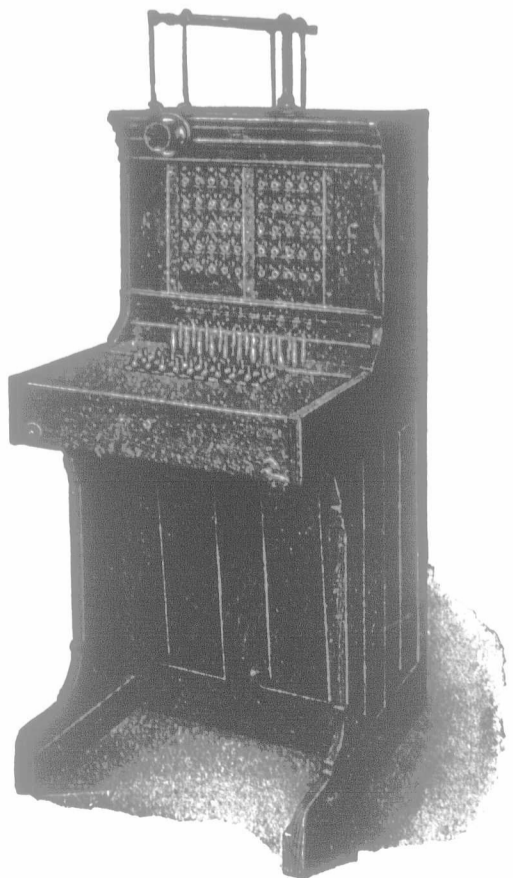


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The Most Up-to-date Switchboard Made.

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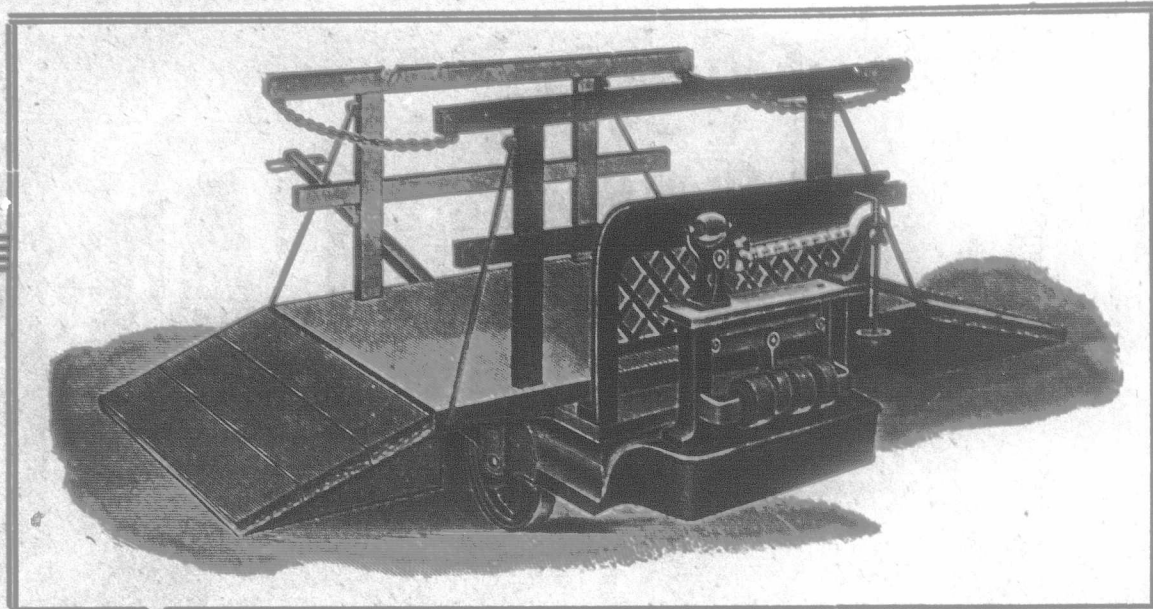
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Aylmer Scale is the only 3-point bearing scale on the market.

The only scale that will weigh correctly on an uneven surface.

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All material and workmanship are first-class and guaranteed.

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Effective Rolling--the Only Kind That Pays!

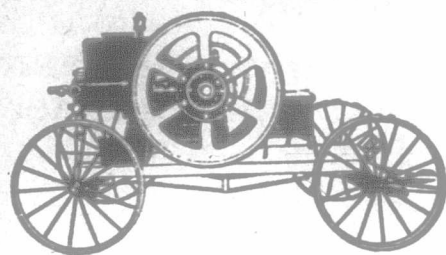
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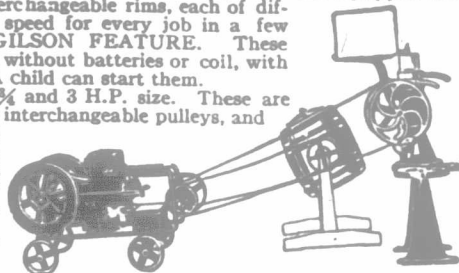
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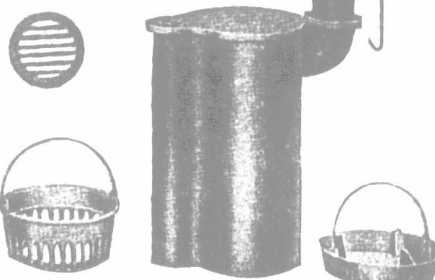
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Order right away and get full benefit this winter.

Catalogue of "BAKER" Windmills, Tanks, Pumps, etc., sent on request.

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Additional classes, also increased and extended prizes for Horses, Beef Cattle, Dairy Cattle, Sheep, Swine, Dressed Carcasses, Seeds and Poultry.

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A series of lectures dealing with important and practical agricultural subjects will be conducted. These lectures will deal with live stock, field crops, seeds and poultry.

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Time Table Changes

A general change of time will be made January 4th, 1914. Time tables containing full particulars may be had on application to Grand Trunk agents.

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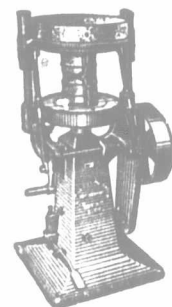
IMPORTANT CHANGE IN TRAIN SERVICE

Train No. 27, now leaving Toronto 8.45 p.m. daily, arriving Sudbury 5.55 a.m. will be discontinued between Toronto and Sudbury after Saturday, January 3, 1914.

Train No. 28, now leaving Sudbury 10.45 p.m. daily, arriving Toronto, 8.00 a.m., will be discontinued between Sudbury and Toronto after Sunday, January 4, 1914.

Toronto-North Bay sleeping car will be discontinued with this service.

Toronto-Sault Ste. Marie sleeping car will be handled Toronto to Sudbury on train No. 3, leaving Toronto 10.20 p.m. daily, and Sudbury to Sault Ste. Marie, Ont., on train No. 27, arriving Sault Ste. Marie, Ont., 1.12 p.m. (Eastern Time), and Sault Ste. Marie, Mich., 12.40 p.m. (Central Time). Sault Ste. Marie-Toronto sleeping car will be handled Sault Ste. Marie to Sudbury on train No. 28, leaving Sault Ste. Marie, Mich., 2.30 p.m. daily (Central Time), and Sault Ste. Marie, Ont., 3.50 p.m. (Eastern Time), and from Sudbury to Toronto on train No. 8, arriving Toronto 9.00 a.m. Full particulars from any C.P.R. Agent, or write M. G. Murphy, District Passenger Agent, Toronto.



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Makes all sizes of tile from 3 to 16 inches. Cement Drain Tile are here to stay. Large profits in the business. If interested, send for catalogue.

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Largest manufacturers of Concrete Machinery in Canada


Dr. Maria Montessori



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Guaranteed Fencing**

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Ready Roofing

Armed with "Nature's everlasting waterproofer" Genasco is ready to combat rain, snow, hail, wind, sun, heat, cold, and fire and to defend your roof with its resisting, lasting life, and keep it weather-tight. Genasco smooth-surface roofing is supplied with patented **Kant-leak** Kleets, which make seams waterproof without cement, and prevent nail leaks.

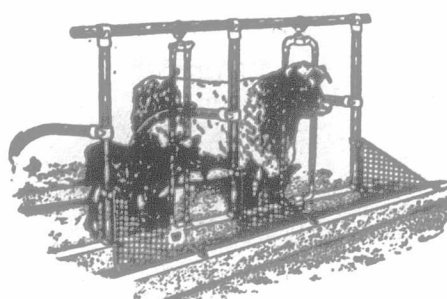
Ask your dealer for Genasco. Guaranteed. Smooth or mineral surface. Write us for samples and the Good Roof Guide Book.

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Largest producers in the world of asphalt and ready roofing

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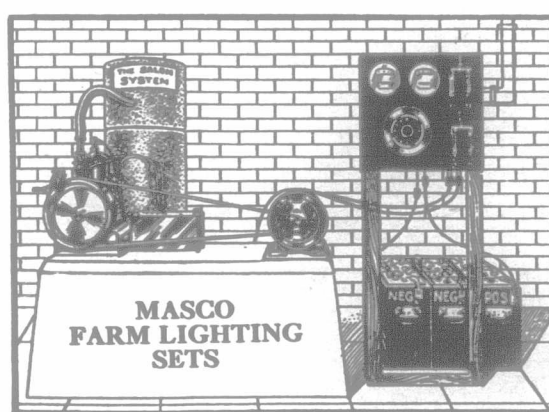


WHEN you equip your stables, make sure that you get my SUPERIOR fittings. Send for my big free book. I want you to know about my SUPERIOR ADJUSTABLE STANCHION, that you can adjust to tie from a calf to the largest steer in your stable, and my six other designs of stanchions, cow stalls, cow pens, calf stanchions and pens, water bowls, horse stalls and horse stall fittings. My SUPERIOR Sanitary Steel Stable Fixtures are the most modern made, and do not cost any more than the ordinary kind. Ask your agent about SUPERIOR STABLE EQUIPMENT.

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are built for this purpose. They are simple—dependable—and economical. We supply all material to suit your conditions; and will install same if desired.

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Less than two months afterwards the daily newspapers recorded the tragic story of the younger man's accidental death. His failure to act when action was possible deprives his family of the insurance money which he could have secured to them so easily.

Have you made any provision for your wife and little ones in case you should die suddenly? An Imperial Home Protection Policy will do it. Write for particulars to-day; tomorrow may be too late.

THE IMPERIAL LIFE Assurance Co. of Canada
Head Office, Toronto
Branches and Agents in all important centres

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This book shows you how to build your barn from start to finish. Tells how to lay the floors and walls. Describes the latest system of framing that saves a great deal over ordinary methods. Illustrated by views of modern barns and many blue prints.

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When Writing Advertisers Mention "The Advocate."

Planet Jr



No. 3 Planet Jr Hill and Drill Seeder

Sows all garden seed accurately in hills and drills. Sows in a narrow line making wheel hoe cultivation quick and easy. Sows in hills 4, 6, 8, 12 or 24 inches apart. The seed index, graduated for both hills and drills, is always in plain view.



No. 11 Planet Jr Double Wheel Hoe, Cultivator, Plow and Rake


The greatest cultivating tool in the world for the grower of garden crops from drilled seed. The plow opens furrows for manure, seed, etc., and can be reversed for covering. The cultivating teeth are adapted for deep or shallow work and for marking out. Crops can be worked both sides at once until 20 inches high.

Planet Jr Farm and Garden Implements cut down the cost of cultivation, lighten labor, and give better results. \$2 to \$100, according to requirement. Fully guaranteed.

FREE Our new 73-page illustrated catalogue describing 60 implements for all kinds of cultivation. Write for it today.

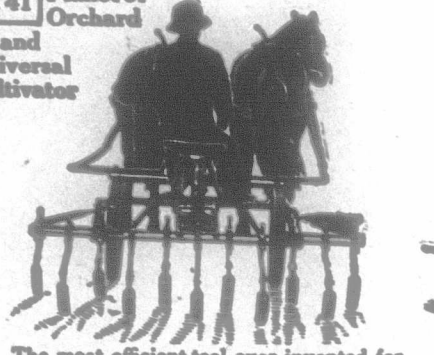
S. L. ALLEN & CO
Box 1108F Philadelphia

Write for the name of our nearest agency




No. 4 Planet Jr Combined Hill and Drill Seeder, Wheel Hoe, Cultivator and Plow

This is a practical every day time, labor- and money-saver for the woman in tending her vegetable garden as well as for the market-gardener. It combines in a single implement a capital seeder, an admirable single wheel hoe, furrower, wheel cultivator, and a rapid and efficient wheel garden plow. Sows all garden seeds in drills or in hills.



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An invaluable tool in the market-garden, truck and strawberry patches. Its 12 chisel-shaped teeth cut out all weeds, stir and mellow the soil and leave the ground in the finest condition without throwing dirt on plants. Can be set exactly to desired depth making delicate work easy.

Aylmer Superior Lever Force Pump

For Hand and Windmill use. Has Six Eight, and Ten-inch Stroke. Adjustable Base.




Fig. 36. Fig 36 represents our Superior Lever Pump, fitted for hand and windmill use. Made in 1 1/2 and 2-inch.

This style of lever and fulcrum has several advantages over the ordinary style; having longer stroke the power is greater, making it work easier. The handle being wood, they are not so liable to break in frosty weather.

The base is adjustable admitting of top being raised or lowered to any position desired.


The handle is drilled for three lengths of stroke. Six, eight, and ten-inch stroke.

This is readily converted into a Windmill Pump by the addition of a flat bar, which screws into the cross-head on top.


Cylinders capped inside require to be two inches longer to obtain same stroke.

This pump is adopted for all depths of wells; furnished with Iron, Brass Body or Brass Lined Cylinder. You'll never regret placing one of these pumps on your farm. Write us to-day for prices and illustrated catalogue free.

Aylmer Pump & Scale Co.,
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Made it Productive

Write us about arranging demonstrations, also for our free booklet; it tells you how the above facts were accomplished.

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Crop Producers—Soil Builders.
A fair trial will prove

"It Pays to Use Them"

Live agents wanted everywhere.

Swift Canadian Co. Limited
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10 Days FREE—Send No Money



We don't ask you to pay us a cent until you have used this wonderful modern light in your own home for ten days, then you may return it at our expense if not perfectly satisfied. We want you to prove for yourself that it gives five to fifteen times as much light as the ordinary oil lamp; beats electric, gasoline or acetylene. Lights and is put out just like the old oil lamp;

BURNS 70 HOURS ON 1 GALLON OIL

Gives a powerful white light, burns common coal oil (kerosene), no odor, smoke or noise, simple, clean, won't explode. Guaranteed.

\$1000.00 Reward

will be given to the person who shows us an oil lamp equal to this Aladdin in every way (details of offer given in our circular). Would we dare make such a challenge to the world if there was the slightest doubt as to the merits of the Aladdin? We want one person in each locality to whom we can refer customers. Write quick for our 10 Day Absolutely Free Trial Proposition, Agents' Wholesale Prices, and learn how to get ONE FREE.

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AGENTS WANTED

to demonstrate in territory where oil lamps are in use. Experience unnecessary. Many agents average five sales a day and make \$300.00 per month. One farmer cleared over \$200.00 in 6 weeks. You can make money evenings and spare time. Write quick for territory and sample.

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If you intend planting trees next spring, be particular of the kind and grades you order, be sure they are grown right, are healthy, clean and backed by a dependable and reliable company. E. D. Smith's trees are grown from stock known to be true to name, and produced on the choicest land in the Niagara fruit belt. The Nurseries (900 acres) have been inspected thoroughly by government inspectors, and pronounced free from injurious pests, so that we are able to guarantee our stock "absolutely clean and healthy." This stock costs no more than inferior, poorly grown trees of doubtful parentage. If you are not familiar with the best varieties for your section, will be pleased to assist you, and any assistance from us will cost absolutely nothing, and does not place the writer under any obligation to purchase.

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WINONA :: :: ONTARIO

Better Butter— Bigger Profits!



If you wish your butter to be smooth and uniform, use the

"BRITISH" Butter Worker

Adopted by the best dairies in Gt. Britain and Canada. Makes the butter firm—even consistent all through. Results in better butter and bigger profits!

Sold by dealers everywhere. Three sizes—14 in., 17 in. and 20 in. wide.

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—gives a bright, powerful light instantly,—just press the button. Compact, handy and safe. Four times as strong as any other and can be recharged for a trifle. Can't explode. The baby can handle it. Safe in a powder keg.

Mail your order to-day —to—
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If you want a copy of the Rennie Canadian Seed Catalogue, address Rennie's Seeds, cor. Adelaide and Jarvis Streets, Toronto.

Dr. Maria Montessori

The Farmer's Advocate and Home Magazine

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Vol. XLIX.

LONDON, ONTARIO, JANUARY 15, 1914.

No 1085

EDITORIAL

Get out of the old rut of average effort and average returns.

Nothing is more valuable to the feeder than early maturity.

Who will be next with a remedy for the scarcity of beef cattle?

Sell the beef cattle at the earliest age possible, but finish them first.

The man who is satisfied with average yields is not improving his opportunity as he should.

The products of the farm are not produced at small cost as many people imagine.

Have you arranged for the seed for next spring's seeding? Buy early and avoid the rush.

The right kind of female in the beef cattle herd is a little gold mine on the farm. Operate it yourself.

The United States has made a success of Parcels Post in one year; Canada is beginning what should prove even a more successful system.

If it costs over \$12.00 to grow and thresh an acre of oats, where is the profit in it for the man who produces an average yield of 36 bushels?

Judging from letters received on stallion enrolment and inspection, the Act will have to be very carefully amended to meet the wishes of all stallioners.

The man who would save all the scrub calves and feed them until three years of age for beef would need to have some other business to make the money to support his beef-making experiment.

The fruit-tree agent works overtime at this season. Do not let highly-colored plates and word pictures of new, untried varieties dazzle your eyes and dim the lustre of the proven standard kinds.

The commission is investigating, but the cost of living remains high. When they settle upon the cause it will likely be so colossal that removal is impossible under existing conditions.

There may be a danger of over-production of apples, but the man who is sure to feel the pinch first is the one who produces fruit of the common order. Remember this when selecting varieties for next spring's planting, and do not forget it when the time for pruning, spraying and cultivating arrives.

The employees, down to the floor sweepers, of a famous automobile firm are, during this year of grace 1914, receiving a bonus of \$10,000,000 in addition to their wages. The amount happens to be the same as the Dominion Government are distributing in ten years for the furtherance of Canadian farming.

Is Over-production of Fruit Impending?

Where demand precedes supply it is comparatively easy to establish an industry that will cater to that market, but where the public must be educated to a desire for a certain commodity the enterprise which produces the article is built up under difficulties but at maturity it is a stronger institution than the pampered child of economic necessities. In the former case, conditions derogatory to the business are overlooked in the summertime of the industry's prosperity, but when the stern blasts of chilly competition must be encountered, then the promoters realize the conditions of the unpaved road over which they have travelled and set about to reconstruct and repair the numerous ruts with fear and trembling at heart. On the other hand, the pioneer institution that has blazed its way into the forest of indifferent demand must look to it that every trail is firm and in the right direction. It must be double tracked, as it were, in order to meet adversity coming in either direction. Canada's fruit industry is an example of the easy growth of an enterprise favored by economic conditions.

In the minds of some growers, over-production is close at hand, but the cry of Wolf! Wolf! has been heard throughout the land on many former occasions. Almost two decades ago Nova Scotians, with very little encouragement, would have removed their orchards root and branch when commission houses in London, England, requested a remittance of money to cover expenses on various consignments of fruit. However, during the last season Kings sold for \$4.00, while Blenheims and other varieties sold for \$3.00.

There is nothing that will hasten over-production more than a tardy or inefficient distribution. Unjust expense is also a heavy contributor to this undesired end, while fruit, unmarketable in closed containers, is constantly being dumped upon the local market in bags, boxes and open baskets. This in itself is legitimate but unjust, for the producer of cared-for fruit must seek his market in other Provinces or other countries. Furthermore, the wayside trash that is collected in the autumn and deposited in the nearest town helps to bring down the price, even if it does not displace altogether the number one or number two on the local market. When the grower sets out to invade other markets, what obstacles does he meet? Delays in supplying cars, rough handling, lack of shelters, pilferage, neglect in icing cars or attending heaters, according to season, and certain privileges that are accorded to shippers of other commodities, but not of fruit. Again, a difference of a few miles makes a difference of over one dollar in express charges, simply because that receiving station happens not to be in a certain block. In addition to this there is the unorganized competitive methods of distribution on the part of the growers, resulting in glutting and starving nearby markets at the same time. Add to these obstacles the necessity of picking, packing and forwarding practically all the output in about two and one-half months, and you have assembled a few of the conditions that make a barrel of apples, valued at \$3.00 in the orchard, worth \$8.00 in the center of Saskatchewan. It is over-valuation, not over-production, that will impede

the industry, and citrus fruits and bananas have already usurped the place of the apple on many Canadian tables on account of their presentable appearance and honest valuation.

The growers of the Maritime Provinces are situated that only the early fall fruit must go forward at once, while the later varieties may be packed and shipped during the less busy winter days. Quebec and Ontario might profit by a storage at home or a distributing warehouse in the West. The idea is beneficial in the East, and apples can be produced and marketed there cheaper than in any other Province. Diseases and insects, especially San Jose scale, will tend to relegate the uncared-for orchards to the wood pile and by so doing relieve the market of much fruit grown under negligent conditions. This in turn will leave a firmer market for the product of the healthy, cared-for orchards. "The market" has a broader significance to the fruit grower than it had five years ago, for now South America, South Africa and the West Indies are being introduced to Canadian fruit. Apparently, the Maritime Provinces can market fruit in Johannesburg as cheaply as Ontario can lay her apples down in the West. Three dollars or three and a quarter will sell a barrel of apples in Johannesburg, while many sell for \$2.75 and \$3.00 in Ontario, only to be resold for \$6.00 or \$7.00 in the West. The cost of marketing in the Prairie Provinces is entirely too high and when transportation and selling are so systematized that the consumer can purchase a good barrel for \$5.00, and dealer, transportation companies and grower get a just share, then there will be a demand corresponding with the increasing production. Ostensibly railroads and commission men have looked upon shipments of apples as a hobby of some eccentric gardener who wishes to bestow a dainty upon a relative or friend and think themselves justified in giving it negligent treatment and exacting any charge they see fit. This was most apparent when loading steamers in the early days of the business. Then it was not uncommon to have the barrels crushed into place with long iron crowbars, and even yet a box of cigars with the lid off is necessary to get the loaders to handle the fruit as it should be handled.

Growers of the Western States were able to lay their apples down in Vancouver at 95 cents a box, including transportation tariff and the like, and out of that they received 45 cents for growing and packing. This in itself proves there must be methods known to those growers that are not in vogue in Ontario at least. Only recently reports of dissatisfaction came back from the West and they were directed towards leading Ontario growers. Unimpeachable conduct on the part of growers and packers has been the cornerstone of all success and at no time in the history of the apple industry was it more necessary than now.

Only the most foolhardy will ignore the immense acreages soon to come into bearing and the effect they must have on the markets of the world. Yet in opposition to this there is still a vast population in Canada our apples do not reach, there are new countries and new peoples open for business, there is room for much improvement in our systems of distribution, marketing can be transacted at a lower figure to producer and consumer, educational campaigns would displace other fruits and luxuries on the

The Farmer's Advocate AND HOME MAGAZINE

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

PUBLISHED WEEKLY BY
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JOHN WELD, MANAGER.

Agents for "The Farmer's Advocate and Home Journal,"
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consumer's table and enthrone the apple in its place, economic and natural conditions are at work that will maintain an equilibrium between supply and demand, and altogether they put to rout the forces of fear hovering over the production of fruit in Canada.

Parcels Post Proved Practicable.

It should be reassuring news to our postal authorities, and in fact to Canada's entire population to know that after a year's thorough trial of Parcels Post, the United States Government has this year increased the scope of the work immensely. With the beginning of 1914 the United States commenced handling parcels of 50 pounds weight within the first two zones or a 150-mile radius, and parcels up to 20 pounds in weight over the entire system. An increase from the eleven-pound limit to twenty pounds in a twelve-month proves conclusively that Parcels Post is practicable. To those who claim that facilities for handling the increased amount of mail matter in Canada, which is sure to result when the Parcels Post law comes into effect, are inadequate what the United States has accomplished stands as a rebuke. There are those who claim that even a nine-pound limit demoralizes our postal system, and some who are not wholly convinced as to the value of Parcels Post maintain that covering only small parcels as it does, it will give the express companies an opportunity to place exorbitant rates on parcels too large or too heavy for postal transport. This latter cannot be. Our efficient and aggressive Railway Commission and the public standing behind them can and will attend to this, and the fact also remains that the bulk of the parcel traffic through the post offices is in parcels of from one to two pounds in weight. Nevertheless the fact that the United States postal system has so thoroughly assimilated the large amount of Parcels Post business, it has in one year and has almost doubled the size of parcels at the end of that time, and has also been able to show an immense profit on the undertaking,

is ample assurance of success in Canada, and many instead of bemoaning the lot of the mail carrier advocate an increase in his salary with the extra work involved, and also starting the system with the largest weight limit of parcels practicable.

The Beef Question.

Through low prices and high "The Farmer's Advocate" has stood behind the policy of finishing the beef cattle before allowing them to leave the farm, but finishing does not imply that steers should be fed until three or four years of age as was common practice in days gone by. Not at all. Baby beef under eighteen months of age may be highly finished, in fact often shows much better finish than an older animal, although the latter may be well covered with choice flesh and ready for export. Feeders through years of experience have found that as a general thing the younger they can turn their cattle into finished beef after they have passed the veal stage the greater their net returns. The young animal makes more rapid gains and usually in these days when finished commands the highest market price. Just recently we heard of two yearling steers being sold for 12c. per pound live weight and they brought their feeder as much as fairly good three-year-olds would have done. They were well finished and the man that sells such a finished product in abundance is no soil robber.

The draining our country has had of beef cattle of all kinds and descriptions since the removal of the United States tariff has caused a great deal of comment upon its probable effect on the farms of Canada. True it is that a great many stockers and feeders have journeyed south to the green hills of Pennsylvania and Vermont and to the full cribs of the corn-growing States. If the farms from which they come produce feed in sufficient quantity to finish the cattle raised such a policy will prove disastrous, but in advising feeders to thoroughly finish their cattle we could not go so far as to state, as a writer did recently, that all beef cattle should be retained in Canada until three years of age, a policy which it was claimed would mean additional untold millions in profits to our farmers. Feeders have been looking for the early-maturing animal and breeders have been breeding with that end in view. They know that a young animal makes the most economical use of food consumed and that a young calf will sometimes make gains in weight as rapidly as will a fattening steer ten or twelve times its weight. Of course, the calf consumes far more food in proportion to bodily weight than the steer, but as it grows the quantity of feed consumed per day increases and while the proportion in relation to bodily weight decreases the daily increase in live weight grows less. This is with the growing animal. Under average conditions it is not advisable to keep feeding cattle on a maintenance ration. The point at which feeders aim then is to get weight and finish together and get the animal off their hands at the earliest possible age. The steer is fed well from birth and many of the choicest beeves that leave the farms of to-day are on the block before they are thirty months of age, and many of them are around eighteen months to two years old. A steer or heifer at this age properly bred and properly fed and finished is what the butcher is looking for. The choice cuts out of these are bought at the top price on the market and the man who feeds them and sells them in prime finish is not robbing his soil, but can with a judicious use of a cropping rotation and the manure made build up his place. There are thousands of acres of rough land in Canada upon which cattle may be grazed and from which our own feeders should be able to purchase good feeding cattle, but the bulk of our farmers could profitably raise more calves than they have been doing during recent years.

We would not advise, as has been done, the raising of every calf of the dairy breeds for beef purposes. Many such calves would not grow into steers, worth anything for feeding purposes in three years, which is one year longer than the span of life conceded by many to the beef animal.

Conditions cannot be remedied by wholesale foolhardiness. Many dairymen use a scrub bull for no other purpose than simply to begin new lactation periods for the cows in their herds. Of what use would such calves be to a man in the business of producing beef? True it is that many a good calf has been "knocked in the head" or has been sold for veal, and present prices of beef should soon put a stop to this.

Neither is there any remedy in breeding all kinds of cull and scrub females. Every calf from such is raised and fed at a loss. What should be stopped, however, is the depletion of the good females caused by the high prices now offered. The man who keeps the poor individuals and sells the choicer heifers is on the broad road to failure, while he who sells his culls and retains the best stock is on the surest way to success.

We are promised on all sides that beef is to be high in price for years to come, but it is not going to be so high that any old scrub of a cow mated with the poorest class of mongrel bull will produce a calf which, fed on high-priced grain and roughage and by high-priced labor, will yield a profit for the producer. The aim of the breeder and feeder of beef cattle must now and ever be to produce the very best quality of animal possible and to finish that animal at the earliest possible age at which good beef may be finished and the only sure path to this success in high prices as well as in periods of market depression is to cull the herd, retain the biggest, smoothest and best females, use on them a bull of good beef type and quality and thus produce early-maturing, comparatively easy-feeding steers and heifers to be marketed at the earliest possible age, not as scrub stockers or feeders, but as finished beef fit to go on the tables of the laboring man or the millionaire, and for which the demand is sure.

All this talk about prohibiting the slaughter of females, about keeping all cattle to a certain age and retaining all dairy calves for feeding purposes is twaddle to the ear of the practical feeder, who knows by experience that scrub cattle and long-drawn-out feeding periods do not increase his bank account. The farm must have good cattle and it must finish them or both cattle and farm will soon be rated in the poor class. Breed right, feed right and finish early.

Yields and Profits.

Not infrequently someone is heard to remark that there is no money in growing oats. From the results of an acre-plot competition, some details of which were published in last week's "Farmer's Advocate", we would not hesitate in saying that the average crop of oats yields a small return. According to statistics the average yield per acre of oats for the past ten years in Ontario has been 36.6 bushels. One of the competitors who, by the way, was the winner in his county (Glengarry) grew 57 bushels of oats on an acre at a cost, including rent of land, of \$17.10. These oats were valued at 34 cents per bushel (a fair market price), and his profit was only \$2.28 per acre. But had he only grown an average crop of a little over 36 bushels per acre his would have been a loss, as the crop would only have been worth \$12.44, a loss of \$4.66. But you say his cost of production was high. True, he put on seven loads of manure per acre, but had he not done so what would have been his yield? Without extra effort it might have run even below average, and, at the average cost of production, would likely still have been grown at a loss. The average cost of producing an acre of oats, taking into consideration the winners in the six counties in the competition, was \$12.40, which just about balances what an average crop of oats, according to figures covering the past ten years, would be worth at 34 cents per bushel, which is slightly more than the grower in some years gets for the crop if sold off in the raw state. If the man who grows the average crop only breaks even, where does the man who gets the smaller than average crop land? Who would rise up and say that the oat grower gets too much for his product?

There are other points to be gleaned from the report of the competition in question however. Again is it emphasized that the good farmer gets highest returns. Fifty-seven bushels of oats per acre was the smallest yield amongst the winners, and 89 the highest. These yields are much higher than the average of 36.6. The same thing held true in other crops in the competition. Potatoes average in Ontario 113 bushels per acre, yet 427½ bushels were produced

Dr. Maria Montessori

by one competitor, and three others were over 250 bushels per acre, while the lowest yield was 180 bushels. Corn, for silage, yielded in competition 19½ tons, the lowest yield being 15 tons, whereas the average for Ontario is 11.56 tons. The ten-year average for barley in Ontario is 30.5 bushels, whereas the two leading competitors produced 55 and 56 bushels respectively. No doubt but these boys did their best to produce large yields, but their results compared with the average prove conclusively that larger yields are possible and profitable. And yet there is a limit to profitable production. The competitor who made a profit of only \$2.28 might not have had to go much farther in expense to have showed the balance on the wrong side of the sheet, and we heard of one competitor who produced seed corn at a distinct loss. What must we conclude? It is plain that at average production and average prices grain growing for sale, especially oats, is not a get-rich-quick business; it is equally prominent that the average production of our acres is not as high as it should be, but with this we must bear in mind that increase of yield can be carried beyond the point of profit. And yet these results bear out what Dr. C. A. Cline emphasized in a recent issue of this paper in reference to dairying, that the profit lies in getting out of the rut of average production.

Civilization.

Not long ago a traveller from Fort William to Detroit was jostled back and forth on the ferry from Detroit to Windsor, and rejected on both sides by the immigration officers. When the novelty of the free and frequent steamer trips had waned and he became enraged at the conduct of the officers, he was incarcerated to be tried for insanity. If he were tried on the American side no doubt he could easily be convicted, for they have wonderfully developed machinery for proving insanity in their subjects. It is hard sometimes to conceive where the line might be drawn, and if the mechanism were encouraged to its fullest capacity it might even convict the prosecutors themselves, which in turn would prove all their convicts clothed and in their right mind, but this is apart from the theme of this discourse. This unfortunate voyager was in search of work, and his misfortunes awakening the sympathy of a leading periodical led them to ask, "are we civilized"? It also used this itinerant as a mouthpiece to suggest that some form of labor should be provided for the individual who might be seeking work and could not find it.

Any such inauguration would at once inscribe "over civilization" above the portals of our country. It is nature's plan that the weaklings should cease to exist before they people the earth with their own kind. It is enough that the iniquity of the fathers should be visited upon the children unto the third and fourth generation, and let it be confined to the progeny of those who have sinned without burdening a moral and progressive generation with encumbrances that will only increase and necessitate an enlargement of the system that was put into vogue to preserve them. It is right and just to provide for them that are the unfortunate offspring of unwise parents. Many are born blind, crippled, weak and diseased and are innocent of any transgression. They might be assisted through the vicissitudes of a hardened world which could rest assured that their demise would terminate the line of undesirables. At the same time it is unfair to burden the state with proteges who have luxuriated during the sunny months and years of prosperity only to seek assistance from the provident brother when periods of depression come upon us. Furthermore this wayfaring man was seeking work in a most unlikely place. Why must he migrate to a center teeming with thousands of laborers and a community which must naturally be first affected by any depression in economic conditions? The country has long been calling for help, and yet would receive with open arms a laborer willing to work and share the lot of some of Canada's most healthy, prosperous and respected citizens. Yet this man hies at once to a congested center and rebukes, perhaps, civilization because it does not establish a "sit" for him at his bidding.

Licentiousness and ease have caused the downfall of more than one of the world's nations, and any tendency in the direction of fostering negligence and lack of competition will at once stamp, not civilization, but over civilization on the state, and decrease the ambition, self initiative, provident nature and progressiveness of our countrymen. The time is not yet here when work must be provided by the state. There is work in God's open country. Go work in the vineyard.

The man who takes a pride in "doing chores well" usually has sleek stock and clean stables, and realizes as great a profit from his everyday choring as from any other branch of his yearly farm operations. Chores are too important to be slighted.

Nature's Diary.

By A. B. Klugh, M.A.

Dew and clouds are both formed by the same process—condensation. This process depends upon a decrease in temperature, for, as we stated in the previous article, warm air can hold more water vapor than cold air, and consequently when warm air containing a lot of vapor is cooled some of the vapor must return to the liquid state.

About sunset in well-watered regions, the air close to the ground is nearly saturated, as we may know from the growing dampness of the grass; and from this time on the further cooling of the ground during the night, and the consequent cooling of the air next to it, causes the continuous deposition of vapor in the form of dew or frost; the former if the temperature is above 32 F., the latter at lower temperatures. While part of the dew comes from the air, part of it comes from plants and another portion from the soil. During the daytime, under sunshine and in the presence of wind, the surface of the soil is dried, water rises from the subsoil by capillarity to supply more vapor to the thirsty air. The water which is transpired by plants also freely evaporates. But at night, drops of water may collect on the leaves of plants, where it is unable to evaporate in the cold, still night air, and water rising to the surface of the soil may remain there instead of passing off as vapor.

Frost usually follows a day in the spring or fall which shows, in the afternoon, a decreasing cloudiness and a weakening wind. When the occurrence of frost appears likely, it is often possible to protect crops from injury by building a smoky fire on the windward side of the field, so

being beneath a cooler layer. Thunder storms are usually accompanied by two changes of wind. First the wind is blowing from the direction from which the storm is approaching, as the storm comes nearer we find the wind changing and blowing towards it, then we get the squall blowing out from the storm cloud. The wind which blows in towards the storm is the warm surface air which is taking part in the turning over. The cool wind of the squall is caused by the downward reaction or from the upward expansion of the great mass of air involved in the storm cloud, and may thus be compared to the "kick" of a gun.

Lightning is believed to be due to the electrical separation produced by the breaking of large raindrops into smaller ones. It is probable that the various parts of a thunder cloud are variously charged, and these parts rise and fall until they come within striking distance of one another or of the earth. The discharge of a flash appears to allow the union of many small droplets which were before held apart by electric repulsion, and thus locally promote the fall of rain. A flash does not follow an angular zigzag line as it is commonly represented in pictures; photographs show it to run in a sinuous path, somewhat like a river course. Sheet lightning is the illumination of the clouds by flashes which cannot be seen by the observer.

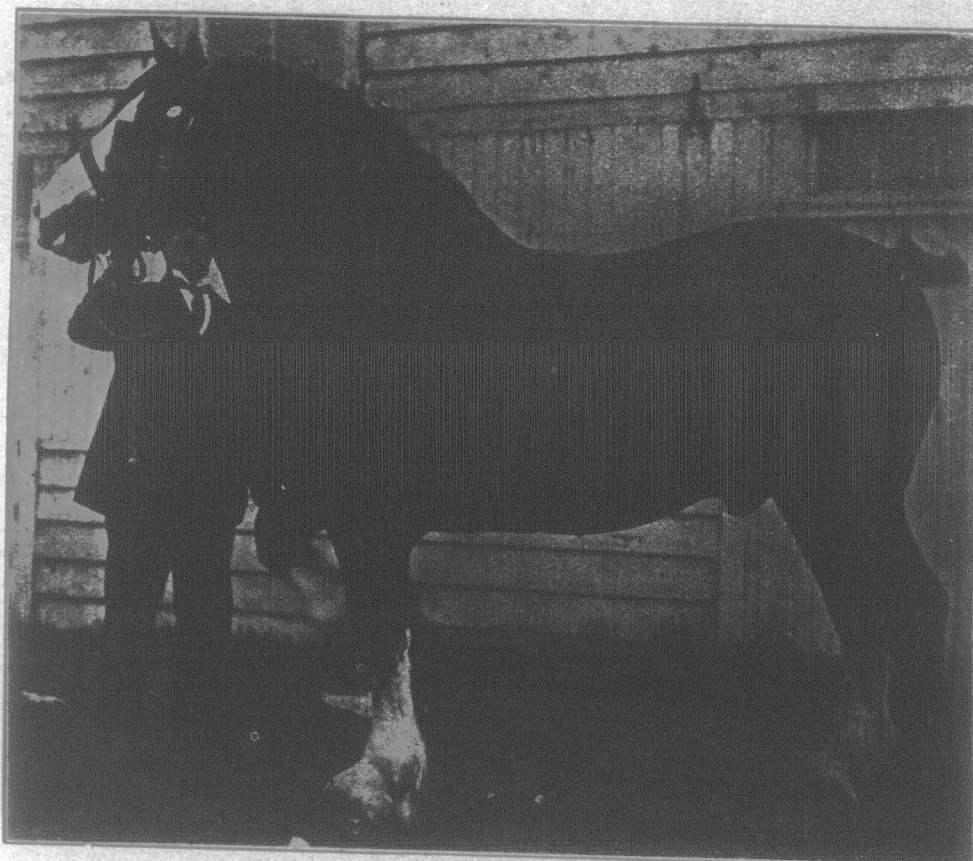
Thunder is due to the violent vibrations of the air set up by the heating and electric disturbance along the path of the flash, much in the same way as the sound is produced by the firing of an explosive. When a flash occurs near the observer, the sharp crackling reports first heard come from the smaller branches of the flash, the heavy crash immediately following comes from the

trunk of the flash, and the rolling thunder is due to reverberations among the clouds.

As sound travels through the air with a velocity of about 1,100 feet a second, the distance of the flash may be estimated by allowing a mile for each five seconds between the flash and its thunder.

The aurora borealis or Northern Lights, is an illustration of the atmosphere in arches, streamers or sheets of whitish, yellow, green or red light caused by electrical discharges chiefly in the thin upper air.

The comments of readers in renewing their subscriptions for the current year are both encouraging and enlightening. One of them, which is a duplicate of many others addresses: "It is never failing relief to me to have a paper coming along every week that is not only worth money as a real help on the farm, but a safe and cheering visitor in any home. I like its clear-cut, candid statements even if I may sometimes see things differently. I know 'The Farmer's Advocate' is staunch for the farmer every time, and speaks its own mind. I would not be without it for \$5.00 a year."



Marathon.

Clydesdale stallion, well known to followers of Canadian shows.

that a dense layer of smoke may drift slowly over the surface. Radiation is then transferred in great part to the smoky stratum, and the injurious fall of temperature at the level of the ground is efficiently prevented.

Clouds formed at temperatures above 32 F. consist of minute spherical drops of water from one thousandth to one four thousandth of an inch in diameter. Those formed at temperatures below 32 F. consist of minute ice spicules. Cloud particles are so minute that they fall very slowly through the air, and a very slight ascending current is sufficient to bear them upward. When their size increases by continual condensation, they may become large enough to fall and thus rain is produced.

There are three fundamental cloud forms. The high, thin, fleecy clouds are called cirrus clouds; the heaped-up clouds like huge masses of wool are termed cumulus; and those which lie in level banks are known as stratus clouds. Between these fundamental forms we get many intergradations, as cirro-cumulus, cirro-stratus, and strato-cumulus. A cloud from which precipitation is taking place is termed nimbus. The huge "thunder-heads" are, therefore, cumulo-nimbus clouds.

The height of cirrus clouds in summer averages six miles, of cumulus clouds one and a quarter miles, and of stratus clouds one-third of a mile. In winter the average heights are a little less.

Thunder storms are due to an overturning of the atmosphere. The atmosphere is in a condition of instability owing to a layer of warm air

week that is not only worth money as a real help on the farm, but a safe and cheering visitor in any home. I like its clear-cut, candid statements even if I may sometimes see things differently. I know 'The Farmer's Advocate' is staunch for the farmer every time, and speaks its own mind. I would not be without it for \$5.00 a year."

THE HORSE.

The experienced horsemen like to train their colts when the snow is deep.

If a gelding is being fitted for sale, finish him before offering. A horse in good fit commands the top price.

Shoes kept sharp, at least in front, are a good investment on the brood mare. A little slip may mean a grave loss.

Get the colt, to go into spring's work this year, thoroughly accustomed to being driven, drawing light loads, etc., now while time is not so precious as it is later on.

Where is the stallion to-day? Is he in a little, narrow, dark, dingy stall without care or exercise? Exercise is important now as well as later on when the season is approaching.

If the recently-weaned colts are still running in the box stall and have not been haltered, do it at once. Did you ever notice how nervousness and timidity grow on a colt allowed to run loose alone in a box stall and not handled to any extent? The sooner a colt is tied and handled the better. As soon as thoroughly "halter broken" allow him the run of his box stall, but tie him for a few hours each day to keep him accustomed to it.

Where hay is scarce and good straw plentiful idle horses may be fed one or two feeds per day of straw. In fact some feed no hay, replacing it entirely with good, clean, bright oat straw and increasing slightly the grain ration. In many sections the straw was particularly clean and bright the past season. A saving may sometimes be effected by its use for roughage, but a little grain is necessary where straw forms the sole roughage.

Catching a Wild Colt.

Editor "The Farmer's Advocate":

Sometimes it is necessary to catch a somewhat wild colt or older horse in a large box stall or small paddock. Very often a colt is foaled after the mare goes out to grass in the spring, and is consequently not handled very much until the time comes around to wean him in the fall or early winter, and even then he is often turned loose in a big stall and left perhaps until nearing spring, or sometimes until the following fall to be haltered. Of course, this is not the best practice, but still it is more or less common. So it is that a comparatively wild colt or young horse is frequently found on the farm, and it becomes necessary to catch him and get the halter on him and teach him to lead and stand tied.

The writer has had several experiences with this class of colt, and has found the following simple method practical, effective and harmless. If the colt is in a paddock or box stall, preferably the latter, take a fairly long rope and place a slip knot in one end and place a large loop in it. Spread this loop on the straw in the well-bedded stall, and stand back at the opposite side of the stall. The colt's curiosity will be aroused and he will move up to the loop, and after a little maneuvering will place one front foot unsuspectingly in the loop. Pull the rope and tighten the loop on the fetlock of the colt. Now open the door and drive the colt out into a well-bedded or deeply-manured barnyard. One man can hold him easily. He will jump and flounder for a time. Pull the leg gently but firmly out to the side from under the body. Let him jump and fight. He will soon tame down and stand while he is haltered. Leave the rope on the leg, and have an attendant take the halter shank and walk in front while the man with the rope walks behind. If the colt gets wild a gentle pull on the rope will soon quieten him, and in a short time he will lead quietly.

All this trouble might be saved if colts were handled enough when very young and taught to lead when small, but many of us are busy and do not get it done, and the foregoing is an easy, simple and effective means of partially repairing damage due to earlier neglect. I have handled a particularly wild colt rising two years of age in this manner, and several younger colts which otherwise might have given trouble in catching and holding after being caught. There does not seem any harm whatever result from the operation, and I can recommend it to others having wild colts to catch and "halter break."

Middlesex Co., Ont. YOUNG HORSEMAN.

An Act to Help the Farmer.

Editor "The Farmer's Advocate":

In looking through your valuable paper I see that you are throwing open your columns to the stallion owners and breeders to discuss the "Stallion Enrolment Act." As I have been in the horse business some twenty years I will tell my brother horsemen and breeders what I think of it. Last winter I spent a day at the village where stallions were being inspected, and I saw horses getting their certificates that I would be ashamed to have in my stable as geldings. So far as I can see the Act is doing nothing to put out of business the useless horse, be he either a grade or a pedigree animal. The only men who will be benefited are a regiment of soft-handed gentry that will be able to extract \$100,000, a large sum of money, out of the pockets of the breeders of this province. For a certainty the stallion owners will saddle this burden on the breeders. It seems to me that this Act is an insult to the breeders of the province. Are they children just out of their swaddling clothes that they must be told by the veterinary profession what they shall breed their mares to? Men that have spent their whole lives in breeding, rearing and caring for horses I think should be able to look after their own interests. At the

present time I am the owner of a horse that won several championships at leading fairs in this province and that cost me away up in the four figures, and also a string of five registered mares some of them I believe good enough to get highest honors, but I shall get out of the game as soon as possible as I see that this is but the thin edge of the wedge in this business, for as soon as this Act is in operation someone will set up an agitation to have mares inspected. I think that it is about time that our governments gave the farmers a rest.

The President of the Tanners' Association is asking for legislation to prevent the farmers from killing or disposing of any female cattle under five or six years of age. It seems to me that these are the kind of men that are getting acts passed to help the poor farmer along.

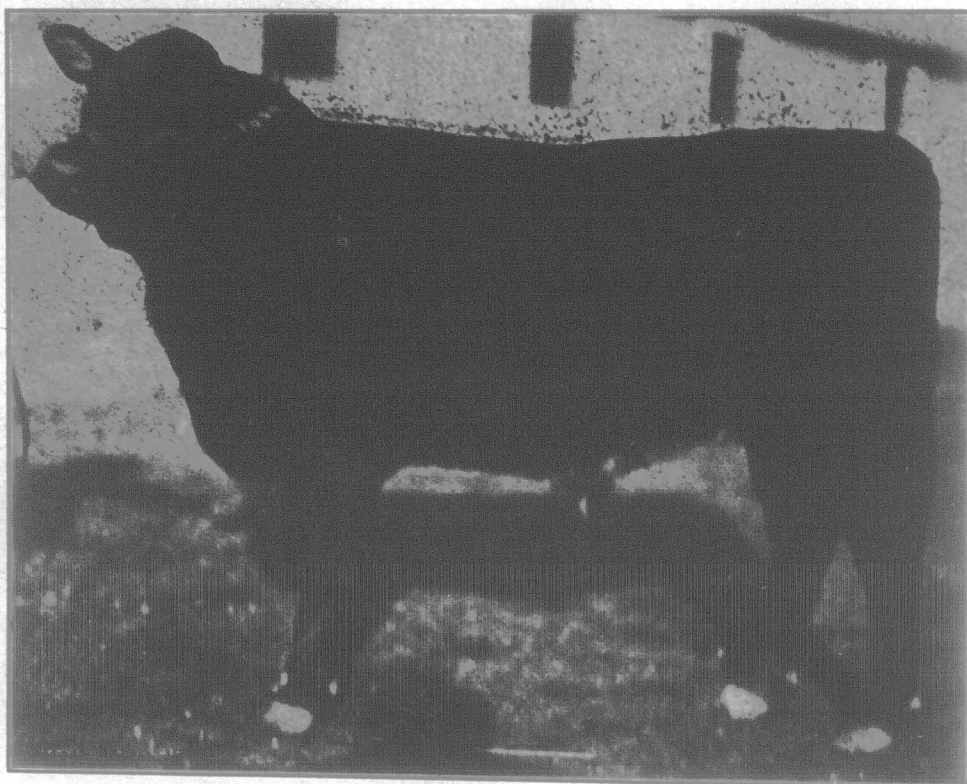
Elgin Co., Ont.

W. H. McALISTER.

LIVE STOCK.

In the Feed Lot and Finishing Stall.

This is the season of the year when the occupants of the feed lot or stall must be closely watched. Young growing stock will thrive or remain unthrifty according to their care and the attendant may say, "Well, they will pick up



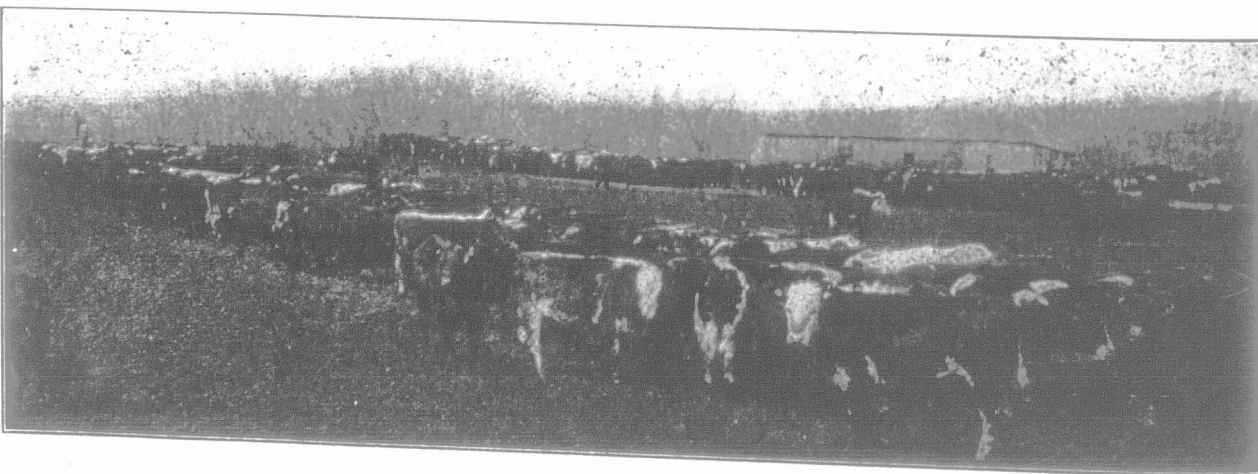
Hector.

The winning butcher's steer at the Live-stock Show in Toronto, in November last. Exhibited by John Lowe, Elora, Ont.

when they go out on grass," but to the feeder of steers for the block no such consolation is forthcoming. It is now or never, and a delicate steer or one off feed spells loss at once.

Few people realize the extent of the steer-feeding industry, and the knowledge, experience and technique required to conduct it properly. It has been estimated that 85 per cent. of the cattle that reach the Chicago market are not raised by the people who fatten them. This is indicative of the system the world over where the stock is raised on grazing lands and finished in corn belts or fertile grain-growing districts. In Canada, however, the system is fast going into decay for the margin between finished cattle and stockers and feeders has constantly been growing narrower until the time is almost here when breeding cows must be kept in order to replenish the feed lot each year with finishing cattle. This system will tend towards earlier finish which has been proven most economical.

A stunted animal is by no means a money



Making Beef in an Outside Paddock.

How many steers in the lot?

maker, for not only is he small in size but his whole digestive system is likewise stunted and he does not utilize the food consumed to as good advantage as a sappy, well-reared calf. Calves designed for beef production should be wintered on the best roughage available, including clover or alfalfa hay, corn ensilage, corn stover and roots. To this a couple of pounds of chop might be added with some bran and oil-cake meal. With this care, the young beefee should increase in weight daily from one to one and one-half pounds at least and many do even better. It is highly important that the young steer or heifer should gain steadily and increase in flesh and framework but not lay on too much fat. Two authorities claim that yearling steers will average a gain of 1.6 pounds daily on pasture for the six months of the grazing period.

When the steers come in for their final winter the feeder's skill is put to the test. He must get acquainted with his stock and they must get acquainted with him and learn to look for him at certain periods of the day. They should not be disappointed, for regularity in feeding is as necessary as punctuality in the business or manufacturing world. The process of fattening is simply storing up concentrated fuel energy against such time as the animal might need it and this takes the form of fat being deposited

among the fibres of the muscles and within the bones and body cavity of the animal. With a hearty appetite at first the animal lays on fat rapidly, but as time progresses the keen edge wears off and now more food must be consumed for every pound of gain. When the process goes further on the depositions become drier and contain a larger percentage of fat than in the earlier stages. When animals first go into the stalls and enjoy liberal feeding the internal organs of the body develop in order to meet the new demands. At this period too the deposits all over the animal contain more water and protein and explain why exceedingly satisfactory gains are sometimes made during the first month or six weeks of the feeding

period. Lawes and Gilbert, forty years ago, figured that on an average of the whole fattening period an ox would increase 100 pounds in live weight from the consumption of 250 pounds oil cake, 600 pounds clover hay and 3,500 pounds of swede turnips. The 1,000-pound steer will consume on the average about 125 pounds of dry food per week and from this will gain about 11.8 pounds. Dry food means the ordinary fodder from which the moisture has been evaporated. Red clover hay contains on the average 15.3 per cent. and oats 10.4 per cent. of moisture. Basing results on these calculations, one pound of beef on the mature steer may be produced from 11 pounds of dry fodder.

Where the feeding period is to be of five or six months duration, a month or six weeks at least should elapse before bringing the steers to full feed and in such cases a large amount of the best roughage should be fed, viz., clover and alfalfa hay. Mumford, an authority on cattle feeding, reports getting cattle to full feed by

Dr. Maria Montessori

mixing cornmeal and oil meal with chopped clover hay in the self-feeder, where it was accessible to the cattle at all times. The full grain allowance was reached by gradually increasing the proportion of cornmeal to roughage. This system saves grain, prevents gorging and brings the animals to full feed two weeks quicker than the ordinary method.

There are many feeds and various methods of feeding. Clover hay, alfalfa, corn silage with plenty of matured corn in it, roots, and the rough grains grown on a Canadian farm give the feeder a wide choice in computing his ration. He may often, under certain circumstances, profitably purchase bran, oil-cake meal or some other concentrates. The corn-belt farmer holds that there is nothing like corn for producing high finish, yet for two years in succession a Canadian steer, which had never tasted corn, took the highest honors at Chicago in the keenest of competition with the corn-fed product and in the very home of the latter. The skill of the feeder means much. The feeds are at his disposal in this country. If he has the cattle he can bring results, but cattle feeding requires skill and training. It is more than throwing a certain amount of certain feeds to the steers each day. It is an art and an art worth developing.

A Rack for Sheep Feeding.

Many sheep feeders feed their hay and other roughage on the ground or floor, but there is less waste if a rack is used for the purpose. A combination rack is illustrated in this issue which is fitted for feeding the concentrates as well as for the roughage. It is simple in construction and should prove a very useful rack and trough combination.

HOW TO STIMULATE NITROGEN PRODUCTION IN THE SOIL.

Like unto a certain multi-millionaire, well known as a capable "organizer," whose special dispensation of charity took the form of donating one-half the price of a church organ on condition that the congregation "raised" the other half, so nature offers the farmer free nitrogen, provided he supplies the phosphoric acid and potash. When clover or other legume is grown for fodder or for plowing down, it is always desirable to secure as large a crop as possible and to enable a nitrogen-gathering crop to rob the atmosphere of the maximum quantity of valuable nitrogen, it is necessary to furnish a sufficient supply of the other plant-foods. No factory can be kept going unless regularly supplied with the

in both is similar, so that, while approximately one-third of the total nitrogen content of the clover crop is in the roots, one-half of the nitrogen in alfalfa is contained in the roots of the plant. The value of alfalfa as a fodder, however, and the desirability of maintaining its growth on the same location for a period of years, precludes its consideration as a "cover crop" in the general sense of the term, although its action in soil improvement is none the less important. In a young orchard the writer grew alfalfa for several years, ploughing each year two or three extra furrows on either side of the tree rows, but, while this system may be successfully followed under such conditions, it could not be adopted for mature orchards.

Sweet clover has recently been under consideration as a cover crop and might have a place in the improvement of poor, infertile soils, which do not at present repay cultivation. Sweet clover, growing as a roadside weed, is a familiar sight in some parts of Ontario. Its flourishing growth, under apparently adverse conditions, indicates its hardiness. In composition as well as habit of growth, sweet clover closely resembles alfalfa, but sooner becomes woody and has a bitter taste.

CLOVER IN ORCHARDS.

The value of clover as a "green manure" crop for orchards has long been recognized by fruit growers, particularly some of those in the Annapolis Valley, who depend solely on this means of furnishing the soil's supply of nitrogen and humus. Under this system it is necessary for them to supply only phosphoric acid and potash which, in that locality, usually take the form and quantity of 400 pounds bone flour and 200 pounds muriate of potash per acre annually for full-bearing orchards. The clover is usually seeded in June or July and occupies the ground until the following May, when it is ploughed under and the land thoroughly cultivated. Sometimes the clover crop is grown only in alternate years, which practice permits more thorough cultivation of the land during the summer season. During recent years many orchardists on the lighter soils have preferred the hairy vetch to red clover as a cover crop, believing that a catch of the former is more easily secured.

NON-LEGUMINOUS COVER CROPS.

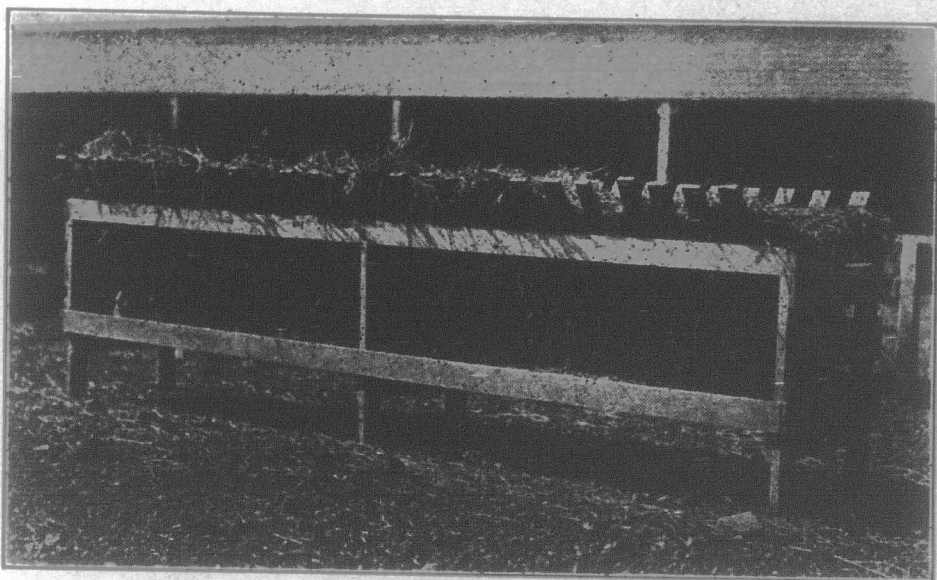
Plants, other than legumes, are sometimes grown for ploughing under and, although they do not directly add to the soil's supply of nitrogen, they nevertheless are "nitrogen gatherers" by reason of the fact that, during their growth, they absorb the nitrates, formed in the soil, which would otherwise be leached out.

Buckwheat, oats, rye and rape are frequently used as cover crops, and may be preferred to the legumes when it is desired to obtain a bulky crop within a short period and where the cost of the seed is a consideration. Buckwheat is popular on account of its apparent ability to grow successfully on almost any soil.

CLOVER SICKNESS.

Recent investigations have definitely proved that clover sickness is due to parasitic origin and not directly to the exhaustion of a soil constituent, essential to the growth of clover, as formerly supposed. Notwithstanding, the treatment recommended by the British Board of Agriculture is substantially the same, viz., "Sulphate of potash is the most effective remedy, applied at the rate of 400 pounds per acre. When a crop shows signs of the disease this remedy should be applied at once to the diseased patches, taking care to extend the dressing beyond the obviously diseased zone. This method will not cure diseased plants, but only prevent the spread of the disease by killing eelworms migrating from one plant to another. As this substance will not destroy the eggs, it will be necessary to apply more than one dressing to kill the eelworms as they hatch out. Deep ploughing is also beneficial, where conditions will allow, as it has been proved that, when eelworms are buried at a depth of five inches they are killed. Infection of the clover crop by eelworms can only occur during the seedling or quite young condition, hence sulphate of potash should be applied to the land shortly before the seed is sown, so that it may be in full activity when the clover crop is quite young."

Eelworm Disease (*Tylenchus devastatrix*).—The first noticeable symptom of this disease is a yellowing and wilting of the leaves in patches of



A Sheep-feeding Rack.

THE FARM.

Artificial Fertilizers; Their Nature and Use - VII.

By B. Leslie Emgile, C.D.A., P.A.S.I., F.C.S.

GREEN MANURES OR COVER CROPS.

Owing to their peculiar faculty of assimilating atmospheric nitrogen, which has already been remarked, legumes are the most valuable crops in this category.

The signal honor of discovering this function of the botanical order, leguminosae, was achieved by the late Drs. Hellriegel and Wilfarth at the experiment station of Bernburg, in the Duchy of Anhalt, Germany, while the late Dr. Hunter, of Edinburgh, and Professor McAlpine, Botanist of the West of Scotland Agricultural College, who were together engaged at the same theory, arrived contemporaneously at a similar conclusion. The discovery, however, is popularly associated with the name of Hellriegel.

Hellriegel's discovery was made in the following manner:

Plants of various kinds were grown in the regular experimental pots, filled with pure sand, which had, of course, been freed from all traces of plant-food. The plant nutrients were applied to the pots in varying quantities and proportions, in order to ascertain the actual plant-food requirements. It was observed that legumes, grown in pots which had been treated with a solution, containing all the necessary elements of nutrition, except nitrogen, continued to thrive, and ultimately equalled in size and weight the legumes in other pots, which had received nitrogen in addition to the other nutrients. Furthermore, it was found that the soil in which the legumes had grown was finally richer in nitrogen than at the beginning of the experiment. From this fact it was naturally argued that legumes have some means of obtaining their nitrogen supply, not possessed by other orders of plants. It had already been noticed that the roots of clover and other legumes were usually covered with small tuberous growths or nodules and these on examination were found to contain myriads of bacteria and to be exceedingly rich in nitrogen. The fact that these bacteria were instrumental in securing a supply of nitrogen for the plant was now proved beyond a doubt.

A NITROGEN FACTORY IN THE SOIL.

The universal importance of Hellriegel's discovery is inestimable, for it indicates to the farmer a means whereby he can establish a nitrogen-producing factory in his own soil—a factory which will actually "work while he sleeps." The growth of a crop of clover, alfalfa, beans, peas or vetches not only obtains the nitrogen for its own growth, but leaves in the soil, in its decaying remains, a supply of nitrogen for the succeeding crop. It appears quite obvious, then, that the introduction of a leguminous crop as frequently as possible in the rotation is an admirable policy.

motive power necessary for the evolution of the finished product; no more can this nitrogen factory in the soil maintain its full productive capacity without an adequate supply of power in the form of phosphoric acid and potash. Legumes, although independent of an artificial source of nitrogen, are nevertheless very dependent on a readily available supply of the other plant-foods.

A COMPARISON OF VARIOUS LEGUMES.

Common red clover is unquestionably one of the best nitrogen gatherers. An analysis of its stems and leaves shows a percentage of 0.92 nitrogen and of its roots 0.88 nitrogen. Since the weight of the root system is more than one-half that of its stems and leaves, a large amount of nitrogen is stored up in the underground part of the plant.

Mammoth red clover, although a heavier yielder than the common red, contains a smaller percentage of nitrogen, so that, as a rule, a larger total amount of nitrogen per acre is left in the crop residue from common red clover.



A Champion Long-wool Wether.

Exhibited by H. Lee, Highgate.

Crimson clover as a fixer of nitrogen is less desirable than the two former, its root system being less extensive.

Hairy vetch or sand vetch is not so valuable as the clovers, where the latter can be successfully grown, but on light, poor soils, where a catch of clover would be precarious, its greater hardiness of growth renders it superior.

Alfalfa.—The root system of this crop is very extensive and penetrates deeply in the soil. The total weight of roots is, in fact, equal to that of stems and leaves and the percentage of nitrogen

clover. The extent of the patches increases and the leaves droop and die. If the affected plants are examined the branches at the crown will be found to be swollen and, under a microscope, eelworms and their eggs may be seen in the tissues.

Fungus Disease of Clover (*Sclerotinia trifoliorum*).—The general symptoms of this disease are similar to those produced by the eelworm, but on close examination of the plants, black wart-like excrescences may be observed on the collar between stem and root. As this disease only affects legumes, the remedy suggested is to reap land, known to be affected, free of leguminous plants for several years.

(To be continued).

Fertilizer with Mangels.

Editor "The Farmer's Advocate":

Having received several letters from readers of your paper, requesting further information about my experiment on mangels, which was contained on the back cover of your Christmas Number, I shall be greatly obliged if you will grant me space to reply through your columns.

As the main particulars of the above experiment were mentioned on page 2227 of the Christmas Number, I shall give the data of another similar experiment which I carried out in 1913 on another part of my farm, in order to check the results of 1912.

There were three plots in the test, each being one-quarter of an acre in size. All plots got a dressing of manure at the rate of ten tons per acre.

Plot 1 was the check, plot 2 was fertilized at the following rate per acre: 400 lbs. acid phosphate, 120 lbs. nitrate of soda, and 140 lbs. muriate of potash. Plot 3 got the same treatment as plot 2, except that no potash was applied.

Owing to the very dry season the yields were not as large as the previous year, but the increase, which the fertilizers produced, was larger. Plot 1 gave 420 bushels per acre, plot 2, 900 bushels, and plot 3, 520 bushels. While the plot without the potash gave only 100 bushels more than the check plot, the plot with the potash gave 480 bushels more.

On May 1st I mixed the fertilizers in the correct proportions and applied them the same day, scattering them broadcast by hand from a pail. I might mention that in the 1912 experiment, that being a very wet year, I did not apply the nitrate of soda with the other fertilizers, but put it on just before thinning the young plants. In last year's experiment all the fertilizers were applied on May 1st, and the mangels seeded on May 18th. The effects of the fertilizing were noticeable from the time the plants came through, and plot 2 was ready for thinning several days ahead of the others.

Based on the price per 100 lbs. laid down here, the cost of the complete fertilizer would be about \$10.00 per acre, as follows:

400 lbs. acid phosphate at 80c. per 100.	\$3.20
140 lbs. muriate potash at \$2.30 per 100.	3.22
128 lbs. nitrate of soda at \$3 per 100.	3.60

Of course this amount would not all be charged to the first crop.
Halton Co., Ont. JOHN A. RIGGS.

Working out Parcels Post.

The Postal Department of the Dominion Government is gradually working out the complete system of the new Parcels Post soon to take effect. A number of the details of the Parcels Post policy have been worked out, there are many points, including the rates of postage, yet under consideration. The zone system is being adopted, but it is not placed strictly on the basis of so many miles around a given post office. The nine different provinces are so situated geographically that they will form the natural zones for the working out of the system, and the rates will be graduated on the basis of a certain rate to a province once removed, and a still higher rate for one still further away, having regard to the relative position of the provinces to each other. However, there will be one local zone of twenty miles around each post in Canada, irrespective of provincial boundaries. The limit of weight has been fixed by the Parcel Post Act at eleven pounds.

Doesn't Like to Miss it.

Editor "The Farmer's Advocate":

My subscription has about expired, and as I do not wish to miss any copies, nor to do without it, I enclose postal note for \$1.50 to pay for it for another year. "The Farmer's Advocate" is O. K. Long may it continue to be truly a "Farmer's Advocate." Your Christmas Number was fine.

Lincoln Co., Ont. JOHN D. McLEOD.

A Plank Barn.

Editor "The Farmer's Advocate":

The barn illustrated herewith is designed to meet the requirements of the average 100-acre farm carrying a mixed stock. It is very simple in construction, being formed of two-inch plank in various widths requiring no notching at joints as in the old style of framing. This structure is designed to withstand great wind pressure, which is a great asset in a country which is fast becoming tree bare. It is easily erected, the timbers being light compared to solid framing, and practically any man familiar with the use of ordinary tools can make and with a little help can erect it. The bents are built on level ground, and raised the old way, starting at one gable end and working back towards the other. There being no obstructing posts or barn floor,

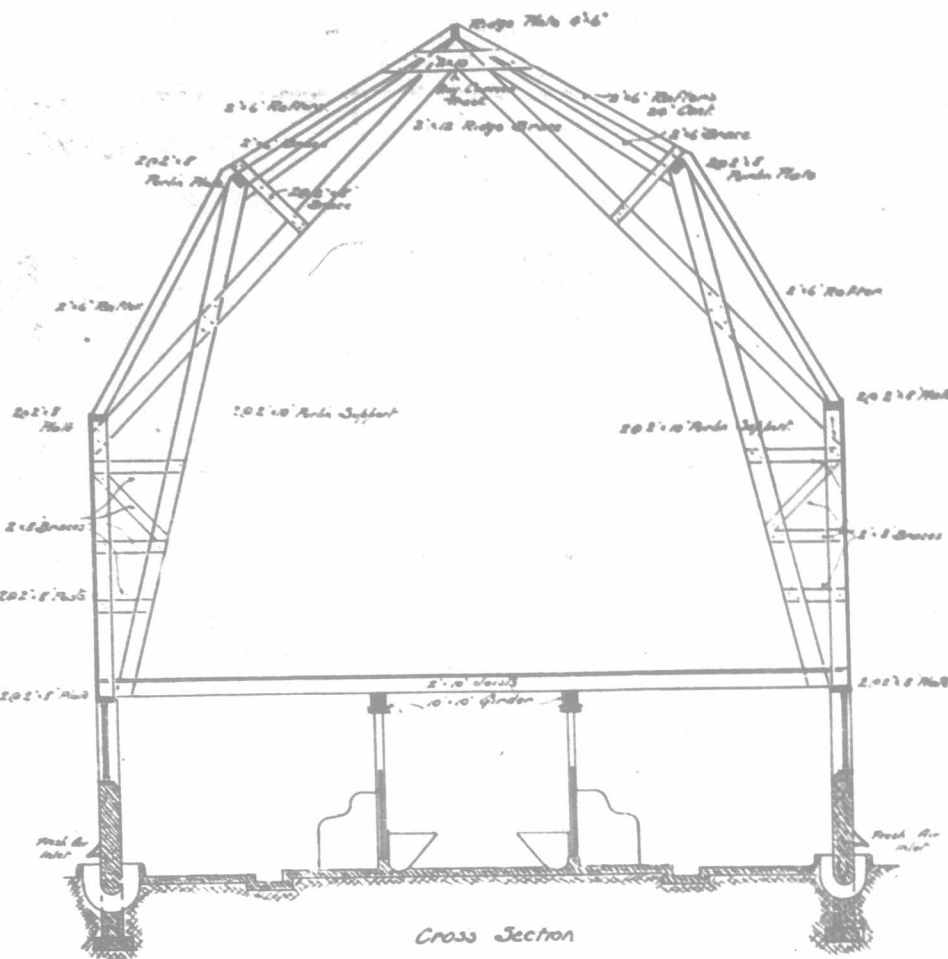
tion for 14 cows, calf pen and bull pen or calving pen, with the best dimensions shown regarding stands, gutters, walks, etc. Sanitary stalls are shown on plan, these being, in the writer's opinion, much more sanitary and economical than the old wood ones. Litter carrier track is also shown, this, of course, is left entirely with the farmer. The horse stable provides for four stalls and one box stall with passage through to cattle, giving easy access to each and more convenience in feeding. Horse stalls are five feet wide and nine feet deep, the sizes being inadvertently omitted.

Wellington Co., Ont. JOHN CHRISTIE.

Consumers Should Co-operate.

Editor "The Farmer's Advocate":

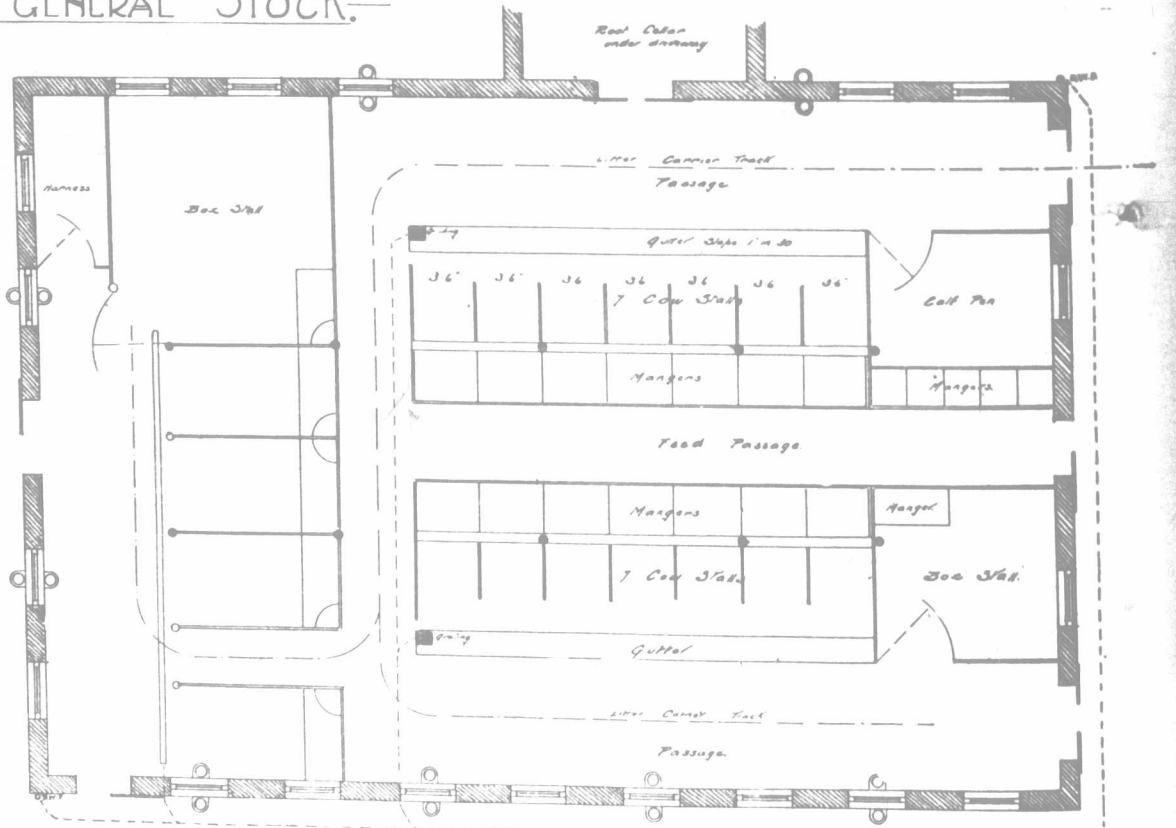
I was very much interested in Peter McArthur's experiences with co-operation. It seems to me he has come to the right conclusion. No matter how much the producers may co-operate (short of an extensive combine) they cannot hope to raise the price except by improving the quality. Because the consumer has the advantage of the chance to buy from producers who are not co-operative and are consequently selling cheaper to the middleman. True, the producers can do a little co-operating and shipping in car lots, thus getting a low freight rate and guaranteeing honesty in quality and packing. But if they sell in car lots they will have to ask less than in smaller quantities, say 100-lb. lots, which is the minimum for freight shipments. Seemingly it is the consumer who will benefit most by co-operating, and why they don't do so instead of continually talking about the high cost of food is more than I can understand. If co-operation will pay at all it seems to me it should pay best for the consumers to organize. If they were organized they would simply have to ascertain where they could buy a carload (or smaller quantity) the cheapest whatever commodity they needed, have it shipped and distributed immediately. But perhaps difficulties would arise in connection with this distribution. Probably some of the members would not like waiting till a carload was needed. Then those taking large



Cross Section of Plank Barn.

allows of some freedom in drawing in loads of hay. This barn, of course, can be designed having end lift, doing away with the heavy pulling going up to the barn floor. Fresh air inlets and foul air outlets are shown of drawings in the most modern manner of ventilation. An up-to-date system of drainage is also shown, all drainage being run to a cesspool, placed at the farmer's discretion, sufficiently far from barn and wells to provide against any risk of contamination. The plan provides accommoda-

—DESIGN OF BARN—
—FOR GENERAL STOCK.—



—Ground Floor Plan—

—Scale 1/4"=1'-0"—

Barn for 100-acre Farm.

Dr. Maria Montessori

lots would expect to get it cheaper than others taking smaller quantities. Then the cost of delivery would be a large item, and by the time everyone was allowed proper ranges for their work maybe it could be purchased as cheaply in the same quantities from the retailer. I once knew a person who tried to buy a half ton of granulated sugar from the refinery. He found that he could buy the same quantity cheaper from the retailer after freight and delivery were paid. It seems to me that the greatest barriers between producer and consumer are the freight and express rates. Why need there be any minimum rate? Few families in the city care to buy a hundred pounds of any food at once, and if they buy much under this amount from the producer, and it has to be shipped very far, the cost is prohibitive. Perhaps parcel post will remedy this somewhat, but if the minimum for freight shipments were abolished consumers would get most of their food at reasonable prices. Perth Co., Ont. J. H. BURNS.

On Patents.

Editor "The Farmer's Advocate":

An invention is the creation of something that did not exist before. Patents are granted to protect these and enable inventors to obtain suitable compensation for increasing the world's supply of useful knowledge. Inventions are sometimes, but rarely, the result of a sudden brilliant idea. Usually they are slowly developed by long, tedious and expensive experiments. If, as soon as they were disclosed, they became the property of the public, there would be little or no incentive to develop ideas. No company would be willing to carry on expensive tests if they were absolutely certain that their expenditure would not lead to any financial return. It is a notable fact that countries like Germany and the United States, which stand foremost in manufactures, have the most highly-developed patent systems. It has been stated, time and again by those competent to judge, that the prosperity of the United States is directly traceable to its good patent laws. Holland, on the other hand, had until recently no patent act, and as a result there is little or no manufacturing there. It is a country that would naturally be pre-eminent in this line, owing to its transportation facilities and its cheap labor. The trouble lies in the fact that no company is willing to take the risk and go to the expense of erecting a large and costly plant, when they know that as soon as it is completed anyone can utilize all the discoveries that they have made, and build and operate a plant in competition with them.

There is a wide difference of opinion as to the scope and nature of a patent. Some believe that as soon as they receive the well-engraved patent parchment they possess a government guarantee that they are the first inventors of the device, and consequently none will dare infringe. Many have learned to their sorrow that this is not the case. After obtaining a couple of patents and having their validity called in question they come to the conclusion that the government has handed them a "Gold Brick," and that patents are simply pieces of paper that lead people to unwittingly separate themselves from their money. That this has been the result in innumerable cases is undoubtedly true, but the real trouble is that the inventor does not understand the true nature of a patent.

Inventions that are basic in their nature and cover devices for which there is a great demand are very valuable. Independent fortunes have been and are constantly being made by them. As an illustration of the enormous value of some recent inventions it has been calculated that the replacement of the ordinary incandescent lamp by the tungsten one effects a saving of approximately \$240,000,000 a year. This seems almost incredible. Of course, the inventors do not realize any figure like this for their patents, but it is quite safe to say that tungsten filaments are making men wealthy.

It is equally true that a large number of patents are financially valueless, and simply represent an outlay for which there is no probable return. Some cover devices that are not wanted, and others do not contain any valuable new features.

In considering the scope of a patent it is always necessary to become familiar with the patent laws of the country in which it was granted. There are countries, of which France and Belgium are notable examples, that grant patents without any search being made, and identical ones may be given to different people for the same invention. This is simply a system of registration, and the burden of determining whether an idea is new or not falls on the inventor.

In countries like Germany and the United States an exhaustive search is made before any application is allowed to mature into a patent. If any anticipating reference is found the inventor is required to so modify his claims that he will entirely avoid claiming anything that is not new.

In Germany the applications are finally thrown open to public inspection, and any person is allowed to object and give reasons why they should not be allowed to issue as patents. These objections are carefully considered by the patent office, and if sufficient reasons are shown the inventors have to further modify their claims. Then when a patent finally issues it is guaranteed to a great extent by the German Government. Owing to this extremely rigid search the German patents are probably looked upon with more respect than those of any other country. In the United States there is also an extremely rigid search, but the public are not given an opportunity to object to applications before they mature into patents. The patents issued by the U. S. Patent Office are nevertheless highly respected, and it is a significant fact that few corporations think of purchasing a patent before they have seen the office action, and in this way have become familiar with the state of the art.

In considering the two styles of patents the majority of inventors consider the procedure adopted in Germany and the United States far superior to that of countries having simple registration. In addition to lessening expensive litigation it gives the inventor a clearer view of the relation between his discovery and others in the same line. He is better able to see the weak points of his device and improve it.

One objection is often raised to compulsory amendments. An examiner in a patent office might, in his excessive zeal to reject spurious inventions throw out a valuable device. To guard against this in the United States an appeal is allowed from the primary examiner to the examiners-in-chief, and from there to the Commissioner of Patents. It is extremely improbable that all these would fail to grasp an inventive feature, especially as they are all highly trained both in technology and law.

In Canada, whose Patent Act is very similar to that of the United States, there are no examiners-in-appeal. The commission has not so far been commented upon, owing undoubtedly to the strong personality of the Deputy Commissioner of Patents. It is quite safe to say that the poorest applicant when appealing will receive as much consideration as the strongest corporation, owing to his strong sense of justice.

Although the form of patents and the restrictions in connection with them differ greatly in different countries, yet there is one basic principle which underlies them all. That is the protection and reward that should be afforded anyone that discloses a device or process for aiding humanity.

An efficient patent system is a tremendous asset to any country. It is one of the most powerful agencies in creating prosperity. The error of considering patents as gifts or prizes given to encourage invention is frequently met with. They are in reality merely a title to and protection of, for a limited period, property created by the patentee.

H. W. CHARLTON.

Cutter Riding.

By Peter McArthur.

A few days ago Nature gave us one of her own, unique, comprehensive, and convincing demonstrations of the Good Roads Movement. It was province-wide in scope and eminently satisfactory. If rightly considered it was worth a whole winter of talk at Grange meetings and County Councils. Nature let a contract to the east wind, and in one night that burly and blustering worker covered the roads, fields, woods and every place you might want to go with six or eight inches of the most attractive road metal. When we got up in the morning there was "good slipping" everywhere. We could yank home the stove-wood that had been left in the woods, because the roads were too rough for hauling with the wagon. To bring home coal would be a pleasure, and if we had any teaming to do there would never be a better time. Unfortunately most of the teaming has to be done when our usual brand of roads are no better than they should be, but still we had a chance to enjoy ourselves. Before noon the roads were wildly musical "with tinkling bass and tenor bells", and the joyousness of the day was infectious. There was no excuse for anyone to be grouching at home. The snow made us all free, no matter how long we might have been imprisoned by bad roads. The hurrying bells seemed to be jingling a happy chorus: "The roads are good, are good, are good, are good!" And they were good. After dinner we found a plausible excuse for going to town and hitched the driver to the cutter. It slipped along so lightly that she seemed to forget herself and think she was not hitched up at all. Every few minutes she would give a sudden jump and start to run as if she were having play in the pasture field. The roads were so good that she couldn't contain her joy. She couldn't wait for people who were plodding along with sleighs. She simply had to pass them. And we found the village full of people who were laughing and

talking and shouting New Year's Greetings to one another. If you asked them, most people would say it was the fine winter day that was making them feel so chirpy, but I venture to think that although they did not realize it, the true source of their joy was the good roads. They could get around freely as human beings should, and it made them feel sociable and neighborly. As I mixed with them I heard invitations to visit and acceptances, and I felt that if the snow lasts we shall have a cheery winter. And it is all because of the good roads. Doesn't that give you an indication of what living in the country would be like if we had good roads all the year around? If it doesn't it should.

And another thing that added to our joy was that our good roads were free from automobiles. We didn't hear a "Honk! Honk!" from the time we left home until we got back. That increased our feeling of joy and security. In the summer time I have a permanent crick in my neck from glancing over my shoulder watching for automobiles. Some of the worst shakings-up I have had have been caused by motors coming silently and swiftly from the rear and exploding into raucous honks just as they start to pass me. On such occasions the driver usually starts as if a bomb had exploded under her, and I am too busy attending to her to be able to tell the grinning road-hog what I think of him. If one of those fellows happens to burst a tire when passing me so that he will have to stop and give me a chance to ease my mind I shall probably talk to him in a way that will surprise him. From these remarks you may gather an impression that I have not yet become friendly with the automobiles. If you do you will be entirely right. I don't know how other people felt about it but to me the chief joy of cutter-riding during the past few days has been the absence of the motor cars. I know they have come to stay, and all that line of talk, but even the best of roads are good roads no longer when they are haunted by speed-maniacs. As I think of it there are two lessons to learn from Nature's demonstration of good roads. We learn that good roads make life more enjoyable and are, therefore, to be desired. We also learn that we want our good roads for ourselves. If the automobiles have come to stay, some special provision must be made for them so that ordinary people can get around in comfort and safety.

Of course it is hardly just to say that all the joy of cutter-riding is due to the good roads and the absence of the automobiles. The perfect weather contributed something to the pleasure. The snow was spotless, except for little diamond-like sparkles of light. The sky was clear and the air was just dry enough and frosty enough to make breathing a life-giving sensation. As we slipped along the road at a speed never attained in the summer time everything seemed exhilarating. The woods, with one side of the tree trunks white with clinging snow, made pictures of a frozen fairy-land. Here and there we saw apple trees loaded with snow so that they looked to be in full bloom. Long before sunset the moon could be seen in the sky, an island of silver in a vast sea of blue. And when sunset really came there was a riot of color all over the sky, ranging from the darkest purple to faint yellow and tinges of rose. Although in an entirely different way, the world was as beautiful as in midsummer, and we all tingled with life to our mittened finger-tips. And we had our touch of excitement too. Just as we were turning the corner coming home, Sheppy, the Collie, came to meet us. He romped around the corner, and, as the driver loves to run with him when she is loose in the pasture, she seemed to think it was a challenge for a merry game. With unexpected suddenness she lumped forward and sideways, and in half a second we were sitting on the road. I never knew anything to go over so suddenly since I was spilled out of a canoe one summer in Muskoka. The cutter simply went out from under us with a side twist that emptied it of everything bigger than a spool of thread. Luckily no one was hurt, and with a laugh over our mishap, we picked ourselves up and gathered our belongings and resumed our homeward journey. It was a great day and a great trip, and we enjoyed ourselves every minute.

I have heard farmers say that they would be glad if we had no snow. They say that since we have no more cordwood or logs to haul we would be better off without it. They think wagons and buggies are good enough. Well, they might be if the roads were good all the year round. But I enjoy the snow and sleigh-riding is a joyous occupation that is in every way more delightful than the best buggy-riding. The only members of our family who object to the snow are those who have new hockey skates and shoes, and are deprived of the ice on which they were skating. The snow drifted and filled

the government drain level so that they would have to shovel away from two to three feet snow before they could get back to the ice. And shovelling paths to the stable and around the houses seems such killing work that I doubt if they will have the courage to clear the ice. Still, they had to shovel the paths, and that somehow seems to make the work much harder. As I think it over I feel that it will not be surprising if a decent skating place happens to be shovelled clean before night. The snow doesn't seem to stick so tight to the ice as it does to the ground, and it doesn't seem so heavy. And besides, no one has ordered the boys to clean the ice. All these things make a vast difference as every head of a family knows. But while the boys are skating we of the older generation would do well to meditate on the advantages of having good roads at all times of the year, just as we have after a snowfall. If it would make us as cheerful in the summer as it does in the winter we should leave nothing undone to promote the building of good roads—for ourselves, rather than for the joy riders in automobiles.

THE DAIRY.

Making Buttermilk Cheese on the Farm.

Editor "The Farmer's Advocate":

On the farm the manufacture of buttermilk cheese in small quantities for use on the table, or for sale, is an easy matter, requiring little time or labor, and only ordinary kitchen utensils. The product is preferred by many people to skim milk cottage cheese as an article of food, because the buttermilk cheese has a fine buttermilk flavor and is always soft and smooth in texture. It is a sanitary and wholesome product, more so than some of the skim milk cheese which is made at the present time.

Farmers delivering cream at a co-operative creamery should inquire of the buttermaker what becomes of several thousand pounds of buttermilk made every week, how much it is sold for, and whether it would not pay to make all or a part of it into buttermilk cheese for sale locally, or through butter buyers in the city market.

Skim milk cottage cheese, if slightly overheated in making, becomes hard, dry and tough, and is unattractive and unsalable. On the other hand, the cheese made from buttermilk is not injured by overheating. It can be heated to 140 degrees or higher for an hour or more during the process of making. This cannot be done with skim milk cheese. This heating is a great advantage, for it is sufficient to destroy all disease germs which might happen to be in the milk, such as those which produce tuberculosis, etc., and prevent them from getting into the cheese.

In the days before the hand separator was so widely used on the farm many creameries heated all of the skim milk before the patrons took it home, for the purpose of preventing the spread of tuberculosis germs from one farm to another. It is equally important to-day that buttermilk obtained at the creamery is freed from disease germs by the heating necessary in the making of buttermilk cheese.

Only pure buttermilk is used in making buttermilk cheese. As soon as the churning process is finished the buttermilk is drawn from the churn into a large tin pan or granite covered metal kettle, or a clean, new tin wash boiler, kept especially for the purpose of making cheese. It is then set on the stove. When fire is needed for preparing the next meal the buttermilk is heated, with occasional stirring, until it is scalding hot. If a dairy thermometer is at hand it is better to use it and heat the buttermilk to a temperature of about 130 to 140 degrees. It is then removed from the stove, covered and left standing for about an hour. During this time the curd of the buttermilk separates from the whey and rises to the top of the liquid in a compact, floating mass. This curd is used in making the cheese, and the whey is as good for feeding hogs as most cheese factory whey. If only one or two gallons of buttermilk are being used the curd can easily be collected by pouring the entire lot of material into a cheesecloth bag, when the whey will run through at once and the curd will be saved. Where larger amounts of buttermilk are handled at one time, it is not so easy to pour it out, but the curd can be taken off the top of the liquid with a skimmer and laid on the cloth to drain. In a short time the curd is found to be dry enough to suit the maker, and is then ready for salting, after which it is eaten or sold.

The proper consistency for buttermilk cheese is easily determined. It should not be salted while it is so wet that it will run like hot porridge, but should be drained dry enough so that it can be molded with a spoon, and will keep its shape like a dish of ice cream or jelly. If made too dry it can be moistened with a little water. The consistency of the cheese is controlled by the time it is left to drain, not by the temperature

to which it is heated, although it will drain faster if warm than if cold. It is not necessary to add milk or cream to buttermilk cheese to improve its flavor, as is often done with skim milk cottage cheese.

In salting buttermilk cheese it is better not to guess at the amount of salt used, but weigh the cheese in the cloth on the butter scales, and then weigh out the salt in the proportion of one ounce of salt to five pounds of cheese. After thoroughly stirring the salt in, the cheese is ready for use. It can be put in one-pound balls or cakes and placed on sale in grocery stores, or grocers will buy it in bulk, and weigh it out in paper oyster pails for consumers. When shipped to city markets it is best packed in paraffined tubs like butter. The cheese can also be sold readily with other farm produce to consumers in local markets. Buttermilk cheese is used in the household, on the table, and also by bakers, most of whom prefer it to cottage cheese for making cheese cakes.

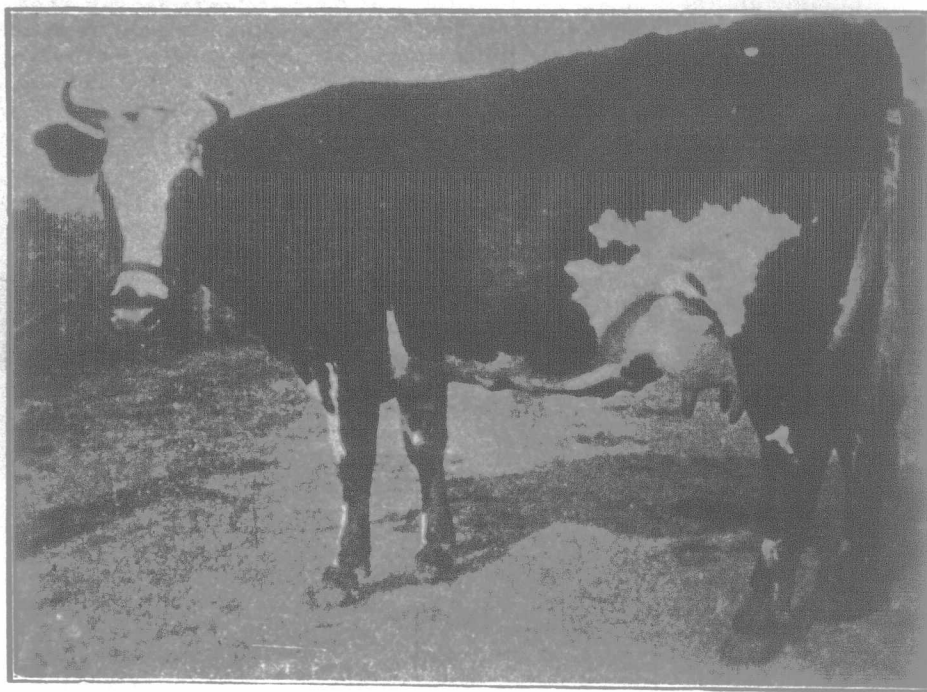
Johnson Co., Ill. W. H. UNDERWOOD.

A Great Record.

Herewith we publish an illustration of a grade Shorthorn cow, owned by Culver Finch & Son, of Mapleton, that has recently completed a year of remarkable milk production. This cow was four years old when she started her test on the 16th of last December, and in the succeeding 365 days produced 18,982 pounds of milk and 715.9 lbs. of butterfat equal to 894.8 lbs. of butter, her best day's milk was 81 lbs., and in January last produced 2,258.5 lbs.

This cow, as far as can be ascertained, contains nothing but Shorthorn blood, and undoubtedly could have been registered had not the registration of some of her ancestors been neglected.

In type she is a picture, and apparently all the milking Shorthorns are not owned in England, as this record shows the possibilities of the breed along the lines of milk production.



A Heavy Producer.

Grade Shorthorn cow which in one year produced over 18,000 pounds of milk.

That this cow is persistent is shown by the fact that she has a private record, as one year old, of 10,000, and, as a three-year-old, of 15,000.

Weights of milk and fat tests were made by R. O. P. officials, and, therefore, the accuracy of record is not open to question.

Miss Dairymaid and the Wolf.

The professed desire of the imitation butter interests to aid the Canadian farmer by creating a better market for the tallow and other fats taken out of his cattle and to supply the consumer with cheaper foods, reminds one of the juvenile tale of Little Red Riding Hood. When on her way over the bush road with a basket of nourishing comforts, including cakes and buns, for her grandmother, she was accosted in a gentlemanly way by a hungry wolf, who manifested a sympathetic interest in her mission and learned where she was going. Bidding the little maid adieu and being more swift-footed he soon arrived at the lonely cottage. With his somewhat skillful imitation voice he learned how to pull the latch string and once in the house the old lady (consumer) was devoured in a trice. He promptly encased himself among the blankets, awaiting the arrival of Red Riding Hood and her basket. She was only preserved from a fate similar to that which overtook her unsuspecting relative by the fortunate appearance on the scene of some woodmen, whose axes put an effectual prohibition upon any further destructive designs of Mr. Wolf. By many he is regarded as a

rather remarkable prototype of the benevolent Mr. Oleo, who has been so disinterestedly nosing about Canada for some time and for whom our legislative and administrative wood rangers would do well to keep their weapons properly sharpened.

Aids to Clean Milk.

Strict economy is necessary, says a New York Bulletin, at every point in the present-day production of milk if profits are to be shown. Improvement has been demanded in sanitation and calamitous vicissitudes of the weather must be borne. The milking machine may be used to advantage in large herds and the small-top pail will shut out one-half the dust and germs that make milk impure and does not especially increase the labor.

Some remarkable results of experimental work carried on at the New York Station were obtained and operations found to have no value in keeping down the germ content of milk were: (1) Ceiling the stable with lath and cement and whitewashing the interior and painting the woodwork; (2) Clipping the udder, flank and adjoining portions of the cow led to a slight increase in the germ content of milk when the cow was cleaned either by hand or with a vacuum cleaning machine; (3) Cleaning the cows with a vacuum cleaner at the rate of one cow per minute resulted in practically the same germ content of the milk as cleaning with a brush and comb at the rate of two cows per minute.

When the station barn was constructed in 1904, the cow stable was ceiled at the top and sides with planed, beaded, matched Southern pine, which was finished with a coat of oil and shellac in accordance with accepted dairy construction at the time. Modern sanitarians find fault with this finishing of the stable since the joints and beading of the wood allow considerable accumulation of dust, and they usually recommend the use of lath and cement. This

gives a tight ceiling and a smooth finish to which little dust can cling. In our stables, also, the stanchions are not of the type now most highly recommended, as they lack a little in simplicity and afforded many places for the lodgment of dust. In order to contrast the effect of this older construction under unfavorable conditions with the newer construction at its best, dust was allowed to accumulate on walls, ledges and stanchions until these were in as bad a condition as would be tolerated under reasonably good barn management. The germ content of the milk of six cows, well distributed about the stable, was now determined at each of six milkings, three cows being milked by two men, each milker using the same pail. The interior of the stable was then

thoroughly renovated, the ceiling and walls down to within three feet of the floor were covered with wire lath with two coats of cement and the area between the cement and the floor was covered with zinc. After the plastering had been finished, the stanchions, floors and mangers were thoroughly cleaned, thus putting the stable in excellent sanitary condition. As soon as the barn was in order, the germ content of the milk from the same six cows was again ascertained on six days. During the test, every effort was made to conduct all the operations connected with the barn management and the examination of the milk under conditions identical with those of the earlier test, except for the renovation of the stable which had taken place. Soon after this test was completed, the wood work and iron work of the stable were painted. When the stable was again ready for use, the germ content of the milk of the same cows was again determined. The results from the 212 milk samples show no measurable effect from the change in barn conditions. Taking as a basis the results obtained in the dirty barn before plastering, the milk obtained after the barn had been freshly plastered and cleaned, showed an increase in germ content of 114 germs per unit (1 cc.), while later, when the woodwork and stanchions had received a coat of paint, the germ content was 119 per unit less than when the barn was at its worst.

In previous studies made at the Station, it was found that the udders of different cows normally contained quite widely varying numbers of

Dr. Maria Montessori

bacteria and that the number of bacteria found in the strippings, or last milking drawn from each cow, gives a very fair measure of these bacteria in the udder. In these three tests, samples were taken from the strippings as well as from the whole milk so that correction could be applied for the bacteria of the udder. If the figures as obtained from the whole milk are thus corrected to account for the udder content of bacteria, which could not have been directly influenced by the barn conditions, the results show that the increase in the germ content of the milk during milking was greater by 44 per unit after plastering and less by 137 after painting. What these results really show is that in the last two sets of tests when the barn conditions were essentially alike and unusually clean, the observed difference in germ content is much greater than the difference between the results when the barn was clean and when it was dirty. That is, the influence of the barn conditions was so slight that it was not measurable even when care was exercised to balance all of the other factors as closely as possible.

A little more than a year after this renovation of the stable, samples were again taken as before and their germ content carefully determined. The plaster, wall and ceiling of the stable were then whitewashed and the wood work freshly painted, after which other samples were collected from cows milked under these supposedly improved conditions. As before, the two groups of samples showed little difference in the bacterial content of the milk examined. The average results differed by only 240 germs per unit, with the advantage, if any, in favor of the milk produced before the whitewashing and repainting. These results were so close that no one would be justified in assuming that the data show whitewashing to be an unsanitary practice and calculated to increase the germ content; on the other hand, they offer no support for the common notion that whitewashing of the stable is an important sanitary practice with a strong influence upon the quality of the milk.

The results from this whole series of tests upon the effect of barn conditions suggest that the importance of barn construction has been considerably over-estimated and that within rather wide limits the condition of the stable exerts no measurable influence upon the germ content of the milk produced within it.

Another dairy practice strongly recommended where clean milk is desired is the clipping of the flanks, udders and part of the tails of the cows. Theoretically, this seems a most excellent practice, well adapted to facilitate easy and thorough cleaning of the cow before milking, and the results from the tests of the practice made in our stable were decidedly surprising to the investigators. There are some difficulties in making a test of this kind since it is impossible to alternate the cow on both sides of the experiment in short periods as it requires considerable time for the animal to return to an unclipped condition after she has been clipped. Care was taken, however, to make the test under conditions as nearly alike as possible except for the factor of clipping and it is believed that the results are reliable. In a preliminary experiment, the germ content of the milk from two cows was determined for six days, after which the udders and flanks of the cows were clipped and bacterial counts again made of their milk for a similar period. In this test the general averages appear to show that clipping increased the germ content of the milk, but as the majority of the germs on this side of the test came from one cow on one particular day, too much weight cannot be placed on the results. If this particular observation be omitted, the results incline slightly to the other side of the test, that is, in favor of clipping.

In a later test, 22 samples were collected in the regular way from the milk of each of four cows from which bacterial cultures were made and plates counted as in the other tests. The udder, the flank up to the hip joint, and the tail above the brush were then clipped on each of the cows and a few days later, 24 samples from each cow were collected and tested as before. The average germ content of the 88 samples of milk from the unclipped cows was 204 per unit, or, excluding the normal udder content as determined by the strippings, 133 germs per unit. After clipping, the general average was 320 germs per unit from the clipped cows, or excluding the average udder content, 208 germs. These quite extensive measurements give an average of about 75 more germs in the milk of the cows after they had been clipped than before. This would seem to indicate that clipping cows increases, rather than decreases, the probability of germs finding their way into the milk during the milking process. The data certainly do not support the prevailing idea that clipping the udders and flanks of cows is a valuable aid in the production of sanitary milk.

Reasoning on general principles, it is quite logical to assume that the vacuum cleaner would prove as effective when applied to the coats of

cows as it is in the household and many departments of business. The use of such an apparatus is quite feasible where the milking machine is installed since a vacuum pump is used in connection with the milker. Such a method of cleaning has been recommended by the American Association of Medical Milk Commissions. In a careful series of tests made in the New York Station stable, the germ content of the milk was not reduced by the use of the vacuum cleaner and more time was needed to go over the cows than when currycomb and brush were used. Some difficulty was met with at first in securing what seemed to be an effective vacuum and comparative tests made under these conditions showed a disadvantage, even in the germ content, in the use of the vacuum cleaner. When arrangements were made, by which the vacuum of approximately one-half an atmosphere could be regularly maintained, the differences in germ content between hand cleaning and machine cleaning practically disappeared, but, as stated before, the time required for each animal was greater with the machine than when cleaning by hand. These results, as a whole, do not seem to justify the purchase of a vacuum cleaner for use in the cow stable.

In all of these tests the bacterial counts of the milk as drawn were very low and changes in stable conditions seemed to exert no measurable influence upon the number of these organisms present. This raised the question as to what are the important sources of bacteria in milk.

Accordingly, on 17 days the germ content of a pail of milk was followed from the cow through the various operations in preparing it for the consumer. At the station, the milk is taken to a small milk room, separated from the stable by a single door, poured over an aerating cooler, collected in a second pail and taken in this to the dairy. Here it is passed through a cloth strainer into a third pail in which it is placed in cold water until needed. All these utensils are cleaned with hot water and sal soda and treated for ten to fifteen minutes in a steam box. The cooler was not protected in any special manner during use, though the milk room was kept moderately clean.

Samples were taken which represent the strippings, and the milk in the pail, after leaving the cooler, after arriving at the dairy, and after straining into the final can. On all of these days except two, the germ content of the milk at every stage was very low, the averages for the entire period showing 57 bacteria per unit in the strippings, 161 for the milk in the pail, 426 after cooling, 443 when it reached the dairy, and 474 after it had been strained. On two days there was apparently some slight contamination of the milk during cooling, but even then it had a germ content which was surprisingly low. These figures were obtained when the dairy operations were all conducted in the ordinary way and show that with reasonably careful handling in a moderately clean stable and clean dairy room, the germ content of the milk can be kept low without special elaborate precautions. The small count throughout in this particular case was due to the fact that the milk was furnished by one cow which had a rather low udder content.

It is common in discussions of the sanitary quality of milk to use, as a general standard, a germ content of 10,000 germs per unit as insuring a milk which is above suspicion of uncleanness. In obtaining milk which shall be safely below this 10,000 limit, it is the custom to spend much labor in washing the cows and in keeping the interior of the barn scrupulously clean. In all of the tests discussed the germ content has been very low, seldom exceeding 1,000 germs per unit, of which number about one-half are germs normally present in the udders of the cows.

This milk was produced under general conditions which appear to be no better than those surrounding a considerable number of ordinary city dairies, conditions which probably would not be acceptable to any certified milk commission. Notwithstanding these facts the extended study of the product indicates that in bacteria, content at least it is of the very highest quality. That milk of this quality is not uniformly produced under such general conditions is illustrated by the fact that a local commercial dairy in which the methods and equipment resemble those at the Experiment Station, except that steam is not available for treating the utensils, quite uniformly turns out a product with a content approximating 1,000,000 germs to the unit.

What, then, is the difference between these two dairies? At the Station the stable is kept cleaner, the cows are much cleaner, the milkers are cleaner, and the utensils are thoroughly steamed. Apparently the wide difference in the germ of the product from the two dairies lies in the influence of one or more of these factors. The important fact, which is being gradually recognized through these and similar observations is that the production of a reasonably clean milk

with a low germ content will be a far simpler and less expensive undertaking when the factors that really govern its production are actually understood.

POULTRY.

The Winter Tonic for the Hens.

A few years ago there was very little heard about green food for fowls in winter, but from experience it has been found that a liberal ration of succulent food tends to maintain health and vigor of all the birds and increase the egg production of the laying hens. To be entirely satisfactory this class of food must be produced at small cost. At the Maine Station several years of experimental work have shown that the fowls need something besides succulence in their so-called green food. They make a distinction between a succulent fodder and a "green food" in the strict sense. Succulence may be supplied in the form of root crops, such as mangels, but a careful consideration of the case has made it apparent that the fundamental need of the fowls is not for succulence as such but rather for the tonic effect which is produced by green plants, probably primarily because of the presence of chlorophyll. In feeding fowls for high-egg production it is necessary that they be given a ration rich in protein. Only fowls of strong constitution and with thoroughly sound digestive systems can handle the heavy-laying rations carrying meat scrap and oil meal, which are now so widely used by poultrymen for egg production with successful results. On these heavy rations there is a tendency for the birds' livers to become impaired in function, and ultimately to become enlarged and diseased. As the matter has been studied at the main station it would appear that one of the chief functions of green food in the ration is to counteract this tendency of the digestive system, and especially the liver, to break down under the strain of handling heavy-laying rations over a long period of time. It would appear that the green food given to poultry acts primarily rather as a mild tonic than as a food in the proper sense. There seems to be little of this tonic effect produced from succulent non-green foods like mangels.

The practical problem then becomes to devise a system which shall insure a supply of green food for the birds at all seasons of the year. The following system of rotation in the green food supply has been in use for several years on the poultry plant at the Maine Station with satisfactory results. It should be said that, owing to the small area of ground available for the poultry work at the Station in relation to the number of birds it is necessary to carry, green food must be added to the ration practically throughout the year, not only for the adult fowls in the laying houses, but also for the flocks growing on the range. Beginning in the early fall when the pullets are put in the laying house they are given green corn fodder cut fine in a fodder cutter. Stalks, leaves and ears are cut together in pieces averaging about one-half inch in length. The birds eat this chopped corn fodder greedily. It is one of the best green foods for poultry that we have yet been able to find. Its usefulness is limited only by the season within which it is possible to get it. The feeding of corn fodder is continued until the frost kills the plants. When the corn can no longer be used cabbage is fed. The supply of this lasts through December. In the event of the supply of cabbage failing before it is desirable to start the oat sprouter, which has previously been described in these columns, the interval is filled out by the use of mangels. From about January 15 to May 15 green sprouted oats form the source of green food. From about May 15 until the corn has grown enough to cut, fresh clover from the range is used. In summer the growing chicks on the range are given rape (Dwarf Essex) and green corn fodder cut as described above, to supplement the grass of the range which rather rapidly dries out and becomes worthless as a source of green food under our conditions. The very young chicks in the brooders are given the tops only of green sprouted oats chopped up fine.

Dwarf Essex rape is an excellent source of green food for poultry, but it must be fed with great caution to birds which are laying because if eaten in any considerable amounts it will color the yolks of the eggs green, with disastrous results in the market.

Particularly Good.

Editor "The Farmer's Advocate":
Just a line of appreciation of your Christmas Number. The article on agriculture and the Bible struck me as being particularly good, and on the horse of the future was good, and Albright on the northern hardships very interesting.
Annapolis Co., N. S. R. MESSENGER.

The Farmer's Hen.

Editor "The Farmer's Advocate":

With the present high prices of eggs no doubt many of our poultrymen are thoroughly satisfied. The prices of eggs and dressed poultry are steadily advancing, while feed stuffs are only at their usual levels. This, of course, is a satisfactory state of things for the poultryman. But will these conditions last? This is a question asked by many people besides poultrymen, and still it remains unanswered. In this part of the Dominion prices have not been as high as in the West, yet they have been high enough to ensure a large profit for the producer. Fresh eggs are at present as high as 45 cents, with fancy grades selling to special consumers at 50 cents a dozen.

The following statement of what was done with twenty-five Rhode Island Red hens may interest some of the readers of "The Farmer's Advocate." The hens were of good-laying stock, although there were no fancy-bred birds among them. They were just the average of a good farm flock. The hens were housed in a building recently erected. It was of the colony type, fifteen feet long by ten feet wide, seven feet high in front and five feet high behind. It had a cotton front window three feet by four and a glass window of the same size. There was plenty of fresh air and sunlight. The floor was of boards with plenty of litter in the form of cut straw and chaff. The hens were fed the following ration, which was found to give excellent results: In the morning a meal composed of table scraps, boiled potato and turnip peelings; this was rounded off firm with grain. Noon meal consisted of two pounds wheat, and at night a feed of one pound wheat and one pound oats scattered in the litter. The birds were thus sent to roost with their crops full of grain. This practice of feeding grain for the evening meal instead of a hot mash is, I think, an improvement on the old style.

During the month of January the hens laid 303 eggs, or twenty-five and one-fourth dozen of eggs. During February they laid 249 eggs, or twenty and three-fourths dozen. During the month of March the hens laid 550 eggs, or thirty-seven and one-half dozen. These eggs sold to private customers at the following prices, which are for strictly fresh stock: Twenty dozen at 40c., \$8.00; 15 dozen at 42c., \$6.30; 21 dozen at 45c., \$9.45; 10 dozen at 44c., \$4.40; 17 dozen at 35c., \$5.95. This total of 88 dozen sold for \$34.10. During the first three months of 1913 this flock produced \$34.10 worth of eggs. The cost for feed amounted to a total of \$6.50, as follows: One bushel potatoes, 50c.; four and one-half bushels wheat at one dollar, \$4.50; three bushels of oats at 50c. per bushel, \$1.50. The profit earned by the twenty-five hens in three months amounted to \$27.60, an average of over one dollar per hen.

After the first of April the hens were given the range of the barnyard and fields, thus securing for themselves unlimited animal food in the form of worms and insects, which during the months of winter laying was supplied by meat scraps from the table. When given the range of the fields they secured all the grit and lime that was needed. In winter this was supplied by burnt bones, broken into small pieces.

When the hens were given the run of the fields it is needless to say that the egg yield was greatly increased. No records of the number of eggs produced after the first of April were kept, as it was impossible to charge the feed.

The above figures, although incomplete in respect to the number of eggs produced during the whole year and the profit therefrom, are yet sufficient to show that hens properly fed and housed are a source of profit to every farmer within the confines of the Dominion. No poultryman can compete with the farmer in producing cheap poultry and eggs. Conditions on the average farm are such that during the summer months poultry will require very little feed besides what they will pick up about the barn and fields.

The present high prices of eggs are not likely to last, but when the prices go down the farmer who feeds right will still be able to make a good profit. There is one obstacle, however, in the way of the farmer, and that is the habitual neglect of the laying stock. Most farmers think it is below their dignity to look after the hens. Any farm of ten acres or over should have at least one hundred hens on it, and these, when properly cared for, should produce a handsome profit. Let every farmer whose barnyard is infested by a flock of many-colored nondescripts apply the hatchet as soon as possible, and in their place let him get a flock of well-bred chickens of any one of the general-purpose breeds. This will result in a greater profit for himself, cheaper eggs for the consumer and more satisfactory conditions for everyone concerned.

Cape Breton, N. S. JOHN H. McDONALD.

HORTICULTURE.

Progressive Vegetable Culture.

The progressive vegetable grower is looking for new and improved ideas regarding the growing of his products, and any method by which he can realize increased returns from his garden interests him. The following methods and appliances are being adopted by vegetable men in parts of the States and may prove of interest and value to Ontario vegetable growers.

From the greenhouse vegetable growers' standpoint let us say that sterilization of soil is being extensively carried on by practically all progressive growers. In some cases steam boilers are purchased for the sole purpose of treating the soil. Some are using the inverted pan method, others the spike method, and one progressive grower in Grand Rapids has made a sterilizing apparatus which amounts to putting a modified skinner irrigation line under the soil to a depth of four to six inches and forcing live steam through the nozzles. He claims to have had better success from this method than any other employed. Sterilization will give results. This has been proven by many growers on the other side, and many make an annual practice of treating all soil in the greenhouse.

Some growers make a point of growing only one or two crops and making a specialty of those particular ones and improving as they can. They select their own seed and do their own cross-breeding and aim to supply the market with the best possible varieties of that particular vegetable that can be found. Some growers make a specialty of cucumbers, others tomatoes, and others lettuce, and during their season the quality of the produce from these specialists can be seen on the markets realizing 10 and 15 per cent. more than any of their competitors. Improved varieties are due largely to selection of seed. These men do not depend on seedsmen for their seed, but at different times go through the growing crops themselves and pick out the best plants and select their specimens from these. The progressive grower knows what his market

than at the centre and are made wide enough to permit hauling manure right into them. Several growers are making an annual practice of holding their manure four or five months in this way and advocate this method especially for the manure that is to go into the greenhouse. All liquid manure is soaked up by the coarse manure in this way and full benefit is thus gained. Some growers make pits for this manure only and build it entirely of concrete and do not drive in them, simply throwing the manure into a pile in them and watering as they see fit.

STAKING OF TOMATOES.

Possibly this scheme is being tried out more than any other by progressive vegetable growers. Fully 50 per cent. of the growers visited this summer were either experimenting with it or were beyond that stage and carrying it on as part of their yearly work. There are different methods of staking employed and as yet it is mainly the early varieties that are being staked and in quantities ranging from a few plants to one and one-half to two acres. The commonest method is to drive the stake into the ground beside the plant and tie the plant to it with either twine or raffia. Stakes are of one and one-half inch material, and made from five to seven feet in length. Plants are set 18 to 20 inches apart in the rows and three or four feet between rows. The vines are trimmed to one stem. Growers claim they get earlier fruit by nearly a week and that the quality of the fruit is improved. The estimated cost of staking plants is between 5 and 10 cents per plant.—(From a paper read by S. Johnson at the Vegetable Growers' Convention in Toronto last November).

FARM BULLETIN.

A Solution of the Living Problem.

Editor "The Farmer's Advocate":

In the last number of the "Canadian Institute Bulletin" there appears a resume of the opening address of the President of the recent International Agricultural Congress at Ghent, Belgium.

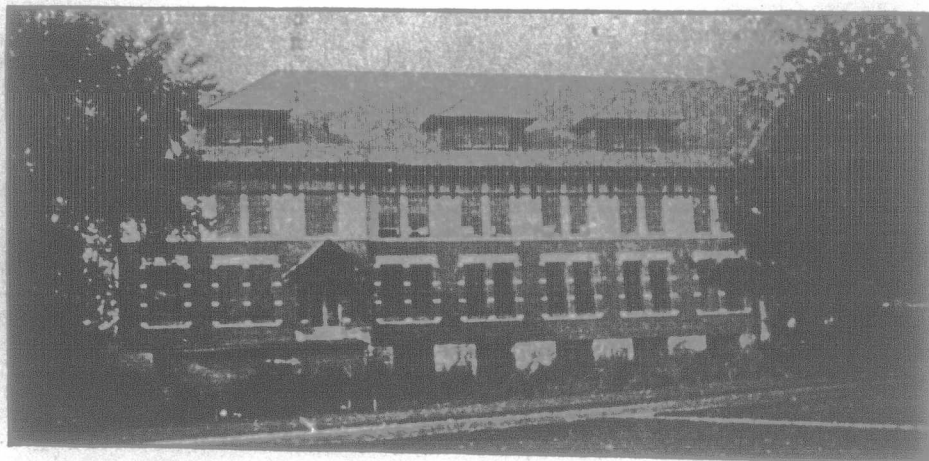
In treating of the depletion of the rural population, which, he states, tends to become a general characteristic, the fact is disclosed that the world's production of cereals and meat does not increase as rapidly as the world's population. This striking statement becomes of more interest to us as Canadian farmers on account of the marked upward movement in the prices of agricultural produce in our own country. Canada presents a case probably without parallel in so far as the increase of urban over rural population is

concerned and this in spite of the fact that she possesses the largest area of untilled wheat lands at present available to settlers, not to mention the thousands of farms suitable for stock raising that are not being worked to anything like their full capacity on account of the scarcity of help. Here, instead of having a nation where the production of food should be increasing steadily in advance of population, we find that our exportations of cattle have fallen off by 80,000 head, of sheep by 400,000, while our exports of butter and poultry are eclipsed by imports.

But there is no need for further discussion on this point; that the agricultural development of Canada has not been what, for the best interests of the nation and of the world, it should have been, is too widely known to call for reiteration. M. Melin's address would have been of no particular interest had it not been productive of some suggestion as to how this world-wide tendency towards lessened food production per capita may be checked. I will quote the concluding paragraphs in the hope that they may afford some light to our groping politicians who have set out to discover for an economic condition, causes which are apparent, to at least some, tillers of the soil.

"I draw attention to them (i.e., the unfortunate consequences of the desertion of the countryside) in the hope that the evil itself may be productive of the remedy. I know indeed of only one means of checking the rise in the price of food, and that is by continuously increasing production, the comparative scarceness of foodstuffs in the world being the main cause of their high prices.

"One must bring back to the land some part



New and Needed.

The new Field Husbandry Building at Guelph, opened January 12th. A fine home for experimental work.

demands and it is probably the main point on his score card for his selection of specimens for seed.

The large greenhouse plants around Toledo are devoted to extensive growing of cucumbers and they have adopted a device for training their cucumbers on a stake one-half inch by one inch by 7 feet in length which is fitted with a simple nail lock, one nail being driven through and another somewhat longer being driven through the stake and bent so that it forms a lock with the other nail. The bottom of the stake is either driven into the ground beside the plant or is fitted with a small resting shoe, and stands on top of the ground beside the plant. The tops are let into a piece of ribbon wire which is permanently stretched through the houses. This wire holds the cucumbers solidly in place and excellent results are given.

Growers in all sections are beginning to use the skinner irrigation system on gardens from one acre to forty acres in size with remarkable results and everywhere satisfied growers are the best answer to any question re skinner irrigation.

It is the custom of some vegetable growers to hold their manure before applying it in the greenhouse. They have told me that they find it is worth considerable to them. Some of them have built concrete manure pits and they pile the manure to a depth of three or four feet in these pits and turn the water on to the manure at intervals to keep down fire fanging. Some turn the manure at different times. These pits are built with concrete walls about one foot thick and eighteen inches to two feet high, as a rule, have paving brick laid in an inch or so of concrete for bottom. They are higher at the ends

Dr. Maria Montessori

JANUARY 15, 1914

THE FARMER'S ADVOCATE.

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of the unthinking crowds which pour into the great towns, crowds which the State wishes to draw into and retain in these centres. In order to counterbalance the attractions of town life, we must give agricultural laborers houses as comfortable as those built for town workers. We must endeavor to turn them into small owners in order to bind them to the soil. . . . Life in the village or country must be made more attractive. . . . The education given to men and women should create in them a love and pride in the agricultural profession. The agriculturist should be regarded as a public benefactor, and education and literature should be advocates of a rural life. So will the balance between agriculture and other industries between the country and the town, be re-established and we shall once more enjoy the benefits of cheap living."

Drummond Co., Que. B. T. REED.

Leaky Chimneys and Sprouting Dates.

Editor "The Farmer's Advocate":

In a recent issue someone was enquiring about stove pipes leaking, and no doubt your explanation of a cold chimney was quite correct. But if the fuel is wood, the trouble may be due to the partial distillation of the logs, especially if green, and this ought not to occur. When charcoal is made by the modern process the logs are heated in a tight retort, giving off creosote, wood alcohol, tar and other products which are caught and condensed. This distillation may occur in a tight box stove, with the front draft closed. What little air gets in is consumed by

the hot coals at the bottom, and the new fuel on top of the fire gives off tar and creosote which would burn if they had oxygen, but in its absence simply escape up the chimney, afterwards condensing and trickling back as described.

The remedy is more air at the front. Open the slide in the top of the fire door, if there is one; if not, and the draft is keen, put a damper in the chimney, so that it will not be necessary to shut the front so tight. Distilling fuel instead of burning it is mere waste of fuel, and should be stopped for economy's sake.

Now, I have something to report: Years ago someone told me that date stones or pits would grow, but they were indefinitely long in germinating. Some experiments of mine in the way of sticking them into flower pots came to nothing, but last summer I had occasion to take up a spadeful of earth from the corn patch, and discovered a vigorous date seedling, which was promptly potted. Later on, a dozen of them were found growing in a box of coal ashes, which had been in an out-of-the-way corner, undisturbed all summer. I fancy that the date seeds had simply been thrown on top, or at least lightly covered; but there was no mistaking them, each plant carrying its seed case as the best possible label. Some of the green shoots, palm leaves—which are single in the seedlings—were six inches long; the tap roots were even longer, and care was necessary to lift and transplant them. I cannot say that they are growing rapidly, but most of them are still alive.

Now, why should date seeds germinate in coal ashes? The only reason I can suggest is that the ashes contained some substance that softened the hard shells, and gave the datelings a chance to sprout. With this I pass the matter along

to better authorities, hoping that someone will tell me how to make them grow faster.

WILLIAM Q. PHILLIPS.

Lambton Co., Ont.

Ontario Apples Win from the World.

Ontario apples have scored still another triumph. Word has been received by the Ontario Department of Agriculture that the Ontario exhibit won the sweepstakes prize in a competition open to the world at the exhibition held in connection with the New York Horticultural Association at Rochester this week. The exhibit was prepared by the Fruit Branch, under P. W. Hodgetts, and was under the immediate charge of W. F. Kydd and W. L. Hamilton. It consisted of three boxes of Baldwins, which were secured from the Oakville Fruit Growers' Association and from the Demonstration Orchard conducted by the Department of Agriculture at Whitby during the past season. When the exhibit was planned it was found impossible to secure suitable apples of any better variety than Baldwin, and as Baldwins are not rated commercially as high as Spies, it was feared they might suffer on this account. The result, however, has proved satisfactory, and completes a remarkable series of winnings made by Ontario apples this year. It will be remembered that in the early fall Ontario apples won the sweepstakes prize in a competition at Cleveland open to the continent. Then in the late fall Ontario fruit won first prize at the Winnipeg Land and Apple show, which was open to Canada. Now they have won a competition open to the world. No better evidence could be offered as to the splendid quality of Ontario apples.

Eastern Ontario Dairymen Meet at Cornwall.

Dairying is a busy life, but its devotees are not so tied down in Eastern Ontario that they cannot assemble once a year in annual convention to discuss their problems and outline a policy for the future that may, under the obstacles that confront them, redound to the welfare of the enterprise. They have been doing this for thirty-seven years. Winter after winter they have met and dispersed, and, although the addresses and discussions have often been somewhat a repetition of previous years, yet producers and makers have gone to their homes and to their factories with a hope and an ideal which has culminated in the upbuilding of an enormous industry, and an incomparable asset to the Province of Ontario. Furthermore the principles have been so thoroughly driven home by speakers and by permanent instructors that their first attempt at a dairy exhibit in connection with the convention resulted this year in the bringing together of an exhibit of cheese that heretofore has not been surpassed in Canada for uniformity of high quality.

The thirty-seventh annual convention of the Eastern Ontario Dairymen's Association was in session during January 7th, 8th and 9th, 1914, in the historic town of Cornwall. From every viewpoint the convention was a success, but it would be more gratifying if even more farmers could attend these meetings, for the time is past when the producer on the farm has only to milk a number of indifferent producing individuals and receive his check. Conditions have changed, and farmers should apprehend them not only from the local standpoint, but from a provincial, a national and an international perspective as well. It was clearly shown that the dairyman's profits do not lie wholly in the producing end; the price is an important factor, and in order to obtain his own he must know how we stand at home, how New Zealand's and other countries' products compare with ours on the market, and how he should handle his milk at home that the maker has a chance to turn out an article that will stand against our competitors on the open market, and bring back to the farmer the price which is his own. Not until producer, maker and dealer appreciate their own position in relation to the trade and do their duty thereby will the industry be in any way commensurate with its possibilities in this country.

In opening the convention, the President, G. A. Gillespie, of Peterboro, reviewed the work for 1913, and intimated what might be expected in the ensuing year.

The first half of 1913 saw a healthy business, but, owing to the extremely dry weather in some districts and the growing demand for butter, milk and cream in towns and cities, the production of cheese showed a decrease as the months went by. The revision of the United States tariff on Oct. 3rd, 1913, by which milk and cream were admitted into that country free of duty also curtailed the make during the latter months of the year. It is also possible that the sale of dairy stock to the neighboring republic will reduce the production of milk, but the President felt that unless the best were sold

the remaining individuals of the herd, if well fed and cared for, could produce as much milk as was produced in 1913. Owing to the conditions already stated the exportations of cheese fell off by 200,000 boxes during the past year, and with the growing demand for milk and butter in the cities and with the present high price of stock, the outlook is for a yet smaller production of cheese in 1914. However, the lack of cheese and increased manufacture of butter may so alter prices as to again restore the former conditions in the factories. Mr. Gillespie could report, however, that the make of butter had increased, yet the home demand was so keen that only seventy boxes had been exported during the last fiscal year. With the growing population has developed the shipments of New Zealand butter to Vancouver, which have diminished the demand for Ontario butter in the West. In concluding President Gillespie admonished all the patrons in Eastern Ontario to stand shoulder to shoulder until the seasons of uncertain action be past, and the dairy industry emerges again as in the past the great national industry of Canada.

Secretary T. A. Thompson, Almonte, had no hesitation in proclaiming that the Association had done more to further the interests of the dairy industry in Eastern Ontario than any other organization, yet he could not commend too highly the work of the Kingston Dairy School, and that of G. G. Publow, Chief Dairy Instructor for Eastern Ontario and his staff of able assistants. It appears necessary that more stringent methods must be adopted and put into practice if the pernicious habit of tampering with milk before reaching the factory is to be altogether stamped out.

HERD MANAGEMENT.

The care and management of the dairy herd was fully discussed by Henry Glendinning, of Manilla, Ontario. In the outset he made it clear that a grade cow of the right type is often a profitable cow, and it did not matter what dairy breed a man might choose if he preferred, pure-bred stock, but it was of importance to use a pure-bred sire of the breed he might select, and that the bull must have an ancestry noted for production. His dam and granddam should be individuals that have shown themselves capable of producing both milk and butter, and possessed of a constitution that will ensure a progeny of vigorous and healthy type. Most satisfaction is derived from a policy of raising young calves that are to build up the herd. In a dairy district this may be easily accomplished on account of the skim milk, a by-product of the industry. Allow the calf whole milk for ten days and then begin to substitute it with skim milk, but do so gradually, and, at the end of three weeks, the whole milk may be dispensed with if a little ground flaxseed be added to the allowance to supply the butter-fat lacking in the skim milk. If it is a winter's calf, feed a little corn sludge, alfalfa hay and roots, but if the alfalfa hay is not available substitute a few ground oats. With this ration and intelligent care they will make a rapid growth, but they should not be allowed to

drop their first calf until thirty months of age, in order that they may develop a strong, vigorous body capable to stand the strain of future heavy production.

Clean, sanitary milk, said Mr. Glendinning, can only be produced from healthy cows housed in clean, well-lighted and well-ventilated stables with good food and pure water. He preferred the window sash to be longest up and down and made stationary at the bottom, but arranged so it will swing in at the top and admit pure air over the cattle. However, in cold weather the air should be conducted from outside near the bottom in and up so it will be dispersed over the cattle. The foul air is near the bottom, and in cool weather the outlets should commence there and empty the air above the ridge of the barn. The erroneous idea exists that warm air is foul, and cold air is pure air. Such is not always the case, and many times actual conditions show it to be quite the reverse. Along with pure air, supply good water. Fifty per cent. of the cow herself is water. Her milk contains 87 per cent. water, and her blood about 90 per cent. In addition to this, said Mr. Glendinning, all the food she consumes is carried through her body by the action of water and such an important elixir of life should be pure and uncontaminated. If it be supplied by power the well or spring may be located some distance from the buildings, eliminating the probability of infection from sewage or stable drainage. Have it always before her in clean troughs so she may procure it at will, and not gorge herself after a prolonged abstinence from it.

Fat is a valuable component of milk, but in the fodder that produces the milk we look for a goodly percentage of protein. An abundance of June grass and white clover in June makes it comparatively easy to feed the cows during that period of the year and get results. It is on account of the succulence and high protein content of those grasses, and when the winter feeder approaches these conditions he is on the right road to success. Mangels, sugar beets and corn silage are cheap, bulky and succulent fodders and make a palatable ration, but corn silage lacks in protein, and the allowance should be supplemented with clover, oats, peas and vetches. The best supplement to corn silage is alfalfa hay, and where it can be successfully grown it will supply the protein cheaper than by any other way. If protein-rich food must be purchased, wheat bran, oil cake, cottonseed meal and gluten meal are economical additions to the ration of farm-grown products.

COMMON SENSE COW FEEDING.

Prof. J. H. Grisdale, Director Experimental Farm, Ottawa, in discussing "Common Sense Cow Feeding," said, "My observation and experimental work during the past twelve or thirteen years led me to consider succulence, variety and regularity in hours of feeding as the most important factors making for palatability and higher digestibility of rations."

Feeding the cows with such products as one may grow upon his own farm, and arranging or

grouping these feeds into such rations as will insure the greatest and most profitable flow of milk, is common sense cow feeding, but it does not mean the exclusion of feeds other than those produced on the farm, as bran, oil cake, cottonseed meal, gluten, etc. On the contrary, the most profitable utilization of the home-grown crops usually necessitates the judicious use of more or less of these by-products.

By succulence is meant a juiciness in the food which is largely water, but the same amount of water supplied with a dry fodder will not produce the same results. It must be contained in the food itself, and derive some benefit from that combination which it passes on to the animal by which it is consumed. Succulence in the winter ration may be secured in several ways. The most common and the most advantageous, from the standpoint of low cost of ration, and convenience of handling is to use corn silage. Roots of various kinds may be used, however, and are very valuable for the purpose. Where both the above are lacking, succulence may be secured by cutting the straw or hay and sprinkling freely with water a few hours or even a couple of days before feeding. Adding about twenty per cent. of feed molasses to the water used for sprinkling improves the palatability and effectiveness of the ration very greatly. Succulence never means food value or nutrients. It is simply the juicy character of the fodder.

Variety in the feeds seems to add to the palatability and digestibility of the ration, and thus renders it more effective. In this connection, however, variety cannot be taken to mean a certain kind of food to-day, a different feed or combinations of feed to-morrow, and still another ration the next day. Variety should be secured by combining in the ration which should be the same, or practically the same, from day to day, as many different kinds of roughage and meal or concentrates as it is found convenient or possible to include. Feeding a meal mixture made up of oats, barley, bran, oil meal and corn is likely to give better results than a meal mixture of similar feeding value (from a chemical standpoint) including only, say, bran and barley, and will give much better results than feeding bran alone. The mixture of meal improves the flavor thus rendering the meal more palatable, and, consequently, more digestible. If it is possible, however, to have two or three quite different mixtures on the go at the same time, provided always that the same feed is fed at the same hour each day, that is, one might feed silage, straw and meal in the morning, and roots, straw and hay and grain in the evening or vice versa. It would not do, however, to feed silage in the morning one day and in the evening the next.

Prof. Grisdale expressed himself strongly of the opinion that our forage plants are left too long before harvesting. Although they may gain in total pounds yet the digestible matter in the crop actually diminishes, and the aroma and flavor are lessened. The stage at which the various forage crops are harvested has much to do with their flavor and aroma. Early-cut hay is not only superior in composition to the late-cut article, but is much more pleasant in aroma and more acceptable in flavor. The same may be said of most forage crops, the early cut, well-cured forage plant of practically every description is much superior to the late-cut, badly-cured plant of the same species.

WHAT COW TESTING HAS SHOWN.

"Is cow testing worth while?" "Yes!" declared C. F. Whitley, of the Dairy Division, Ottawa. "It must be conceded that poor yields of milk and fat frequently happen, even with mature cows, so cultivation of the dairy herd is just as requisite as pulling mustard or spudding thistles. No one wants weeds."

Following is a chart explaining Mr. Whitley's point and indicating the enormous difference in the production of individuals of the same herd.

Herd No	Best Cow		Poorest Cow	
	Lbs.	Lbs.	Lbs.	Lbs.
	Milk	Fat	Milk	Fat
1	7,465	255	3,076	142
2	10,685	329	3,920	122
3	9,411	372	2,931	108
4	10,345	513	4,690	227
5	13,100	471	4,600	165

Still another table shows the actual differences of the cows in the same herd and what the difference in butter fat meant in dollars and cents:

Herd No.	Lbs.	Difference		Value
		Lbs.	Fat	
1	4,389	113		\$33
2	6,765	207		62
3	6,460	264		78
4	5,655	286		85
5	8,500	306		91

The "average" of a herd may be very misleading. Study the individuality of each cow. Although a herd may contain some good cows, as instanced in these yields of ten and thirteen thousand pounds of milk, still they are a long way from being of even production, for low yields of thirty-nine and even twenty-nine hundred pounds are found. Continuous selection is necessary be-

fore all are up to a good level when a perfectly just and fair average may be used. These large differences are not confined to one factory or township, this matter of cow testing is no backwoods problem, but are found in all Provinces, indicating the universal need of scales and samples. The weight of milk alone is not always a correct guide as to a cow's value; in one B. C. herd the difference in value of milk alone might be put at only \$56, but taking fat at 30c. per pound, the real difference is \$85.00.

There are plenty of excellent dairy cows in Canada, the result of some clarifying process, but no system of taking merely an average of general results will ever give real credit to these masterpieces of the 20th century. Over and over again farmers have said that their judgment of some cows has been at fault; they thought this or that one a poor milker, but since keeping records they know them to be among the best. Cow testing carries conviction. The records received at Ottawa show not only remarkable contrasts between provinces, counties, herds and individual cows in the same herd, as regards yield of milk, but also as regards the fat content of that milk. It is a common thing to find cows in the same herd, while giving about the same weight of milk and other conditions equal, ranging all the way from 2.1 to 4.3 per cent. fat. A number of cows are also found with very low tests, even four to five cows in a herd ranging from 2.2 to 2.6, giving only 20 pounds of fat in June. In other herds, four and even seven mature cows out of ten give under 3.0 per cent. milk, and again under 20 pounds of fat in August. Nothing short of individual sampling reveals this.

What does this mean to a factory? Quality is worth something. Every vat in the Province of 5,000 pounds of milk testing 3.8 contains 30 pounds of fat more than a similar vat testing only 3.2; that is, the first is worth \$9.00 more per day; the liquidation of this debt therefore falls unfairly on the better cows. Notice that this is comparing only 3.8 with 3.2 milk, what then of the 2.8 and the 2.6 milk? When such facts as these are disclosed, indicating that the total product of twenty-five average cows per day in June or September is entirely lost sight of in the pooling system in every 5,000 pound vat, then we may conclude cow testing is certainly needed to give fair play.

From other figures Mr. Whitley could show that one man near Woodstock, Ont., fed and milked a cow at a profit of \$64.00 more per cow than a neighbor, who lost \$4.45.

FINDINGS IN THE FACTORIES IN 1913.

G. G. Publow, Chief Dairy Instructor for Eastern Ontario, reviewed the work of the past year pertaining chiefly to the factories and creameries.

Eight hundred and eighty-two factories were in operation at the beginning of the year and from May 1st to Nov. 1st 921,743,762 pounds of milk were delivered to these factories. The milk was contributed by 30,885 patrons from 281,489 cows. An analysis of these figures show that each cow yielded approximately 3,274 pounds, or an average of 18.2 pounds per day. From this quantity of milk the factories manufactured 86,196,383 pounds of cheese, or 1,014,000 boxes. The average amount of milk required to make a pound of cheese was 10.77 pounds. Going back to the figures of 1912, we find the amount up to Nov. 1st in 1913 is a trifle over 100,000 boxes short of that for the previous year and that for the whole season 135,000 boxes short. As a result of the trend of modern conditions it is found that 1,600 patrons who sent milk to factories in 1912 have either shipped milk or cream to the cities or have patronized butter factories in 1913, and again a very considerable amount of milk and cream was shipped to the United States during the latter part of the season and so great was the drain on the flow to the factories that over 40 discontinued the manufacture of cheese entirely to supply the demands of the new market. Eighty-eight factories, or only 10 per cent., pasteurized their whey and in this respect little improvement is shown over the previous year. Every effort in an educational way has been made to have this system adopted more universally and it is lamentable that the patrons do not appreciate the advantages of pasteurization sufficiently to make them willing to meet the small additional cost. An awakening of justice has led 79 factories to pay on the butter-fat basis and for the past year the average per cent. of the test was 3.6.

A very encouraging feature of the season's report is the fact that a total of 589 silos were erected by patrons who are rapidly realizing both the advantage and necessity of this element in the profitable production of milk. The educational work of the past is now bearing fruit in the increasing absence of defects, but it has always been the policy of the instructors to prevent defects rather than suggest remedies after they occur. The over-acid and bad flavors have been eliminated and openness remains as the principal trouble maker. There is a prevalent

custom of selling uncured cheese which has materially injured the reputation of the Ontario product and carelessness exists in the factories where the cheese is not turned regularly on the curing-room shelves or in keeping the range boards dry and clean. The shortcomings are the outcome of carelessness rather than lack of knowledge of what should be done at the factory or how the milk should be handled at home. If makers and patrons would do as well as they know there would be fewer defects and a better quality would be produced.

The output of butter in 1913 has been greater in most creameries than in 1912 and this increase, combined with the make of the new creameries in operation in 1913, will make an increase of about 380,000 pounds of butter over 1912. The average percentage of over-run for the season was 19.65 per cent. and a test of 139 samples of butter for salt showed the highest to be 6.86 per cent., the lowest .60 per cent., an average of 2.88 per cent. One hundred and seventy-eight samples tested for moisture showed a high test of 20.9 per cent., the lowest 10 per cent., and an average of 14.37 per cent. There seems to be an increasing interest among creamery men regarding the question of moisture in butter. Many endeavor to increase the moisture content and by the methods employed have lost as much or more in salt than is gained in moisture.

The quality of the butter was much superior to that of 1912, Mr. Publow remarked, particularly in the early part of the season. The quality was cleaner and milder and the texture and body of the butter was superior to that of 1912. Even more improvement might be obtained from a system resulting in the efficient cooling of the cream after it is received at the creamery.

A SURVEY OF THE DAIRY PRODUCTION IN CANADA.

"If I may be allowed to make an estimate for 1913 I would say that the value of the total production was about \$121,000,000, and as the exports for the year will be approximately \$20,000,000, the home consumption must be around the \$100,000,000 mark." In these few words and figures J. A. Ruddick, Dairy Commissioner for Canada, summed up the doings in the dairy world in Canada during 1912.

The number of cows is only one factor of the production of milk as evidenced by the decrease of cows in Eastern Ontario contemporaneous with a substantial increase in the production of dairy products. The following figures indicate the distribution of cows throughout Canada, showing where the increases and decreases have occurred during the decade from 1901 to 1911:

MILCH COWS IN CANADA.		
Province.	1901	1911.
Ontario	1,065,763	1,082,979
Quebec	767,825	753,134
New Brunswick	111,084	108,532
Nova Scotia	138,817	129,302
P. E. Island	56,437	52,109
Manitoba	141,481	155,337
British Columbia	24,535	38,953
Saskatchewan	56,634	181,146
Alberta	46,101	147,687

Totals for Canada 2,408,677 2,594,179
Increase in 10 years, 185,502.

This table shows a decrease in the number of cows in Eastern Canada and an increase in the Western Provinces, with a net increase for the whole Dominion of 185,502. That is one aspect of the situation which is not as satisfactory as it might be, because all will agree that there is plenty of room for a much greater increase. The number of cows in most counties in Ontario could be doubled without exceeding the number per acre in the counties of Oxford, Middlesex and one or two others.

While the number of cows increased only seven per cent. during 10 years, the value of the product increased 60 per cent. In Ontario, with a decrease of three per cent. in the number of milch cows, the production increased 18 per cent. In dollars and cents it means that the total product per cow increased from \$27.00 to \$42.00. Part of this increase is attributable to the higher price of dairy products and the total product sold as market milk.

The production itself shows it up in its true light and from the following table one may glean the actual conditions existing in the industry. The last column shows the per cent. increase or decrease in the various branches during the decade from 1901 to 1911:

	Per Cent. of Increase or Decrease.
Total population of Canada	*34.13
Total production of milk	*43.75
Exports of dairy products as milk	-11.05
Imports of dairy products as milk	*14.28
Total consumption of milk	*74.92
Per capita consumption of milk	*30.41
No. milch cows in Canada	*7.70
Average pounds milk per cow	*33.50

Dr. Maria Montessori

Exports of dairy products as milk is the only item showing a decrease, while all others have shown a substantial gain. The average production per cow in 1901 was 2,850 pounds. In 1911 it was 3,805, an increase of approximately 1,000 pounds per cow. Here is where we get our large increase in production with a comparatively small increase in the total number of cows.

The change in the butter situation from 1901 to 1911 is remarkable indeed and it would be all the more surprising if we could obtain figures for the year 1903, for it was at that period that Canada reached the zenith in the export trade. Statistics show that in 1901 of butter alone Canada exported 1,146,639 pounds and consumed 126,220,926 pounds. Comparing these figures with those of 1911 we see a change of conditions, for in that year we exported 3,142,682 pounds, imported 1,227,390 lbs. and consumed 200,881,407 pounds. An analysis of these figures shows that exports decreased by 80 per cent., imports increased by seven per cent. and home consumption increased by 59 per cent. It required \$17,000,000 worth of dairy products to supply the extra demand at home arising out of the increased per capita consumption in 1910 over that of 1900 and yet it was hardly thought of as an outlet of any importance. Then there is the increase in consumption due to the growth in population which amounted to \$20,000,000 more during the same period. This shows that the total home consumption in 1910 exceeded that of 1900 by at least \$37,000,000 worth of dairy products.

In making reference, particularly to the season of 1913 and how the revision of the United States tariff had affected the industry, Mr. Rudwick referred to the continued diversion of milk from the cheese factories to creameries and condenseries and to the increased shipment of milk and cream to our own cities as well as to the United States.

However, it does not appear that any great quantities will continue to flow South as that condition would raise prices in Canada to a prohibitive point and the circumstances are such that New Zealand and Australian butter is more likely to supply the demand than Canadian. Having a large surplus for export, both these countries must accept for their surplus the international value, which is lower than the ruling price promises to be in Canada. Heavy shipments of butter have already been made from New Zealand to San Francisco since the new tariff came in force on October 3rd last.

There is also food for thought in the fact that foreign butter of good quality is also coming into Canada. The last Australian steamer brought 17,500 boxes of New Zealand butter to Vancouver, a few of which were intended for Seattle. The total imports at Vancouver for the fiscal year ended March 31st last, amount to 6,018,022 pounds.

THE FARMER'S PLACE IN THE DAIRY INDUSTRY.

"A knighthood, a marriage or a monopoly," said Prof. H. H. Dean, of the Ontario Agricultural College, "take farmers and their families to the town and city now as it did in the days of King James and Queen Elizabeth." Even in those days esquires with their wives and daughters hastened to London, and statutes against the erection of new buildings in or near London were enacted to keep the rural people on the land. These proclamations were unheeded, however, and the country folk pushed into town that they might secure honors, execute suitable marriages or obtain a monopoly. Prof. Dean proceeded to show how the same conditions prevail in Canada to-day, and so long as people remain on their farms none of these advantages obtain to them. We do not find many honors heaped upon farmers, but who would appreciate them any more? About the highest honors coming to a farmer are those of School Trustee, Township or County Councillor and very rarely an M. L. A. or M. P., while a Senator among farmers is as scarce as the proverbial "hen's teeth." With regard to monopolies the country man shares very poorly, and whoever heard tell of a railroad, mining, lumbering or land monopoly falling into the hands of a farmer? Again said Prof. Dean, "If our statesmen are in earnest over this question, pass the privileges around. Who can better appreciate them than the farmer?" The wives of farmers advise their daughters not to marry a farmer. Not because there are not eligible young men among the Canadian farmers, but because she has lived the life and thinks the town or city woman has advantages which she has not. These are three of the reasons why people migrate to the city, the speaker declared, and he implored statesmen and legislators, if they were in earnest, to act quickly in righting these wrongs under which the farmer suffers.

In a survey of the dairy industry—Past, Present and Future, it was shown that the dairy farmer has not received his just reward for the capital invested, the risk involved, nor the labor performed in the production of milk, on which

rests the whole dairy industry. No class of men has worked harder, nor for longer hours than the dairy farmer, hence his reward should have been greater. The fact is that while the returns from the dairy farm have been greater than from almost any other line of farming, and the cash more certain, year after year, much of the profits which should have been the farmer's, has gone into other pockets, because of the trusting disposition of the farmers, and also because they have not been organized to demand their fair share. On an average the producer has not received more than one dollar per 100 pounds of milk for a period of years in succession, which leaves practically no profit except where land and labor are cheap. Cheap land is found in newer sections, and cheap labor comes largely from the dairyman's own family until they get wise, and the boys and girls go to the city in search of the remaining fifty cents of the consumer's dollar paid for farm products.

Whatever may be the financial returns of the other classes interested in the dairy business, it is certain that the dairy farmer is not receiving sufficient remuneration. The supervisor of farms, owned by the Borden Condensed Milk Co., in the United States, makes this remarkable confession. "The exploitation of the several farms by the Borden has also taught an invaluable object lesson to the corporation; because the company had itself always insisted, when discussing the subject, that at the price their factories pay the farmer for milk there is a big profit in dairy farming. But to their great surprise in practice, they found incontestable facts that even with silage and other home-grown roughage they actually produced milk on their own farms at a considerable loss when obliged to sell it to their own plants or factories at the same price the farmer receives." The company then put their herds to the test, and cleaned out all unprofitable cows. "Notwithstanding this drastic remedy," said the foreman of the Borden's farms, "the company fell down flat trying to make milk on their own farms, and selling the product at the same price they paid the farmer." And in conclusion he said, "It is the price that makes the profit in dairying, all other conditions being equal."

For years we have been told to cheapen production, and never mind the selling end of the business. Too long farmers have been blamed because they do not produce more milk at less cost, but, in many cases, the dairy farmer is doing the best he can under his special circumstances, and often better than his advisors could do. Prof. Dean, in these remarks, did not wish to justify the indifferent farmer nor adversely criticize those who are doing the best they can in advising farmers; but it is necessary to take into account the hard work and small returns all too common on Canadian farms. "We are facing a condition not a theory."

Assuming the role of a prophet Prof. Dean predicted that a system of credit would be evolved to relieve the farmer of the cumbersome burden of the interest toll, and that the army shouting for more production would vanish before the arising forces in defence of a more equitable marketing system, which would eliminate the unexplainable and unjust spread between the price the farmer gets for his produce and the price the consumer must pay. In order to obtain these improved conditions there must first be, "A great Agricultural Leader—a man of wisdom and courage—an Agricultural Moses to lead the people out of Egyptian bondage, through the wilderness of debt and doubt, into the promised land."

BUTTER MAKING IN EASTERN ONTARIO.

"We are again entering into one of these periodical changes which bids fair to rival in importance any of those experiences in previous years." In those words L. A. Zufelt, Superintendent Kingston Dairy School opened his address on Butter Making and its Development in Eastern Ontario. The speaker showed how the demand of our local butter markets has increased to such an extent that we no longer have butter to export, but on the other hand our imports of this commodity are growing rapidly year by year to supply this increasing demand. It is doubtful if we fully realize just what effect this importation of foreign butter is going to have on our local producers. So long as we were exporters, only a small percentage of our output of butter came into competition with foreign makes. Now, however, our entire production will be placed side by side with these foreign imports, and our success in holding our own local market will depend altogether on our ability to not only make as good, but a superior quality. Formerly we were competitors in a foreign market with our best production. We will now be fighting for possession of our own local markets where all our grades, good, bad and indifferent, will be in constant competition with the best of the foreign makes.

As Mr. Zufelt pointed out, the quality of the raw material largely influences the quality of the finished product, and in the last few years the cream, as delivered at the creameries, has shown no improvement. This does not signify

that intelligence has not been exercised on the farm, or that makers are unable to compete with those of other countries in the art of manufacturing butter. Yet we are face to face with the proposition of winning out against most aggressive foes with the added handicap of an inferior raw material. The trouble is an economic one. In endeavoring to lessen as much as possible the cost of manufacture, it was concluded that this cost could be materially lowered by hauling the cream less frequently, and we now find that whereas the cream was hauled three times a week a few years ago it is now being hauled only twice, and in many cases only once per week. In short it is a clear case of a sacrifice of quality for a doubtful saving in cost of manufacture, and the speaker said, "I feel that I cannot too strongly condemn this practice, which is perhaps the most prevalent one in all lines of dairy production. We are too prone to effect a small visible saving at the expense of a much larger loss in quality." Under these conditions the good work of the producer's care at home is nullified by this practice of lessening the number of deliveries per week to the creamery.

Another handicap to the betterment of the factories' make is the fact that a careful patron's work is not rewarded by a recognition of his superior product. In proof of this one might point to the rapid strides made by some of our sister provinces in raising the standard of quality of their butter from the lowest to the very highest in the Dominion by the simple expedient of a system of cream grading at the creameries. And this system is to be furthered by applying it to the butter, which in future will be graded, as well, and sold strictly on its merits. The careless producer or manufacturer can no longer pool his interests with his more progressive neighbor nor shift his personal responsibilities to the shoulders of others. Our defect is not in a lack of education or of knowing how to produce a high grade product, but rather a system which offers no reward to the individual for individual merit.

As a suggestion Mr. Zufelt recommended that too many transferring their allegiance from the cheese factory to the creamery would militate to the injury of both industries, and, in order to improve the make of butter, that they employ as butter makers only those who have the necessary qualifications, introduce a system of grading cream at the creameries whereby the individual producer will receive a just reward for his industry, and supplement the foregoing by some method that will insure the butter being sold on its merits.

THE DISTRICT REPRESENTATIVE AND THE DAIRY FARMER.

The fact was brought out by E. P. Bradt, District Representative for Dundas County, that there is room for assistance and educational work among the young dairymen of the country, and that that is where the representative is willing and ready to work. Cow testing is an important expedient in building and grading up a herd, and the representative coming in contact with the farmer quite often may induce him to adopt the system or assist him in making the tests. Again the Farmers' Club, as organized by the representative, is a modern medium for the distribution of dairy information, and at such gatherings the matter of feeds and feeding often arises. The farmer understands his feeds and technique of placing them before his animals, yet the representative can assist him in combining his various feed stuffs into a ration that will have the required amounts of each food, at his disposal, in the mixture to give the properly balanced ration that may be fed with the greatest gain.

Educating the boys and girls in the principles and practice of dairying that they may assume an attitude of interest in the work that will make it easier for them, is one avenue the representative has chosen leading up to bettered conditions. "After all," said Mr. Bradt, "any work is drudgery if we are not interested in it, and the hardest work is a pleasure if we are interested." The six-week's course for young men, where milk testing, the principles of breeding and all matters pertaining to dairying are threshed out by the students, is doing much to awaken more interest in the work, and make it appear like a business to be founded on business principles, and to be conducted in a business-like manner.

THE SHIPPING END.

The export end of the industry was discussed by A. J. Ayer, A. C. Wieland and E. Denning, of Montreal. Mr. Ayer declared the quality of the Canadian product as good and likely to suffer little in this regard if it be given intelligent care in production of the raw material on the farm, and in the making at the factory. Mr. Ayer said he believed the production could be increased by 50 per cent. without increasing the number of cows now on the farms. Mr. Wieland vindicated the dealer in connection with profits from the exporter's end of the business. "No business," said Mr. Wieland, "is transacted on

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so narrow a margin." One-quarter of a cent per pound is all the dealer may expect through the transaction, and now that New Zealand lays her product down on the Old Country market when ours is getting low, nothing is to be gained by storing quantities over the winter and incurring the risk. When the product must be delivered to the British consumer for fifteen, sixteen, or seventeen cents per pound there is little room for speculation in the commodity for the dealer. Mr. Denning expressed himself as sorry that the exporters could not receive for sale such high quality as was exhibited at the convention. The average of the points proved to be in the vicinity of 95, but what came into Montreal was far below that in quality. Mr. Ruddick had samples of New Zealand cheese boxes and packages which he explained to the convention, and intimated that, as the supply of elm became scarce in this country, they might be forced into using some such container for their cheese. Even now the depletion of good elm is in sight, and the customary Canadian box is a fragile package. These conditions augur for the near future a changed box, but the dealers were unanimous in clinging to the standard box so long as material was forthcoming to manufacture the supply.

THE DAIRY EXHIBIT.

In presenting the judge's report of the Dairy Exhibit, Geo. H. Barr, Chief of the Dairy Division, Ottawa, very highly commended the quality of the cheese, and commented on the uniformity of the high quality. In many cases the scores showed no difference for the best three or four in each class, and the money was divided evenly between them. There were 190 cheese in the exhibit, but no outstanding winner. On the other hand, however, one or two were noticeably bad, but they were so few in number that the entire exhibit was par excellence in appearance. If one were prone to criticize adversely, it might be suggested that more finish could have been added to the individuals, and the cap-cloths could have been put on more firmly.

First-prize awards.—September, white cheese: 1, 2 and 3, tied at 97 and two thirds points, E. E. Diamond, Cooper; Norman H. Purdy, Belleville; and Jas. W. Johnson, Campbellford. September, colored cheese: 1, J. W. Fretwell, Oxford Mills, 97 and one-fifth points. October, white cheese: 1, Benson Avery, Kinburn, 97 and two-thirds points. October, colored cheese: 1, Howard Holmes, Peterboro, 97 and two-thirds points. Two Canadian flat cheese: 1, Gordon Hough, Perth, 98 points. Three Canadian Stilton cheese: 1, Wm. Eager, Morrisburg. Fifty-six pound box October butter: 1, D. A. Roe, Maxville. Twenty-four prints October butter, F. D. Booth, Fenton Falls.

EVENING MEETINGS.

Hon. James Duff, Minister of Agriculture for Ontario, commented on the national importance of the dairy industry, and what it meant to Ontario. At this critical time in the cheese industry the Minister advised the patrons to "Stand Pat" and remain fixed to the "Hitching Post" that has meant the upbuilding of so great an industry.

Prof. Harcourt, of the O. A. C., discussed the "Food Value of Milk and its Products," and showed how milk at eight cents a quart is a cheaper source of nutrients than meat as ordinarily retailed. Furthermore it is certain that milk and its product used along with the cereals

are a cheap source of nutrients and energy, and that when the two are used together a sufficient supply of all the essential constituents for growth and repair of the tissue of the body, and for work can be obtained without the use of the more expensive meats.

Human food like that of animals is made up of proteins carbohydrates and fats. The white of eggs is a good example of protein, while meats are usually purchased to supply that requirement in our food. Carbohydrates are composed of starches, sugar and the like, while fat is commonly found in butter, fat meat and a small quantity in vegetables. Protein is expensive in any form, but it exists in cheese in quite large amounts, and Prof. Harcourt recommends its more liberal use in our selection of foods. In experiments on human subjects at stations in the United States it was proven that almost one-half pound per day could be consumed along with wheat bread, and oranges or bananas and give no deleterious results. The experiments showed that 95 per cent. of the protein and fat of the cheese was digested, and more than 90 per cent. of the total energy derived from them is available for the body. One pound of cheese contains as much food material as two pounds of fresh meat; three pounds of fish or two pounds of eggs. When it comes to the acquisition of carbohydrates or energy producing food the cereals are the most economical, and a more liberal use of them along with milk would sustain the body more economically than the expensive cuts of meat.

"Farmers can only teach their sons what they know," said Dr. Creelman, President of the Ontario Agricultural College, Guelph, "but in order to understand the weeds, insects and diseases which are constantly confronting the farmer, he should go to an Agricultural College. The only place to learn farming is on the farm, but the college takes bright young men from the country and after a few years' of instruction returns them to their homes better fitted to conduct their business and better farmers." If this practice be followed out, intimated Dr. Creelman, and then in days of retirement the farmer should establish his home within sight of the acres on which he has labored he will live a happier life with a happier termination than though he retire to a town or city.

G. A. Putnam, Director of Dairying and Superintendent of Farmers' Institutes, Toronto, rebuked the leaders of the Convention for not giving women more credit for the success of their industry, and he expressed himself convinced that without the women 95 per cent. of those now in the dairy business would have ceased operation. There are now over 800 organizations in Ontario under the name of Women's Institutes and they are doing a good work in the way of stirring the men up to introduce better school systems and social conditions in the Province. Mr. Putnam did not conclude without voicing a strong plea for a more elaborate adoption of the co-operative spirit in the dairy business. He claimed that the good prices and good conditions existing in Canada and European countries are due for a co-operative execution of the marketing end of the industry.

In a spirit of the humorous and serious, Andrew Broder, M. P. for Dundas County, spoke of the development in Eastern Ontario. Going back to the year 1826, he said there were only

7,667 milk cows in twelve different townships, in Eastern Ontario. Now in the County of Dundas alone there are 26,000 milk cows and 19,000 non-milkers and he implored patrons of the industry in other counties to apply themselves more strenuously to the task of production and through more thorough cultivation maintain more cows. The high cost of living seems to be rampant in the minds of most platform speakers, but Mr. Broder has partly vindicated the producer and lays the blame at the door of the town and city woman, who instead of taking her basket on her arm and going to the market place and meeting the producer there, she 'phones her greengrocer to send up a turnip or a cabbage to a remote corner of the city. Here, said Mr. Broder, is where the greater part of the price of produce goes.

Hon. Senator Derbyshire and J. R. Dargavel, M. L. A., presided over the evening meetings, which were largely attended and enjoyed by the people of Cornwall.

OFFICERS FOR 1914.

At the Directors' meeting on the last day of the Convention J. A. Sanderson, of Oxford Station, was elected President for the ensuing year. Other officers were elected as follows: First Vice-President, J. Nelson Stone, Norham; Second Vice-President, R. G. Leggatt, Newboro; Third Vice-President, Joseph McGrath, Mount Chesney; Treasurer, James R. Anderson, Mountain View; Secretary, T. A. Thompson, Almonte; Executive Committee, J. A. Sanderson, G. A. Gillespie, Henry Glendinning, R. G. Leggatt, J. Nelson Stone, Joseph McGrath, Neil Fraser, W. H. Olmstead.

A Good Holstein Sale.

The Holstein sale of J. A. Stewart, Sr., of Menie, Ont., which was advertised in these columns was a great success. Thirty-five head were disposed of, and very few of them, including calves, did not make over \$100. The four-year-old cow, Catharine De Kol Posch, topped the sale, going to Wm. Cooney, of Stirling, Ont., at \$320. Geo. Cooke, of Stirling, got the three-year-old Norine Johanna Posch at \$270, the second highest price. At this same figure Wm. Cooney also took Mabel De Kol Echo. Eight of the thirty-five head sold brought over \$200 each and with the exception of calves only three of the entire lot brought less than \$100 each. The thirty-five head, including calves, averaged \$142.50 each, a very satisfactory figure considering that many calves and young heifers were included in the offering.

Poultry Short Course.

The Poultry Short Course at Macdonald College, St. Anne De Bellevue, Que., will be held during the three weeks from February 16th to March 6th, 1914. M. A. Jull, manager and lecturer, has arranged a very complete course of lectures and practical work to extend through the entire course and cover the poultry industry thoroughly from A to Z as well as outlining all the questions and principles upon which the poultry industry is based. These topics will be discussed by Mr. Jull, Dr. F. C. Harrison, F. C. Elford, W. A. Brown, Miss F. Campbell, Professor T. G. Bunting, L. S. Klinck, W. Lockhead, as well as others prominent in poultry and associated practices.

Markets.

Toronto.

At West Toronto, on Monday, January 12, receipts numbered 130 cars, comprising 2,489 cattle, 1,762 hogs, 754 sheep, and 63 calves. Quality of cattle fair to good. Trade active, and prices 10c. to 15c. higher than close of last week. Choice steers, \$8.50 to \$9; good steers, \$8 to \$8.50; choice heifers, \$8 to \$8.50; medium steers and heifers, \$7 to \$7.50; cows, \$4 to \$7.50; stockers and feeders, scarce and firm; good to choice feeders, \$6.50 to \$7; medium feeders, \$6 to \$6.40; stockers, \$5 to \$6; milkers, \$60 to \$80; veal calves, \$5 to \$12 per cwt. Sheep, \$6.25 to \$6.60; lambs, \$9 to \$9.35; hogs \$9 fed and watered, and \$8.65 f. o. b.

REVIEW OF LAST WEEK'S MARKETS

The total receipts of live stock at the City and Union Stock-yards for the past week were:

	City.	Union.	Total.
Cars	9	381	390
Cattle	140	4,915	4,155
Hogs	114	9,982	10,096
Sheep	85	2,099	2,184
Calves	36	339	375
Horses	23	58	86

The total receipts of live stock at the two yards for the corresponding week of 1913 were:

	City.	Union.	Total.
Cars	44	370	414
Cattle	558	4,637	5,195
Hogs	586	8,818	9,404
Sheep	289	1,891	2,180
Calves	34	410	444
Horses	18	63	81

The combined receipts of live stock at the two yards for the past week, show a decrease of 24 carloads, 940 cattle, and 69 calves; but an increase of 692 hogs, 4 sheep, and 5 horses, compared with the corresponding week of 1913.

Receipts were not large, but larger than for the previous week, and not large enough to supply the demand. There was not a single class of live stock that had a supply great enough to equal wants of the trade. Trade was active and prices very firm, and in one or two instances 25c. to 50c. per cwt., in advance, was paid for some choice, heavy steers, for the Montreal market, but the bulk of the finished cattle sold during the week at \$8.25 to \$8.50.

Butchers.—Choice steers, \$8.25 to \$8.50; good steers and heifers, \$8 to \$8.25; medium steers and heifers, \$7.25 to \$7.75; common, \$5.75 to \$6.25; choice cows, \$6.75 to \$7.25; good cows, \$5.50 to \$6.25; medium cows, \$3.75 to \$4.50; common to choice bulls, \$4.75 to \$7.50, and in one instance \$8.

Stockers and Feeders.—The supply of feeders and stockers was limited, with

few choice steers amongst them. Choice steers sold at \$6.50 to \$7; good, \$6 to \$6.50; stockers, \$5.25 to \$6.25.

Milkers and Springers.—A moderate supply met a ready market each day of the week, at prices ranging from \$55 to \$95 each, the bulk selling from \$65 to \$80 each.

Veal Calves.—Never during the week was the supply large enough to satisfy the demands of the trade, and prices were as firm as ever. Choice calves sold at \$10 to \$11.50 per cwt.; good calves, \$9 to \$10; medium calves, \$7 to \$8.50; common calves, \$5.75 to \$6.75.

Sheep and Lambs.—Light receipts of sheep and lambs caused prices to go higher all round. Sheep, ewes, light, \$6 to \$6.25; heavy ewes, \$5.25 to \$5.75; culls and rams, \$4 to \$4.50; lambs, \$8.75 to \$9.25.

Hogs.—Hog prices were hard to gauge, but \$9.10 to \$9.25 for selects fed and watered, is what the bulk of the hogs were sold at, although we heard of some being bought at \$9.

BREADSTUFFS.

Wheat.—Ontario, No. 2 red, white or mixed, 81c. to 85c., outside; 88c., track. Toronto, Manitoba, No. 1 northern, 93c. to 94c.; No. 2 northern, 91c. to 92c.

Oats.—Ontario, new, No. 2 white, 53c. to 54c., outside; 55c. to 56c., track,

Toronto. Manitoba oats—No. 2, 41c.; No. 3, 39c., lake ports.

Rye.—No. 2, 63c. to 64c., outside.

Peas.—No. 2, \$1 to \$1.05, outside.

Buckwheat.—No. 2, 66c. to 68c., outside.

Corn.—American, No. 3 yellow, 72c., all rail, track, Toronto.

Barley.—For malting, 54c. to 55c.

Flour.—Ontario, 90-per-cent., new winter-wheat patents, \$3.60 to \$3.70, bulk-seaboard. Manitoba flour—Prices at Toronto are: First patents, \$5.30; second patents, \$5; in cotton, 10c. more; strong bakers', \$4.60, in jute.

HAY AND MILLFEED.

Hay.—Baled, car lots, track, Toronto, \$14 to \$15 for No. 1.

Straw.—Baled, car lots, track, Toronto, \$9 to \$10.

Bran.—Manitoba bran, \$22.50 to \$23.50; shorts, \$23 to \$25; Ontario bran, \$22.50 in bags; shorts, \$24; middlings, \$25.

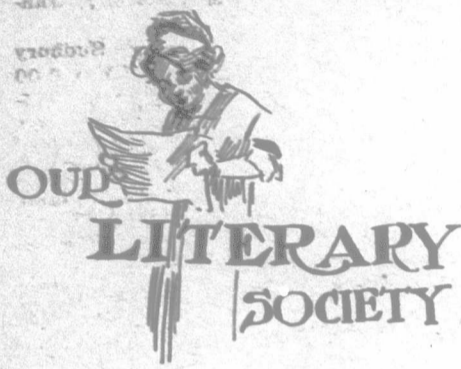
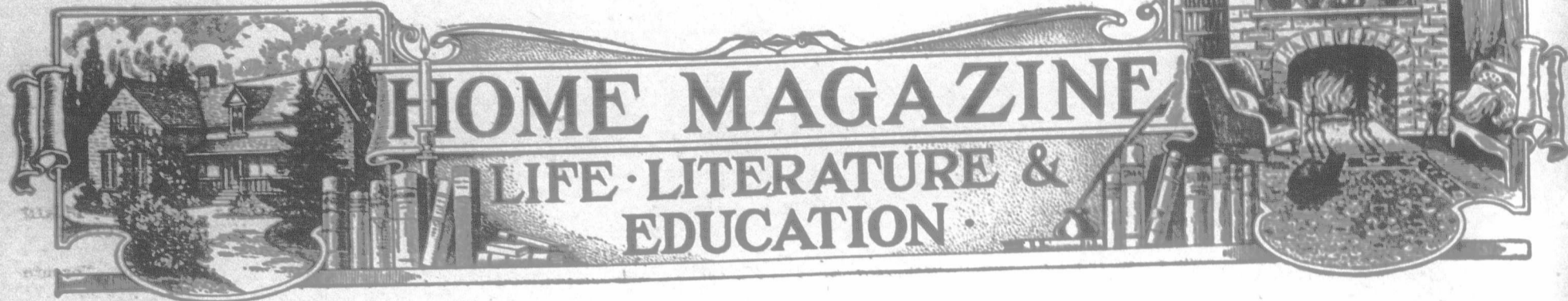
COUNTRY PRODUCE.

Butter.—Market steady. Creamery pound rolls, 31c. to 34c.; creamery solids, 28c. to 30c.; separator dairy, 27c. to 28c.; store lots, 24c. to 25c.

Eggs.—New laid, 45c.; cold storage, 34c.; selects in cold storage, 37c.

Cheese.—Old, large, 15c.; twins, 15c.; cheese, new, large, 14c.; twins, 14c.

Beans per bushel prime, 13c.; Potatoes Toronto, Brunswick bag, 11c.; Potatoes, gosse, chicken, 7c.; Alsike, alsike, timothy, \$3.25; \$2.50; No. 1 city h, 13c.; and per to 40c. tallow, FI Apple Greening to \$4; bages, dozen; per bag \$1 per per doz Live demand yards, full. P steers stock re 6c. to common and bul best bri and lan demand consider- availabl and shee from \$3 \$7 to \$1 hogs sold off cars. Horses, count. easier from 1.5 to \$325 lbs., \$22 old anim



(By one of the members.)

"In most villages, literary societies fail because they take themselves too seriously," said a well-known Toronto paper in a lengthy editorial (by actual measurement seven and a half inches long by four and three-eighths inches wide), in which it was holding us up as an example to be followed. "The one in this instance succeeded because its members discussed and wrote about, in the most natural, and therefore the most interesting way, those thoughts and emotions in which everybody shared."

Our full name was "The Literary, Social, and Debating Society," but that was partly because a playful young man from out West stampeded the meeting. What the provisional committee had decided on was, "The Literary, Musical, and Debating Society," for we intended to rent a piano from "the nearest market town," and have nocturnes and things every week. The girls for miles around were learning to play Grieg, Chopin, Weber, and Ethelbert Nevin, and when we found that we could listen to a Beethoven sonata for fifteen minutes without yawning, it was felt that the public should not be deprived of musical culture any longer. While the piano committee eventually failed in securing an instrument, still, the one we didn't get lent a thrilling interest to our plans which their literary, social and debating aspects could not altogether impart.

The school teacher first mentioned it about five o'clock one afternoon in October, but on account of the distractions of the Christmas season, the opening was delayed till January. The intervening time was spent in overcoming the forces of conservatism and reaction which threw up their hands and said, "You know what happens to people who start things—in a place like this" (consisting of three stores, two churches, the school, a blacksmith's shop, one hotel, two mills, a butter factory, and the weigh-scales). Before spring they were forced to admit that this was an ideal place for such an enterprise, combining an intelligent population, absence of rival attractions, and a general readiness to pay the membership fee.

Plans for launching the society were made by a provisional committee of young people appointed by themselves. One good thing they did was to prepare an exhaustive list of those who were likely to be interested, and divide it among several of the most winning young ladies, who made a personal canvass of those indicated. In this way, everyone was made to feel that his co-operation would be valued, and the gratifying support received kept the committee in the best of spirits till the organization meeting.

Another task was to draft a constitution, and draw up an official slate, so that when the organization meeting was held there was a definite basis for action. The school teacher secured permission from the trustees for the use of the school-room, with the cordwood appertaining thereto. There were larger auditoriums available, but they cost rent,

and we were haunted at first by the high cost of living. Afterwards, when we were lying awake at nights wondering how to spend our money, we could afford to smile at these early economies. There were no lamps in the school, but not long before this the Young People's Society of a local church had amassed enough by the sale of ice cream on Saturday nights during the summer to install gasoline lights in the church, and as a sign of gratitude the board of managers allowed them to have the old lamps. As the young people joined the Literary Society in a body, they naturally "took their lamps with them." Four of these suspended from the ceiling made the room bright in every corner in contrast to the Foresters' Hall, where it is always darker at the back. Added to the bright lights, a few flags, the Christmas decorations from one of the stores, "Welcome" cut out of white tissue paper on a red background, two large clocks, one of which was going, and sometimes a motto in ornamental script on the blackboard, created a cheerful, homelike atmosphere, and gave us a feeling of attachment to the place, which was not confined to the stout members who ventured to sit in the school seats.



"By the sale of ice cream on Saturday nights."

The date of the organization meeting was well advertised; in fact, "Advertise" was a slogan which the Society used throughout with the enthusiasm of a patent medicine company. The great local medium of publicity is the post office, where a ten-cent box of crayons and a few sheets of cardboard are all the materials necessary to conduct an advertising campaign. These were supplemented by weekly reports and announcements in the local papers, written with the threefold purpose of attracting the public to the meetings, encouraging those who took part, and giving an incentive to other neighborhoods to try and make rural life more interesting. We never allowed the Society to fall under the faintest suspicion of being dead.

It was organized on lines that made it representative of the whole community, and in order that as many as possible might contribute their influence, the usual honorary offices were extended to form an honorary council consisting of four men and two women of local prominence. Similar societies in the past used to admit women to membership at reduced rates, and exclude them from all the interesting offices, but happily for our permanence and success, there were no sex distinctions either in our management or the membership fee of fifteen cents. The only persons actually debarred were those under nine and over ninety, and even then, had any of our local centenarians made much of a fuss over being excluded, we would, no doubt, have had the by-laws amended. Non-

members paid five cents admission at each meeting, unless there was such a crowd that they couldn't get near the door-keeper.

A large part of our success was due to a couple of very efficient committees. The Fire and Light Committee showed what the male sex can do when roused. They put on the fires, blew out the lights, paid for the first can of coal oil (they were paid back), and when they could get some of the girls to help them, added such artistic touches as dusting and cleaning the lamp glasses. The Programme Committee was at first divided into literary and musical sections, but this distinction was not kept up. Every talented person in the surrounding country was shadowed by the Programme Committee, and at their businesslike conferences, with a chairman and secretary in charge, there was always a store of suggestions to draw upon. When a well-balanced programme had been drafted, the work of inviting those specified to take part, and making other arrangements necessary, was divided among the members, who each distinctly understood what was expected of him, so that the meetings of the Society were never marred by mishances. The only one not a success took place before this committee was organized.

There was no difficulty in securing assistance, for in this, as in all the aspects of the Society's work, there was revealed a surprising and gratifying desire to help, and, no doubt, the friendly and informal spirit of the meetings made people willing to take part who would have been reluctant to do so at a formal concert. The only criticism of the programmes was for undue length, which kept the children late for bed, but several extra numbers were always arranged to provide for such accidents as bad roads and the grippe, and last winter these did not always occur.

Very often it was possible to have as a special attraction some number drawn from outside sources, a singer, a reader, or a "harmonica band." Then, on the



"The stout members who ventured to sit in the school seats."

nights when no debates were held, talks were given on various subjects. The township clerk described the hydraulic ram on the farm, using the blackboard for his diagram; the school teacher gave an address on "Shakespeare," illustrated by a reading from "Julius Caesar," by one of his pupils; others spoke on "Home-ner Days," and to give the right kind of finish to our home-grown efforts, a good speaker was engaged to close the season with a lecture, held in one of the churches.

We had so often heard of the fun they used to have at the old-time singing-

schools, that singing was made a feature every week. The blackboard took the place of music-books, and about the middle of the programme, after a debate or something heavy, the chairman would ask us to please rise and give "Old Black Joe," or "Jingle Bells," with laughing chorus. The latter was the most successful piece we tried. We couldn't all sing, perhaps, but most of us could laugh. It must be admitted that those at the back of the room could not all see the blackboard, but it would be quite possible and desirable for an enterprising Literary Society to have the words of a dozen or two good, old songs printed on leaflets, and distributed at each meeting. Singing in unison is joyous and healthful, but people seldom get a chance to enjoy it nowadays, except at church. Our meetings opened with the National Anthem, and closed with "O, Canada," but when the latter had to be omitted because the organist forgot to bring the music, no one objected to giving "God Save the King" over again, even those who had voted for reciprocity.

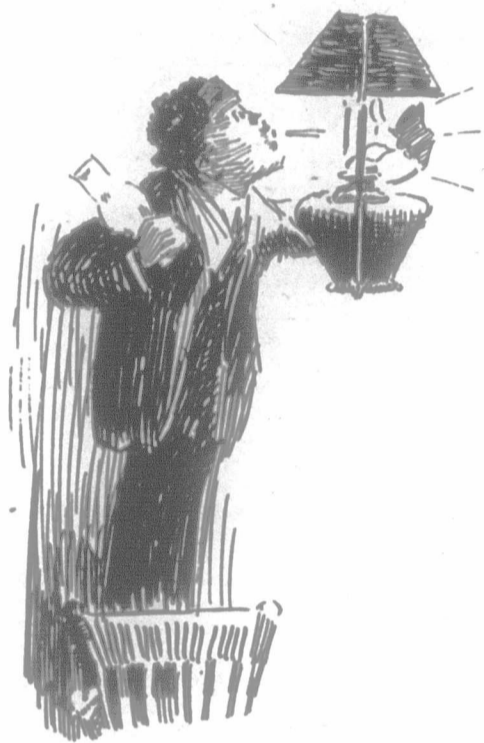
Of course, the great features of the winter were the debates and the manuscript newspaper which were given on alternate nights. The subjects for debate were chosen by general vote, and there might have been some advantages in having them more carefully selected by a committee, and announced at the beginning of the season, so as to give the speakers more time to assemble information. Be that as it may, the majority of the subjects chosen were such as possessed a vital, present-day interest, rather than academic questions, and as seasoned speakers as well as novices joined in the debates, they were found to be entertaining as well as of some practical benefit. Perhaps the most exciting one was on the Naval Question, which at that time was the topic of the day. It was debated by some of our most enthusiastic local politicians, and as party lines were not observed in choosing sides, there was not the slightest trace of political rancor. Debates of this kind are the best means of arousing public interest in national problems which are seldom really investigated by the average citizen. It was interesting to observe how ordinary social conversation was influenced for several days after, by a good debate.

Our newspaper, "The Literary Digest," has been sometimes confused with a more sober periodical published in New York. But there was no comparison. It was prepared every fortnight, and read aloud by the editorial staff, and, of course, the success of such a journal depends a great deal on the way it is read. It was written on foolscap, and bound in heavy paper covers secured from a printing office. At first the pages were punched with a wire nail and sewn together with embroidery cotton by the lady editors, but as our equipment was perfected, we used a conductor's punch and bound each number with a tan shoe lace, which looked decidedly neat. The staff spent two or three afternoons in preparing each issue, besides thinking between times. The prevailing tone of the paper was playful, but Stephen Leacock, who has tried both, says it is harder to write such a book as "Alice in Wonderland" than a treatise on political economy. At any rate, the staff were repaid for their labors by always getting the jokes when they were fresh. Sometimes they dawned on the editorial mind in the dead of night, and then it took a great deal of self-control to keep from rousing the household. Sometimes they occurred to the religious editor in church, or the society editor at a quilting, or to the sporting editor when sitting down to his "frugal breakfast of porridge and Scotch whiskey." In any case, there was a

Dr. Maria Montessori

fever of impatience until the rest of the staff could be notified. The general public had to wait till the paper came out, and then they didn't always laugh; in fact, this characteristic of the public was responsible for the motto of the paper—adopted after the first issue—

"Weep, and the world weeps with you, Laugh, and you laugh alone."



"They lighted the fire and blew out the lights."

"The Literary Digest" was modelled on the lines of a modern journal, and we found it diverting to record our rustic activities in the terms of the metropolitan press. The society editor described the costumes at the Women's Institute oyster supper and the Foresters' banquet with such ingenious touches as, "Miss Grace Smith was wearing her green skirt and net waist, but, unfortunately, was unable to be present." The financial column contained references to watering stock, and the "Paris Letter" gave advice on what to wear when running up to the post office for the mail. The Woman's Page had a correspondence column in which real questions sent in by the public were answered with more or less ingenuity, the topics ranging from sponge cake to raising children. Advertisements of the local business firms appeared in each issue, reliable as to fact, but expressed with a vivacity that was lacking in our dull contemporaries. One store published a striking announcement on "Gum." Other advertisements recommended soap that was "guaranteed to wash," or suggested that there should be a tooth-brush in every home. Patent medicine testimonials acquired a more thrilling interest when their victims could be seen right there at the meeting. On the night of the libel suit, two issues of the paper appeared, the regular edition at the beginning of the evening, and an "extra" at the close telling all about the big trial. In the regular edition a gentleman advertised for a lost knife, and then in the "extra," announced that his



"Sometimes it occurred to the religious editor in church."

property had been returned to him by a reader. But perhaps it should be confessed that the knife had turned up before the meeting began. The libel suit was the outcome of an article published about a young lady's baking, and drew the largest audience of the season. It was practically impromptu, and therefore somewhat lacking in finish, but as an example of court procedure was enlightening, and gave us

an evening of original fun, without making exacting demands on anyone's time. The libel suit, of course, was not serious, but it really was a matter of some delicacy to be humorous every two weeks without giving offence to anyone. We were warned that some societies as promising as ours had been completely broken up by such a bad habit. But it was possible by being perfectly genial to have a good deal of fun in this way without causing trouble, although there was a tendency to confine the humorous personalities to the most intimate friends of the editorial staff, whose good nature could be relied upon.

Besides the work of the editors, contributions were published from other members and friends. One wrote a humorous account of an old-time threshing; another described with a graceful touch his pioneer boyhood; a new resident who had "sailed the Spanish Main," furnished an account of life on a British man-o'-war, and so on. Afterwards, when "The Literary Digest" was issued in printed form, some of these contributions were quoted by city papers, showing that they were of more than local interest, and yet, no doubt, equally interesting materials are available in many small communities.

At the close of the season the complete file of the paper was printed in pamphlet form as a souvenir of the winter, and to make it available to people in Canada and the United States who had been prevented by distance from attending the meetings. The expense of publication was partly met by the advertising patronage we secured from the business men and women in the neighborhood. Then the printer gave us a reduced rate in return for the use of the stuff in his paper, and one of the stores handled the sales free of charge, so that it might be extravagant to follow our example where similar liberality could not be counted

the empty spaces; the zinc around the stove crackles hilariously under the trampling footsteps in the center aisle, and the door-latch rattles till there is a sea of faces (or, to be quite literal and matter-of-fact, a lake) stretching from the music-racks of the orchestra, which are the cause of that delightful professional air in the upper left-hand corner, to the coat-hooks at the back. But I'm afraid you can hardly realize the glow in which all these things moved unless you have dreamed of the possibilities of neighborhood unity and good-will as we did, and have seen it coming true. That is the reason for our pardonable pride in a membership of one hundred and twenty-seven, and the fact that eighty-four different people contributed to the weekly programmes without counting the caretaker.

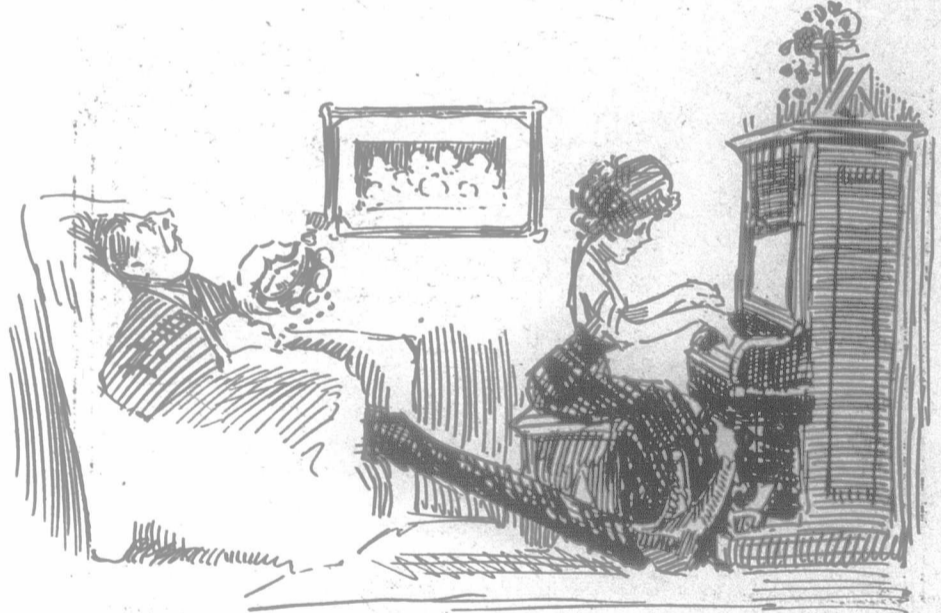
Hope's Quiet Hour.

Behold the Man!

A man shall be as an hiding place from the wind, and a covert from the tempest; as rivers of water in a dry place, as the shadow of a great rock in a weary land.—Isa. xxxii: 2.

Behold the man!—S. John xix: 5.

Before beginning my chat on our special topic to-day, I want to express my thanks to the many friends who, through me, have offered gifts to our King. The Monday before Christmas I received \$7.00 (from three anonymous readers), yesterday two letters arrived (each containing \$2.00), and to-day "A Quiet Country Woman's" gift of \$5.00 reached me. The purse in which I keep my poor fund was



"When we found that we could listen to a Beethoven sonata for fifteen minutes without yawning."

emptied by Christmas Day, yesterday I "passed on" a dollar out of the new supply to a poor fellow who is suffering from tuberculosis (he sends his grateful thanks to his unknown friend), and the purse now contains \$9.00. Probably this will soon be needed, and I will try—with God's help—to make it reach cases of real need. What a lot of kind people there are among our readers!

Oh, a great world, a fair world, a true world I find it; A sun that never forgets to rise, On the darkest night a star in the skies, And a God of love behind it."

Will you go back in imagination nearly three thousand years ago, and try to see the vision which amazed Isaiah, the great Jewish prophet? He was full of zeal for the Holy One of Israel, and would surely be the last person to give His glory to another, yet he does not say that GOD shall be a Refuge in the storm and Refreshment in the desert. No, with keen spiritual vision, the prophet looks forward nearly a thousand years and sees a Man towering like a mighty Rock which cannot be shaken.

Compare this passage with another in the 25th chapter, in which God is declared to have been a strength to the poor, a strength to the needy in his

distr. a refuge from the storm, a shadow from the heat, when the blast of the terrible ones is a storm against the wall." God has been all things to His people in the past—the prophet says—but a time is coming when a "MAN" shall supply all their need. Who is this Man? Can you look back through the centuries and find several who answer to the description? Can you find One?

"Behold the Man!" said Pilate long ago of a Prisoner whom he declared to be faultless. If JESUS be not the Man spoken of by Isaiah as "the shadow of a great rock in a weary land," where shall we look for a greater than He?

Let us examine the testimony of JESUS concerning Himself. The Pharisees said scornfully: "Thou bearest record of thyself; thy record is not true." Note His confident reply: "Though I bear record of Myself, yet My record is true; for I know whence I came, and whither I go." Men do not rely on a man who has no confidence in his own power. One day the manager of a business concern was interviewing an applicant for a responsible situation. The credentials were satisfactory, but the manager did not feel quite sure, so he said to the man: "Do you think you are big enough for the job?"

"Yes," was the confident reply—so he was engaged, though he bore record of himself.

If your child had a serious disease, and the doctor seemed to have no confidence in his powers of fighting it, you would have no faith in his ability. How safe a patient feels when his physician is serene and tranquil, and the nurse is evidently conscious of her own capability. When we feel our own helplessness, we want a helper who is strong—and who has no doubt of his strength. When we need a skilled person to take charge of any business, we want one who is both capable and confident.

See how calmly sure of Himself our Lord was that last night, when He knew that He would soon be apparently helpless to save Himself. Could one who was unable to save Himself have power to save to the uttermost all who looked to Him in their distress? How many have rested in their hour of need on those calm words of power: "Let not your heart be troubled: ye believe in Me, believe also in Me." There was no shadow of bewilderment or doubt in the great assertion to the perplexed disciple: "I am the way, the truth, and the life: no man cometh unto the Father, but by Me." When another disciple voiced the longing of all mankind: "Shew us the Father, and it sufficeth us," how tremendous—in its claim to equality with the Eternal All-Father—was the quiet assertion: "He that hath seen Me hath seen the Father." Then followed the declaration of almighty power, made by this Man who had worked for years, at a humble trade: "Whoever ye shall ask in My Name, that will I do." Then there was the offer of peace, made royally by the Prince of Peace—what other man ever dared to offer such a gift to the heart of a fellow-man? "Peace I leave with you, My peace I give unto you." Then there came another astonishing declaration, to the effect that all who were careful to abide in Him should bring forth much fruit, while those who left Him should be withered and cast away as useless refuse. "Without Me ye can do nothing," He said, and again: "All things that the Father hath are Mine."

If you will read carefully St. John xiv-xvii, noting particularly our Lord's statements concerning Himself, you will see that He felt Himself able to do the great work described in our text—able to shelter His beloved in time of storm, and to be their joy and refreshment in weariness.

Who, then, claims to be the Man able to do the work which God only can do? Who has declared Himself to be the Life and the Light of the world? Who has claimed to have power to forgive sins?

Behold the MAN! He stands alone, there is no rival claiming such power.

Has He proved Himself able to give peace and joy to troubled, sin-sick souls?

"Finding, following, keeping, struggling, is He sure to bless?"

"Angels, martyrs, prophets, virgins, Answer, Yes!"

There are great multitudes of people, from all nations of the earth, willing to

testify that they came to JESUS, "weary, and worn, and sad," that they "found in Him a resting-place, and He has made them glad." They declare that He has satisfied their hearts, which thirsted for perfect sympathy and love, that they found Him able to light up the darkness of doubt and sorrow, that He gave them strength to endure. A Man has been to them a Refuge in time of need—such a thing would be impossible, if the Man were not also God, because these people were widely separated from each other in time and space. Besides, only infinite love and sympathy can satisfy even one heart. A friend once said to the wife of Bishop Collins, that their marvellous oneness in the work of serving God must be satisfying. She stepped short, in the middle of a storm of rain, and said earnestly: "Yes—but no marriage—no earthly love can satisfy—one must have Him, JESUS."

Suppose you asked a great multitude of people, in a Christian country, whether any man had ever fulfilled the prophet's vision. They would either point to JESUS and say, "Behold the MAN!" or they would say the vision was a hopeless dream. It is certain no other man has ever been as a refuge from the storm, as rivers of water in a desert, as the shadow of a great rock in a weary land.

Someone has forcibly pointed out the fact that we should resent it if any of our fellows knew all our thoughts. We like sympathy, but we have a right to some privacy: "The heart knoweth his own bitterness; and a stranger doth not intermeddle with his joy." But we do not resent God's absolute knowledge of our secret thoughts. Is there any man whose absolute knowledge of us would not be resented as an intrusion? We look at JESUS, and answer: "Behold the MAN!"

Moses could only face the awful glory of God when he was hidden in the shadow of a rock, and we can only bear to draw near with boldness when we are under the shadow of the Rock—and that Rock is Christ. No man, He says, can come to the Father but by Him. As we are blinded if we venture to look at the sun, so we can only look at the glory of the Father as we see it reflected in the face of JESUS Christ. The throne of awful whiteness—the white light of Holiness—is in mercy veiled by a rainbow, "in sight like unto an emerald,"—the most restful color to the eyes.

"Sirs, we would see JESUS," is the cry of our hungry hearts. We want to see clearly the Vision of His Face.

"No pictured likeness of my Lord have I; He carved no record of His ministry On wood or stone. He left no sculptured tomb nor parchment dim, But trusted for all memory of Him Men's hearts alone."

DORA FARNCOMB.

Since writing the above I was called out to see a poor woman, who has lately returned from the hospital and is still in bed. Santa Claus had passed her by entirely, so I cheered her by the gift of one of your dollars—for which she sends her thanks to the unknown giver. HOPE.

The Windrow.

At the aeroplane show, held recently in Paris, almost one hundred machines were on exhibit.

The Duke of Bedford's Covent Garden estate, consisting of nineteen acres in the heart of London, was sold recently to Mr. Harry Mallaby-Deeley for upwards of \$50,000,000. This is the biggest real estate transaction between private parties on record.

The Nobel Prize for Literature for 1914 is to be awarded to Mr. Thomas Hardy, author of "Jude the Obscure," "Tess of the D'Urbervilles," "The Woodlanders," etc.

An apparatus for generating flameless heat from coal gas has been perfected quite independently, by two men, Prof. Bone of England, and Prof. Schnabel of

Germany. Much more heat will be developed by use of the process, from a given amount of gas.

"For commenting on the Belfis case the Russian Government confiscated twenty-four newspapers and pamphlets, suppressed two newspapers, and put four editors in prison."—The Independent.

The discovery of Leonardo da Vinci's picture, the "Mona Lisa" in Florence, created great excitement in that city. As it was carried to the place of exhibition in the Uffizi Gallery the crowd uncovered as at the passing of royalty or a funeral, and during the first forenoon thirty thousand people came to see it. Subsequently it was placed on exhibition in the Brera Gallery, Milan, and so great were the crowds that gathered to look upon the masterpiece that two hundred police officials were required to preserve order.

That the Marconi wireless telegraphy system may be easily adapted to railway service to flash messages to moving trains in case of danger has been successfully demonstrated by tests made

terrible time of the Revolution. The Naundorffs declare that the Dauphin was rescued from prison, another boy being substituted for him, and that he was brought up as a cloak-maker and known by the name of Naundorff. The decision of the courts is a virtual recognition by the French Republic of this claim, and the absorbing question now is, who was the unfortunate boy who was sacrificed in order that the son of Louis XVI. might live?

"Closed Afghanistan" is to have hydro power mills, and hospitals and factories are being erected in Kabul. At present a project for transmitting electrical energy to that city from a waterfall 120 feet high and 40 miles away is in course of realization.

A Bulgarian officer has been granted two months' leave of absence so that he may seek out Pierre Loti in Paris. The object of his journey is to fight a duel with the well-known author on account of what Loti has written about the conduct of the Bulgarian troops in the Balkan wars.

A remarkable career has been that of

short-lived Parliament, consists of the President, a Vice-President and an Administrative Council consisting of seventy-one members.—Cabinet officers and others appointed by the President and Provincial Governors. The arrangement makes the President virtually a dictator, but it is said that the mass of the people, leaving out the few revolutionaries and educated, pay little attention to the form of government under which they must live. Time will be required to educate them to a keen sense of their political responsibilities.

The New Public Health.

"The Farmer's Advocate" Bureau of Public Health Information.

QUESTIONS, ANSWERS, AND COMMENTS.

Conducted by the Institute of Public Health.—(The Public Health Faculty of Western University, London, Ontario.)

Established and maintained by the Ontario Provincial Government.

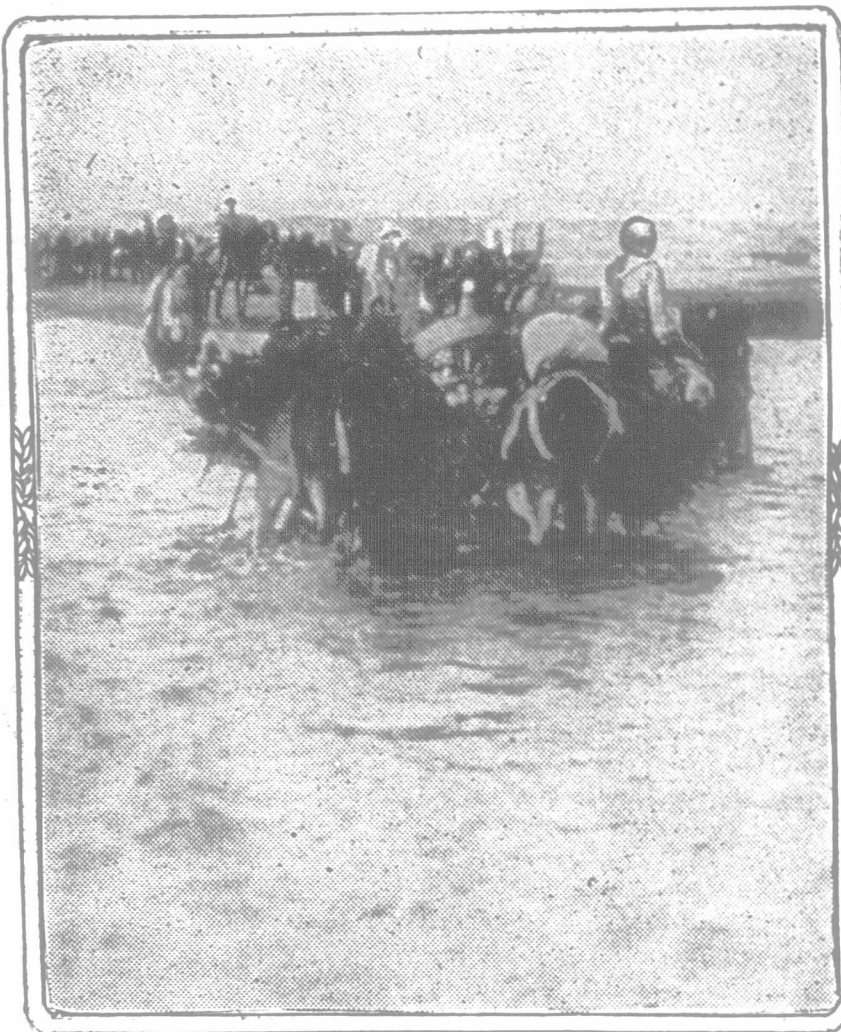
[Questions should be addressed: "New Public Health, care of 'The Farmer's Advocate,' London, Ont." Private questions, accompanied by a stamped, self-addressed envelope, will receive private addressed envelope, will receive private answers. Medical treatment or diagnosis for individual cases cannot be prescribed.]

Human Foods and Balanced Rations.

We are made out of carbon, oxygen, hydrogen, nitrogen, principally with a little iron, phosphorus, copper, sodium, potassium, calcium, etc. All these things are found in our foods, necessarily, for we are made out of food. But we cannot take pure carbon, nitrogen or hydrogen, and make anything much of it in the body, although we can use oxygen in its uncombined state as air. Almost all these things must be combined and prepared for us by plants taking them into their bodies before we can use them in ours (although we can also get them second-hand from animals). True, we cannot take a stalk of celery or a potato and replace a nerve or muscle with it. We must first break down the foods as we receive them, part way to their elements, using them, so to speak, the fragments to build up again into our bodies.

But besides building up our bodies, we use much of the food for fuel, to produce the immense heat we use to drive our body-engines. We have no individual furnace, with boilers over it and pistons rods connected, driving-wheels or dynamos; we are, all over, furnace and boiler and machinery in every part, so small, so fitted into each other, so compact, and so dependent on delicate chemical and electrical reactions, that it has taken the life study of very many men to find out even what we know—a small percentage of the total facts. Fortunately, we are able to live, and probably have lived for many a thousand years without knowing the final details. If we had to know all about food, and what becomes of it in the body before we took a meal, the whole race would have stopped with its first ancestor, a day or two after he was born! However, some of the things we have found out seem to be more or less useful as general guides, and one of these deals with the value of different foods in a rather practical way, if you put a good deal of thought and care upon it.

It has been found, for instance, that a pound of coal will yield, when completely burned, just so much heat, varying with the kind and quality of coal, but always the same for the same kind and quality. It is true we may not burn it completely in our furnaces or stoves; we may waste the heat we do get from it, letting most of it go up the chimney; or we may use the heat we do use for very trivial purposes. But so much carbon, the principal constituent in coal, always can yield just so much heat, whether we waste it or not. Just so with different foods. If we take a turnip, or a pound of meat,



The Cruelties and Hardships of Warfare.

One of the phases of the hardships of warfare is depicted in the above picture, which shows citizens of Ojiaaga, Mexico, women and children, rushing to American side of the Rio Grande, in order to escape the bullets of the Rebel and Federal armies. It will be noted that they are taking with them such scant belongings as they were able to muster on short notice. Most of their valuable belongings, such as lands, household goods and other properties, have been left behind. In many instances the women and children have been widowed and orphaned by the fatalities of battle.

recently on the Lackawanna Railroad. The system will also be found useful in giving orders and instructions to freight trains on long runs, thus saving much expense and delay.

An invention which makes fire-damp toot a whistle as soon as it forms in coal mines has been perfected in Germany.

A decision involving remarkable revelations was recently rendered in the French courts. The right of a family known as Naundorff to call themselves "de Bourbon" was questioned by a newspaper "La Patrie"; the Naundorffs protested and the case went into the courts with the result that "La Patrie" had to pay damages to the plaintiffs, who base their claim upon the assertion that they are descendants of the Dauphin, son of Marie Antoinette and Louis XVI., so long believed to have perished because of abuse, during the

Madame Ekaterina Breshkovskaya. Six years ago, says The Independent, she visited the United States, and on her return was imprisoned for certain statements in regard to Russia which she had made while there. For two years and a half she was left in the fortresses of St. Peter and St. Paul, then she was tried and sent to Siberia to do hard labor in the Kara mines. During last fall she was transferred to the penal colony of Kirensk, north of Lake Baikal, but on December 1st she escaped, by exchanging her clothes for those of an old male prisoner, and had a few days of freedom. Although the telegraph wires were cut, troops scoured the country searching for her, and finally found her in a peasant's cart where she was slowly making way in an attempt to reach Yakutsk. Madame Breshkovskaya is over seventy years of age.

The new Chinese Government which, under Yuen Shi Kai has supplanted the

Dr. Maria Montessori

and burn it carefully as we would burn a pound of coal in testing it, we find a certain amount of heat produced—far less than a pound of coal would produce, of course, but exactly the same otherwise. Turnips and meat would make poor fuel for a stove or furnace, because there is so much water in them, but once they are dried out, the rest of them burns well, as we find in garbage incinerators. Now, very careful and elaborate experiments have shown that when meat or turnip is taken into the body and burned, the exact amount of heat it would have yielded if completely burned in a stove or furnace is yielded in the body, less about ten-per-cent. wastage that can be perfectly accounted for. Knowing this, it is not hard to understand that long series of experiments have determined for nearly every kind of food the exact fuel value, and this forms a very fair way of classifying the relative values of these foods to the body. It is not a perfect way however; the fuel value of coal is very high indeed, but since we cannot eat coal, that fact does not help us. The fuel value of wood is high, too, but although some animals can use wood for fuel in their bodies, we humans can't, so the fuel value of wood is no use to us. So also with grass and hay. Cows and horses can use those, but we can't. We have to find out by experience what things we can eat first, but once we know that,

Protein	125 grams	=	4.4 oz.	=	5 quarts	=	512.5
Fat	75 grams	=	2.6 oz.	=	7 quarts	=	697.5
Carbohydrate	500 grams	=	17.6 oz.	=	20.5 quarts	=	2050.0
	700		24.6		32.5		3260.0

then knowing the fuel values of these different things also allows us to compare them pretty well. It must not be supposed that fuel value is the whole thing, however. Certain foods, especially vegetables, contain substances in very small amounts, a dram or less to the ton, which cut no figure at all as fuel, yet are so important to the body that disease and death result if they are not present. These are called vitamins. Their absence results in a disease called beri-beri, and scurvy is probably due to a similar lack.

Finally, as stated in a previous article, the fuel value of fat is more than double that of either of the other great foods, carbohydrate and protein, but we would die in time on a diet of fat alone—so also on a diet of carbohydrate alone. Protein would keep life in us, all alone, but we would not get on as well as on a mixed diet.

CALCULATING FUEL VALUES.

As previously explained, many of the different animal and vegetable foods that we eat, contain, in a crude state, some two or all three of the main things, protein, fat, carbohydrate: and they contain them in different proportions. Instead of laboriously testing the fuel value of every individual food, it is much easier and better to know the fuel value of protein, of fat, and of carbohydrate. Then we can, by simply analyzing the food, calculate the fuel value without further trouble.

Heat enough to raise the temperature of one litre of water one degree centigrade, is called a calorie. About one pound of protein, completely burned, would yield heat enough in burning to boil about four and a half gallons of water (about three and a half imperial gallons) that was just at the freezing point when the heat was first applied to it. (In actual tests, protein burned yields more heat than this, but in the body it is not all used for fuel, but partly to replace worn-out tissues, so that in the body it produces the heat above described.)

Carbohydrates have the same heat value in the body that the proteins have: but the fats have over twice the heat value, i. e., would boil twice as much water; a pound of lard, for instance, completely burned, would bring to boil about ten gallons of freezing water (about eight imperial gallons).

Now, the body requires varying amounts of fuel, depending on age, sex, height, weight, amount of work done, and many other things. Thus a young infant needs perhaps an average of 100 calories a day, i. e., enough food-fuel heat to bring to boil a quart of freezing-cold water. An active adult man, doing hard, muscular work, will need from 3,000 to 4,000 calories, or even more—

enough to bring to boil eight or ten gallons of freezing-cold water.

Now, theoretically, a man could get the 3,000 to 4,000 calories he needs from a pound of lard, but fancy feeding a man a pound of lard a day, and nothing else! Moreover, he would starve to death on it, despite its fuel value, for pure lard contains no protein, i. e., no muscle or other tissue builder. Theoretically, also, a man would get the heat he needed from about two and a quarter pounds of granulated sugar, but again he would soon give out for lack of protein, even if he could manage to "down" pure sugar three times a day as his only food. Theoretically, also, two and a quarter pounds of protein would do him, with nothing else.

It is true he would not starve to death on this, but he would miss the quick-burning fats and sugars, and would not "feel right" or healthy or happy. The proportions of each fourth of food, then, is important. One might say, if we need all three kinds, why not just divide the total calories we need by three, and eat protein enough to supply one-third, fat enough to supply one-third, and carbohydrates enough to supply one-third? Doubtless this would make a tolerable diet, but experience and experiment go to show that an average adult man doing reasonably hard work, gets along best on about the following amounts in the following proportions:

Protein	1 1/4 oz.	=	170 calories
Fat	1/2 oz.	=	230 calories
Carbohydrate	6 oz.	=	700 calories
	8 3/4		1100

So much is clear; but now comes the real difficulty. We do not have protein in one can, fat in another, carbohydrate in another, in such shape that people will eat and enjoy them; day after day. We must carefully select such commonplaces as meat, potatoes, bread, fruit, etc., so that the total eaten will represent these things, in the proper proportions, and giving after all a very commonplace appearance on the table.

To show how it is done, an illustration is given here, together with the necessary tables for a number of the ordinary foods.

EXAMPLE OF BALANCED RATION.
"Meat and Potatoes and Bread."

Desired for one average meal:—			
Protein	42 grams	=	1 1/4 oz.
Fat	25 grams	=	1/2 oz.
Carbohydrate	170 grams	=	6 oz.

CONSTITUENTS.

	Protein %	Fat %	Carbohydrate %
Lamb Chop	17.6	28.3	0.0
Potato	2.2	0.1	18.0
White Bread	9.2	1.3	53.1

Evidently all three supply protein, while the potatoes and bread supply the carbohydrate, and the chop supplies the fat chiefly.

If we are to have no waste, we must calculate the chop on the basis of the fat, thus 7/25 (28, per cent.) of the chop is fat; 1/3 of 1 ounce of fat we require in the meal; hence we need chop enough so that 7/25 of it will weigh 1/3 of an ounce; that is, the whole chop should weigh 25/7 of 1/3 equals 3 1/2 oz.

This not only supplies us fat, but part of the one and a half ounces of protein we require, i. e., about 1/6 (17.6 per cent.) the chop is protein; hence 1/6 of 3 1/2 ounces—1 1/6 of 25/8—about 1/2 ounce. The rest of the protein we may get from the potatoes and bread. Of course a great many combinations might be made. If we discard the bread and use potatoes only for our carbohydrate, the six ounces of carbohydrate would require over two pounds (say 33 ounces) of potatoes to supply it, for the carbohydrate content of potatoes is only between 1/5 and 1/6 of their total weight. Incidentally, this would add protein to the extent of about 1/45 (2.2 per cent.) of the total weight, i. e., about 1/3 of one ounce, or nearly enough to make up the protein deficiency in the 3 1/2 ounces of chop.

However, few people would wish to eat over two pounds of potatoes at a sitting; most people would rather substitute bread for part of it. The white

bread given is nearly three times as strong in carbohydrates as the potatoes; hence one ounce of bread would replace nearly three ounces of potatoes, and furnish one-half more protein. Suppose then we replace say two-thirds of the 33 ounces of potatoes already figured by bread: i. e., leave out 23 ounces of potatoes and add 10 ounces of bread: then we will have about one and four-fifths ounces carbohydrate from the potato and about five and one-third from the bread, making over the six ounces required: and we should have one-quarter ounce of protein from the potato, about one ounce from the bread. Thus we would obtain nearly the proportions desired.

Chop	3 1/2 oz.	1/2 oz.	1/8 oz.	0.0
Potato	10 oz.	1/4 oz.	1 1/2 oz.	1 1/2
Bread	10 oz.	1/8 oz.	1/2 oz.	5 1/2

over 1 1/2 oz. over 1 oz. over 7 oz.

There is an average wastage of 10 per cent., increasing with the vegetable and carbohydrate foods, and hence this combination would be very nearly correct.

We have not figured in any butter or sugar: they would reduce the amount of fat required in the meat and bread; and would make up for some of the carbohydrate. The combinations that might be made are almost inexhaustible. Thus, another chop weighing 3 1/2 ounces would make up for half the bread so far as protein was concerned, although doubling the fat required; the loss in bread would cut the carbohydrate by over 2 1/2 ounces. However, the extra fat, having more than twice the heat value of the carbohydrate, would very nearly balance the loss of carbohydrate.

On the other hand, the potato might be cut in two without much damage to the meal, if half a chop (of 3 1/2 oz. in weight) were added, for this would more than supply the protein lost, and the fat added would supply enough heat value to make up the loss of carbohydrate. Of course, sugar in coffee, tea, or taken as candy or in pies, would make up carbohydrate requirements very fast, for sugar, weight for weight, yields nearly double the carbohydrate in bread.

H. W. HILL.

Percentage Composition of Edible Portions of Certain Common Foods.

	ANIMAL AND FISH.					
	Protein per cent.	Fat per cent.	Carbohydrate per cent.	Ash per cent.	Water per cent.	Heat value per lb.
Whole milk.....	3.3	4.0	5.0	0.7	87.0	310
Skim milk.....	3.4	0.3	5.1	0.7	90.5	165
Buttermilk.....	3.0	0.5	4.8	0.7	91.0	160
Cream.....	2.5	18.5	4.5	0.5	74.0	865
Butter.....	1.0	85.0	0.0	3.0	11.0	3410
Cheese (cream).....	25.9	33.7	2.4	3.8	34.2	1950
Cheese (cottage).....	20.9	1.0	4.3	1.8	72.0	510
Whole egg.....	14.8	10.5	0.0	1.0	73.7	700
White of egg.....	13.0	0.2	0.0	0.6	86.2	265
Yolk.....	16.1	33.3	0.0	1.1	49.5	1608
Lamb chop.....	17.6	28.3	0.0	1.0	53.1	1540
Pork chop.....	16.9	30.1	0.0	1.0	52.0	1580
Bacon.....	9.4	67.4	0.0	4.4	18.8	3030
Smoked ham.....	16.1	38.8	0.0	4.8	40.3	1940
Beefsteak.....	18.6	18.5	0.0	1.0	61.9	1130
Dried beef.....	30.0	6.6	0.0	9.1	54.3	840
Beef suet.....	4.7	81.8	0.0	0.3	13.2	3510
Lard.....	0.0	100.0	0.0	0.0	0.0	4080
Cod-lean.....	15.8	0.4	0.0	1.2	82.6	325
Mackerel-fat.....	18.3	7.1	0.0	1.2	73.4	645
Salt cod.....	21.5	0.3	0.0	24.7	53.5	410
Smoked herring.....	36.4	15.8	0.0	13.2	34.6	1355
Oyster.....	6.2	1.2	3.7	2.0	86.9	335

	CEREALS, ETC.					
	Protein per cent.	Fat per cent.	Carbohydrate per cent.	Ash per cent.	Water per cent.	Heat value per lb.
Corn (grain).....	10.0	4.3	73.4	1.5	10.8	1800
Corn (green).....	3.1	1.1	19.7	0.7	75.4	500
Corn bread.....	7.9	4.7	46.3	2.2	38.9	1205
Wheat (grain).....	12.2	1.7	73.7	1.8	10.6	1750
Whole-wheat bread.....	9.7	0.9	49.7	1.8	38.4	1140
White bread.....	9.2	1.3	53.1	1.1	35.3	1215
Toasted bread.....	11.5	1.6	61.2	1.7	24.0	1420
Macaroni (cooked).....	3.0	1.5	15.8	1.3	78.4	415
Oat (grain).....	11.8	5.0	69.2	3.0	11.0	1720
Oatmeal (cooked).....	2.8	0.5	11.5	0.7	84.5	365
Buckwheat (grain).....	10.0	2.2	73.2	2.0	12.6	1600
Rye (grain).....	12.2	1.5	72.9	1.9	10.5	1750
Rice (grain).....	8.0	2.0	77.0	1.0	12.0	1720

	SUGARS.					
	Protein per cent.	Fat per cent.	Carbohydrate per cent.	Ash per cent.	Water per cent.	Heat value per lb.
Granulated.....	0.0	0.0	100	0.0	0.0	1560
Maple.....	0.0	0.0	82.8	0.9	16.3	1540
Stick candy.....	0.0	0.0	96.5	0.5	3.0	1785
Molasses.....	2.4	0.0	69.3	3.2	25.1	1290
Honey.....	0.4	0.0	81.2	0.2	18.2	1520

	VEGETABLES.					
	Protein per cent.	Fat per cent.	Carbohydrate per cent.	Ash per cent.	Water per cent.	Heat value per lb.
Potato.....	2.2	0.1	18.4	1.0	78.3	385
Parasip.....	1.6	0.5	13.5	1.4	83.0	230
Onion.....	1.6	0.3	9.9	0.6	87.6	225
Celery.....	1.1	0.0	3.4	1.0	94.5	85
Shelled bean (fresh).....	9.4	0.6	29.1	2.0	58.9	740
Navy bean (dry).....	22.5	1.8	59.6	3.5	12.6	1600
String bean (green).....	2.3	0.3	7.4	0.8	89.2	195

	FRUITS.					
	Protein per cent.	Fat per cent.	Carbohydrate per cent.	Ash per cent.	Water per cent.	Heat value per lb.
Apple.....	0.4	0.5	14.2	0.3	84.6	290
Fig (dried).....	4.3	0.3	74.2	2.4	18.8	1475
Strawberry.....	1.0	0.6	7.4	0.6	90.4	180
Banana.....	1.3	0.6	22.0	0.8	75.3	460
Canned fruit.....	1.1	0.1	21.1	0.5	77.2	415
Fruit jelly.....	0.0	0.0	78.3	0.7	21.0	1455
Grapes.....	1.3	1.6	19.2	0.5	77.4	450
Raisins.....	2.6	3.3	76.1	3.4	14.6	1605
Grape juice.....	0.2	0.0	7.4	0.2	92.2	150

	NUTS.					
	Protein per cent.	Fat per cent.	Carbohydrate per cent.	Ash per cent.	Water per cent.	Heat value per lb.
Walnut.....	16.6	63.4	16.1	1.4	2.5	3285
Chestnut.....	10.7	7.0	74.2	2.2	5.9	1875
Peanut.....	25.8	38.6	22.4	2.0	9.2	2500
Peanut butter.....	29.3	46.5	17.1	5.0	2.1	2825
Cocanut desiccated.....	6.3	57.4	31.5	1.3	3.5	3125

Fashion Dept.

HOW TO ORDER PATTERNS.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state in which issue pattern appeared. Price ten cents PER NUMBER. If two numbers appear for the one suit, one for coat, the other for skirt, twenty cents must be sent. Address Fashion Department, "The Farmer's Advocate and Home Magazine," London, Ont. Be sure to sign your name when ordering patterns. Many forget to do this.

STAMPING OUTFITS.

There are still on hand a few transfer patterns for fancywork. These may be had at thirty-five cents per set. Address, The Fashion Department, "The Farmer's Advocate and Home Magazine," London, Ont.

Address: Pattern Dept., "The Farmer's Advocate and Home Magazine," London Ontario.

When ordering, please use this form:—
Send the following pattern to:

Name

Post Office

County

Province

Number of patterns

Age (if child or missis' pattern)

Measurement—Waist, Bust,

Date of issue in which pattern appeared.



8128 Corset Cover for Misses and Small Women, 16 and 18 years.



8122 Fancy Blouse, 34 to 44 bust.



8126 Fancy Blouse for Misses and Small Women, 16 and 18 years.



8119 Boy's Suit, 2 to 6 years.



8107 Child's Dress, 1, 2 and 4 years.



8093 Surplice Blouse for Misses and Small Women, 16 and 18 years.



8096 Girl's Low Belted Dress, 6 to 14 years.



8103 Dressing Jacket, 34 to 44 bust.



8099 Over Blouse with Tunic and Skirt, 34 to 42 bust.



8101 Girl's Dress, 8 to 14 years.



8323 Boy's Pajamas, 6 to 14 years.



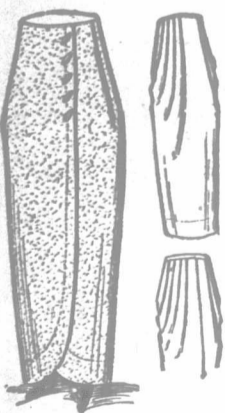
8124 Empire Negligee, 34 to 42 bust.



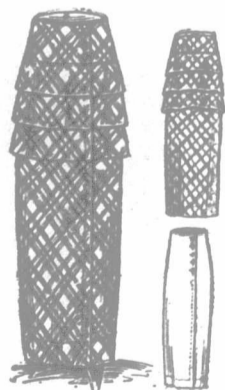
8100 Coat with Kimono Sleeves for Misses and Small Women, 16 and 18 years.



8118 Apron with Kimono Sleeves for Misses and Small Women, 34, 36 and 38 years.



8098 One-Piece Peg Top Skirt, 22 to 32 waist.



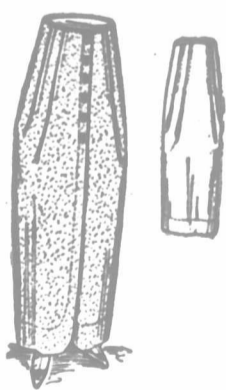
8123 Three-Piece Skirt, 22 to 32 waist.



8091 Fancy Blouse, 34 to 42 bust.



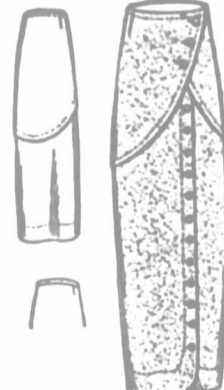
8117 Child's Dress, 4 to 8 years.



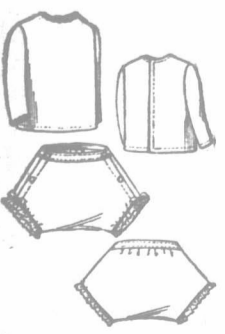
8108 Peg Top Skirt, for Misses and Small Women, 16 and 18 years.



8095 Child's Dress, 2 to 6 years.



8106 Three-Piece Skirt, with Simulated Tunic, 22 to 32 waist.



8121 Child's Shirt and Drawers, 6 mos. or 1 year and 2 years.



8111 Boy's Shirt, 6 to 12 years.



8115 Fancy Blouse, 34 to 42 bust.



8094 Men's Night Shirt, 34 to 44 breast.



8110 Combination Under Garment, 34 to 44 bust.



8115 Combination Under Garment, Small 34 or 36, Medium 38 or 40, Large 42 or 44 bust.



8125 Child's Dress, 6 mos. or 1 year and 2 years.

The Beaver Circle

Our Senior Beavers.

[For all pupils from Senior Third to Continuation Classes, inclusive.]

CARELESS JANE.

(By Margaret F. Browne.)

Trouble, trouble, toil and trouble—
Jane's a trial, goodness knows!
Makes my housework nearly double,
'Cause she won't look where she goes!

Though I warned her of that puddle,
Straight ahead she went—kersplosh!
All my house is in a muddle
With this dreadful Monday wash!

judged the dresses. "How dear and unselfish our little Beavers are!"

Here are some of the letters:
My Dear Puck,—I am sending a dress for some girl's doll at the Children's Home for Christmas. I hope that the children will get their dollies fitted out for the year. I have never written to your Circle before, but I should like to join, for I find reading the letters very interesting.

Good-bye,

MARIAN C. McARTHUR.

Newcastle, N. B.
Box 192.

(Age 13, Book IV.)

Dear Puck,—I see you are having a Doll's Dress Competition again this year, so I thought I would try for it. I have made a bonnet to match the



Washing Dolly Jane's Clothes.

Photo by Boyd.

THE DOLL'S DRESS COMPETITION.

Dear Beaver Girls,—A week or so ago those who won prizes in the Doll's Dress Competition knew all about it, because, you see, we sent the prizes then; but the rest of you will be wondering about the details, so I must tell you the news right away:

The first prize went to Mary Gunn, Avonmore, Ont.; second, to Dorothy Farley, Les Huron, Que.; third, to Mabel Sollitt, Uxbridge, Ont.; fourth, to Elva Paaren, Acton, Ont., and there was a "special" to Elsie F. Newby, Rockville, Manitoulin Island, Ont., who sent a whole dollie's outfit.

We also sent out consolation honor roll prizes to Annie Holmes, Winchester, Ont.; Thirza Gilbert, Glanford Station, Ont.; Marian McArthur, Newcastle, N. B.; Mary Granger, Canfield, Ont.; Sarah Bruce, Lotus, Ont., and Joy Husk, Ulverton, Ont.

I am sure if you had seen Mary Gunn's dress you would have said it was a little beauty,—all white muslin flowered with mauve and trimmed with lace and a dainty Dresden ribbon sash. It had a deep collar that ran into long revers, and the whole of the dress was perfectly proportioned; the sleeves were neither too little nor too big, and the skirt neither too broad nor too long. Besides, the sewing was very neatly and firmly done.

Dorothy Farley also sent a very well-made little dress with bonnet to match, white and pink muslin with lace trimming and pink ribbon sash; while Mabel Sollitt's was all pink with trimming of white lace and pink ribbon. . . . Now I am not going to describe any of the rest of the dresses because, you see, there isn't space to spare, and besides I want to tell you about the dear kind little notes that came with nearly all the dresses. Christmas cards with kind greetings to the little children who would get the dresses were pinned to nearly all of the little frocks, and little notes to Puck were also attached. In these it was noticed that scarcely a Beaver said anything about wishing to win a prize. There was, however, a great deal about hoping that the children in the Shelter would like the dresses, and so we thought as we

dress, as I thought they would look pretty together, and I hope the little girl who gets it will have a very happy Christmas. We are living on a farm of 300 acres. My father is manager. He has four men under him. We have 110 cattle, all thorough-bred Holstein-Friesians and 13 horses, three Hackneys and the rest pure-bred Clydesdales. I will close now, wishing you and the Beavers a very happy Christmas.

From your loving Beaver,

DOROTHY FARLEY.

Les Hurons, Rouville Co., Que.

(Age, 11 years.)

P. S.—Will some of the Beavers kindly write to me.

Dear Puck and Beavers All,—Will you please allow me to enter your Circle again? I have been silent quite a while, but I could not resist the temptation to enter your Doll's Dress Competition, as I love sewing.

Now Puck, I want to have a little talk with you alone. You may ring off the Beavers if you like. I want to ask you about those dresses? Did you make any rules this year? Last "Dress Competition" you had the rule, 'we were to make the dresses all ourselves.' This year I could not find any rules. I thought maybe you had forgotten, so to keep on the safe side of you I am following as near as I can last year's instructions. Will that do?

The first thing I did toward making my dress was to cut out a pattern. (I think it seems more like a real lady's dress when you have a pattern to go by), and one day when mamma was away I cut out my dress. Since then I have sewed it just when I could get time from my school lessons. When I started I had a notion to sew it all on the sewing machine, but on second thoughts I knew it would not do, because that would not be doing it with our own hands. I did think of getting some pink mull for my dress, but at the 'Children's Home' I would not think it would last long. They will be handling the dresses so much. I made mine of pink chambray. I thought it more suitable for a doll.

I am so glad you are going to send the dresses to the Children's Home.



With Every Bag of Flour There Goes A Guarantee

That guarantee means that I believe Cream of the West to be the best bread flour on the market. If your bread doesn't beat any you ever baked before, if it fails to rise or doesn't give extra satisfaction in every way, your grocer will pay you back your money on return of the unused portion of the bag.

Cream of the West Flour

the hard wheat flour guaranteed for bread

If people will fairly and honestly try Cream of the West they will have success with it. That's why we guarantee it. We are sure of it.

Prices Direct to the Farmer

We want to make "Cream of the West" flour better known in every locality in Ontario. And with this end in view we offer the following special prices to-day on flour and feed direct to the farmers:

FLOURS	Per 98-lb. bag
Cream of the West Flour (for bread)	\$ 2 80
Queen City Flour (blended for all purposes)	2 40
Monarch Flour (makes delicious pastry)	2 35

FEEDS	Per 100-lb. bag
"Bullrush" Bran	\$ 1 25
"Bullrush" Middlings	1 30
Extra White Middlings	1 40
"Tower" Feed Flour	1 60
"Gem" Feed Flour	1 75
"Bullrush" Crushed Oats	1 50
"Geneva" Coarse Feed	1 65
Oatmaline (molasses, oats and corn)	1 55
Cracked Corn	1 55
Corn Meal	1 55
Oil Cake Meal	1 65

Prices on whole oats, whole corn and other grains supplied upon request.

TERMS: Cash with order. Orders may be assorted as desired. On shipments up to five bags buyer pays freight charges. On shipments over five bags we will prepay freight to any station in Ontario, east of Sudbury and south of North Bay. West of Sudbury add to above prices 10 cents per bag. To points on T. & N.O. line add 20 cents per bag to cover extra freight charges. Make remittances by express or post office money order payable at par at Toronto. Prices subject to market changes.

Read This Splendid Offer

To enlarge the acquaintance of the public with its various products, the Campbell Flour Mills Company makes you a very special offer—a great 300-page household book free. This is one of the most remarkably complete and helpful household volumes ever prepared. It is called the "Dominion Cook Book." The 1000 recipes are alone worth the regular price of the work (\$1).

These recipes cover every kind of cookery, from soup to dessert—from the simplest to the most elaborate dishes. Every recipe is dependable and not too expensive or troublesome to prepare. They always come out right. Full instructions how to carve meats and game, with many graphic illustrations.

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How To Get Household Book Free

With every purchase from us of not less than three (3) bags of Campbell's Flour (any brand) you will get a Household Book Free. But bear in mind, that if you order up to five (5) bags we will pay the freight to any station in Ontario east of Sudbury and south of North Bay (see terms above). To get the book, at least 3 bags must be flour—the other two bags may be flour or any other product mentioned in the list printed above. Read the list and make up an order to-day. Add 10 cents to your remittance to cover postage and wrapping of book.

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The Campbell Flour Mills Co., Limited
TORONTO

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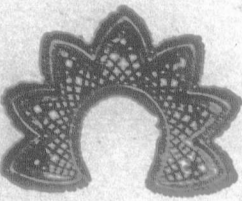
ENGLISH HAND-MADE LACE

MADE BY THE COTTAGERS OF BUCKINGHAMSHIRE.

This is the old-fashioned lace made on the cushion, and was first introduced into England by the Flemish Refugees. It is still made by the village women in their quaint old way.

Our Laces were awarded the Gold Medal at the Festival of Empire and Imperial Exhibition, Crystal Palace, LONDON, ENGLAND, for general excellence of workmanship.

BUY some of this hand-made Pillow Lace, it lasts MANY times longer than machine made variety, and imparts an air of distinction to the possessor, at the same time supporting the village lace-makers, bringing them little comforts otherwise unobtainable on an agricultural man's wage. Write for descriptive little treatise, entitled "The Pride of North Bucks," containing 300 striking examples of the lace makers' art, and is sent post free to any part of the world. Laces for every purpose can be obtained, and within reach of the most modest purse.



COLLAR—Pure Linen, \$1.00.



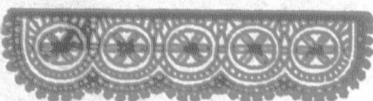
DAINTY HANDKERCHIEF—No. 910.—Lace 1 1/2 in. deep.

Collars, Fronts, Plaques, Jabots, Yokes, Fichus, Berthes, Handkerchiefs, Stocks, Camisoles, Chemise Sets, Tea Cloths, Table Centres, D'Oylies, Mats, Medallions, Quaker and Peter Pan Sets, etc., from 25c. 60c., \$1.00, \$1.50, \$2.00, up to \$5.00 each. Over 500 designs in yard lace and insertion from 10c. 15c. 25c. 45c., up to \$3.00 per yard.

IRISH CROCHET.

Mrs. Armstrong having over 100 Irish peasant girls connected with her industry, some beautiful examples of Irish hand-made laces may be obtained. All work being sold direct from the lace-makers, both the workers and customers derive great advantage.

Every sale, however small, is a support to the industry.



(1 1/2 in. deep.) STOCK—Wheat Design. Price 25c. each. (Half shown.)



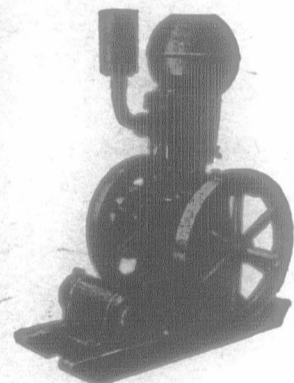
No. 122.—30c. per yard.

Mrs. Addie Armstrong, Olney, Bucks, England

Don't take our word only, but examine the Lister Engine at work alongside any other, compare its quality, efficiency, economy—in a word, let the engine speak for itself, and you will become another delighted user of the

Lister Gasoline Engine

British Made Throughout.



We have sold over 50,000 Melotte Cream Separators in Canada during 15 years. Ask any Canadian user how he likes the Melotte.

The most reliable, best quality and value. Starts instantly—every time, with Bosch Magneto ignition—no batteries to run down and give trouble.

Self-oiling—no oil cups to fill—no oil to waste.

Self-regulating at all loads. No attention needed when at work.

Fitted with phosphor-bronze bearings throughout, the best money can buy.

No babbit metal to wear and run out. In a word, the best quality engine ever seen in Canada.

Well—we guarantee the Lister as good an engine as the Melotte is a cream separator. We can't say more.

Catalogues, prices and terms free from:

R. A. LISTER & CO., LIMITED
58-60 Stewart St., TORONTO, ONT. 197 Princess St., WINNIPEG, MAN.

We Excel in Teachers, Courses and Results

One thousand positions in three years, \$30, \$40, \$50, \$60, \$80, \$125, \$200 and \$300 per month. You should see the juniors doing business with the seniors who manage the bank and other offices.

WINDSOR BUSINESS COLLEGE

These Prizes Are for You

Proficiency Certificates in Rapid Calculations.

Certificates, Gold Medals and Machines in Typewriting.

A scholarship in Cadman's School would be a valuable Xmas Gift.

College re-opens Monday, January 5th, 1914
Office open week days from 9 a.m. to 4 p.m.

CADMAN & SON, WINDSOR, ONTARIO

Phone 928

Davis Building, over Oak Hall

Box 187

SHORTHORNS AND CLYDESDALES

5 Bulls of serviceable age, choice quality, some of them herd leaders bred by His Grace (imp.) = 69740—and a number of cows and heifers. One stallion rising 3 years old. A big good quality horse, also four choice fillies, all from imported stock.

A. B. & T. W. DOUGLAS, L. D. Phone Strathroy, Ont.

My! how delighted they will be when the box arrives! I imagine I see them all. When one little girl receives a dress the other little girls will be all waiting, wondering if there will be enough for her. And when each has a dress—no! not all. There is one little girl standing breathlessly waiting. Would there be enough for her dollie? Yes, there is. The lady hands her the last dress in the box, and away she runs with her only Christmas gift.

Now, just think, Beavers, what a disappointment it would be to a great many little girls this Christmas if we all said we couldn't find time to make the dresses, or we would rather give them to some of our own friends. I believe the little Home children will appreciate them more than we would if we were to get one. Don't you think so Puck?

Oh say, girls, I have one of the cutest little kittens! It is almost as broad as it is long. We only have two cats. I call the old cat "Tiney" and the kitten "Ermany." They do have fine times playing.

Well, I guess I will close, as my letter is almost too long now. Bye-bye.

I wish you all a Merry Christmas and a Happy New Year.

Uxbridge, Ont. MABEL SOLLITT.

(Age 13, Class Sr. IV.)

You were perfectly right in thinking that the Beavers were required to make the dresses all themselves, Mabel; of course it wouldn't be a "Beaver's Competition" at all if someone else did the work. I think all our girlies were quite honest enough to understand.

The dresses were sent to the Children's Home the day before Christmas. The only regret was that we had not twice as many.

Dear Puck and Beavers.—This is my first letter to the Beaver's Circle. I am sending a doll's dress, please give it to some little girl in the home. My father has been taking "The Farmer's Advocate" for a long while. I have always enjoyed reading the Beaver's Circle.

I will close wishing the Beavers a Merry Christmas and a Happy New year.

Canfield, Ont. MARY GRANGER.

(Age 13.)

Dear Editor.—I am sending a doll's dress hoping it may cheer some little girl's heart, as I am an orphan girl from the Peterborough Home.

I remain yours truly,

THIRZA E. GILBERT.

Glanford Station, R. R. No. 2, Ont. care Mrs. Geo. Hall.

Dear Puck and Beavers.—When I saw your offer of a prize for making a doll's dress, I was determined to try. I had the muslin in the house, and thought it would make up easily. The first thing I did was to pick out what I thought the prettiest pattern and send for it. Immediately after I got it I set about making the dress. Once or twice I thought I would give up and keep the dress all myself, but when I made a mistake the only thing there was to do was rip it and make it right.

I think it is a splendid idea to give the dresses to the children at the Children's Home. I am sure they will be pleased to get them.

I am very fond of reading books, as I think most of the Beavers are. Christmas is near now, and all the little boys and girls will have to be real good if they want him to visit them.

We are going to have a Christmas tree for the Sunday School on Christmas night. Well, as my letter is getting rather long, I must say good-bye, wishing that the rest of the dress-makers may be successful.

Avonmore, Ont. MARY GUNN.

ALWAYS MOVING.

A young lady went into a well-known establishment a few days ago and said to the shopkeeper, "Do you keep stationery?"

"No, miss," replied the shopkeeper; "if I did I should lose my job."

The Ingle Nook.

[Rules for correspondence in this and other Departments: (1) Kindly write on one side of paper only. (2) Always send name and address with communications. If pen-name is also given, the real name will not be published. (3) When enclosing a letter to be forwarded to anyone, place it in stamped envelope ready to be sent on. (4) Allow one month in this department for answers to questions to appear.]

A Chapter on Economy.

(Continued.)

Having grasped the conception, then, that Economy means more than scrimping that money may be saved—that it means, rather, putting everything to its best use, time, strength, food, property, the possibility for personal development—let us turn to look at the subject a little more closely. It does seem, does it not? that we have to bring things right down to the personal before they impress us very much.

So first, then, let us consider Economy of Strength. At the very mention of the word, of course, one's mind flies instantly to all the labor-savers that are now on the market for lifting the burden of over-work from women's shoulders. Not a bit too early in coming are these, but so much has been said about them in this department that to-day we may pass over the subject entirely and turn to another. Even when provided with all the mechanical helps, and with a house that is convenient itself so far as arrangement is concerned, there are many women who are lavishly wasteful of their strength,—and in what ways?

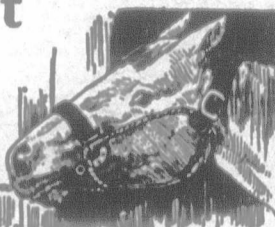
In the first place there is the woman who, possessed by that bugaboo, "keeping up appearances," lives under constant strain to get things done. To begin with, she has far too large a house, and wherever there is a house larger than necessary, there are scrubbing and dusting that are also unnecessary. It is "trot, trot, trot," from morning till night to keep things in order, for it is notorious that even though rooms be seldom used, they seem, somehow, to gather dust. For this reason—the work and worry of upkeep—large houses are going completely out of fashion in cities, except among people who can afford to keep a large staff of servants; indeed, the cry in every city is, "There are plenty of large houses to be bought or rented, but very few that are just the right size." The trend of to-day is to have comparatively small dwelling-places, but to have them just as convenient and just as artistic as possible. . . . For the sake of the housekeeper and all dependent upon her strength, and her good-humor, and her mentality, may the good work go on!

Then the woman bent on "keeping up appearances" is so likely to overdo herself sewing at all hours. It is, of course, necessary, to a certain extent, to think of personal appearance. It is necessary to be neat, to be tastefully and harmoniously gowned, to be reasonably up to date. But occasionally "keeping up appearances" is interpreted to mean "keeping up to the latest fashion," and so night hours which should be spent in sleep or in reading, or in resting the eyes, are given over to worrying over a multiplicity of gowns, or to creating frills and furbelows that are but a fashion of the passing moment, as evanescent as the breeze. Perhaps this temptation is more common to the town than to the country, but there is always danger of its appearing wherever wealth and the desire to be fashionable make their appearance. The wise woman will, it is true, realize that she must spend some thought on the matter of dress for herself and her daughters; she must think to determine styles and materials that will look well for the longest possible duration, but she will not sacrifice sleep and time that might be more precious spent, to every passing frivolity of fashion. Nervous hurrying through the day, loss of sleep during the night, will surely in time exact their toll. If they result in producing a nervous, miserable, irritable woman, who is to blame? Is it not well to count the cost in time—and to be just "sensible"?

It never, never, never pays to over-work, over anything at all. Pay will be exacted as surely as "death and taxes" will come. To keep strong and

Dr. Maria Montessori

He can't get away!



HERE is a halter that will hold your heaviest puller till the cows come home. It is leather where leather is needed, and ropes where rope is best. There are no weak places to snap. The heavy rope shank, which forms a part of the halter itself, distributes the strain, throwing the bulk of it on the horse's head and neck.

THE "GIANT" HALTER

As illustrated, is made of 1/2-inch pure Manila rope and best quality harness leather, doubled and stitched with heavy waxed thread. The metal parts are of tempered steel. It will fit any horse, and is as comfortable as it is secure. Weight less than 2 lbs.

Price \$1.00 Prepaid

The "GIANT" is the best one dollar halter on the market. If your dealer cannot supply, send us his name and address, and we will ship you one, prepaid, for \$1.

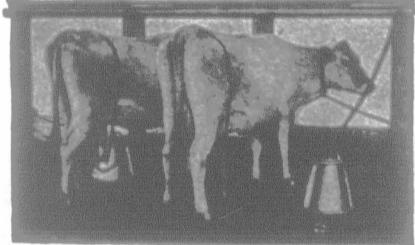
For delivery west of Ft. William, add 25c.

G. L. GRIFFITH & SON Dept. "A," Stratford, Ont.

Dealers - If you are not now handling the "Griffith" line of Horse Specialties, write to-day for price list and illustrated catalogue, showing the fastest selling line in the country.



HINMAN THE UNIVERSAL MILKER



Over 2400 sold last year in the United States alone.

The Hinman Milker

is chosen by the shrewdest buyers, because it is the best as well as the least expensive.

No Hand Stripping Required.

PRICE \$50 PER UNIT.

Write for catalogue and testimonials. Reliable agents wanted.

H. F. BAILEY & SON GALT :: ONTARIO

Harab FERTILIZERS

Write for FREE Fertilizer booklet and prices.

THE HARRIS ABATTOIR CO., LIMITED Strachan Ave., Toronto

Farmers - Make your concrete posts with wood strips and fasten with staples, for description of forms, address J. J. COOK, Cherry Valley, N.Y., U.S.A.

well is one of the great conditions for a happy, sane, useful life. Everything looks twisted and distorted to the nerve-racked one, and the whole family has to suffer. What, then, more important than Economy of Strength on the part of every member in it, if the home is to be kept sane and contented and wholesome?

To work to one's capacity—not an inch beyond it—this is the grand secret. May we each of us possess ourselves of it.

ECONOMY OF TIME.

Possibly this subject overlaps, somewhat, the foregoing; yet there is a phase of it which is distinctly separate.

Some people interpret economy of time to mean incessant working, never a moment wasted in a day, or a week, or a year; and, indeed, it seems as though some few people are capable of this unintermittent going from one thing to another.

For most people, however, economy of time demands rest-spaces. The old adage, "All work and no play, makes Jack a dull boy," is as true for the grown-up as for the child. The adult mind needs its rest and needs its play; if it has not these it is likely to become inefficient, and is not the whole of life really to keep the mind efficient? Nothing else counts very much; there is no sight on earth much more pitiful—or more disgusting—than to see a man or woman, surrounded by every comfort and luxury, but with a fat, lazy, useless, narrow, intolerant mind. "The mind is the man,"—really.

So another great secret is to know how to handle one's mind; to know just when and how it needs rest or diversion, in order that it may be brighter, better, and more sane afterwards.

The great danger for the majority of people is not, however, that they will fail to take mind-rest enough, but that they will fail to use the mind enough.

How very often one hears people say, "One's schooldays are the best time of one's life," and nine people out of ten agree. Perhaps the statement is, as a rule, true. The glamor of youth hangs about schooldays, there is freedom from responsibility then, but perhaps the greatest charm, though seldom recognized, lies in the fact that during schooldays the mind is definitely and steadily working. A new world is opening up, day by day, a world full of surprises, and the better the teacher the more vividly that world is presented.

But after leaving school, the magical doors, for the very great majority of folk, swing shut. Books are thrown aside. Reading becomes confined to the newspaper. All the energies are turned to making money, and all the interests confined to the people met in one's own very cramped environment.

A vast universe of wonderfully interesting things lies all about, but people shut their eyes to it. They will not take the time to read books that tell about it, and so they go on like moles to the end of their days, never realizing the wonderful pleasures and interests they are missing.—Only the happy few who have never let the magical doors swing shut realize that. (Please read Conan Doyle's "The Magic Door.")

School should not end a chapter in life; it should merely begin one. There is not a soul on earth who cannot go on developing mentally, more or less rapidly until old age comes—if a definite effort be put forth. Life itself, of course, teaches something, but the life with which most of us come in contact is necessarily very limited. Books open to the broader life, for what are the best books but life itself, the best thoughts of men held there on the printed page. Books are not dead. They are alive, pulsing with life, even though the life be of someone who died one hundred years ago.

Nor does the value of books lie in themselves alone. Their real value lies in the power of suggestion they possess, the power to make one think. Sometimes, when reading, a sentence or phrase is encountered that sends one's own mind off on a new track, a new trip of exploration that may reveal gratifying surprises. Sometimes one approves, at other times one disapproves,—but always one is thinking, thinking, judging, balancing, getting new impressions or

solidifying old ones, in a way that one never could at all if one never read at all, but confined her mind wholly to interest in the doings of her neighbors.

The books read must, of course, be the right kind, if such results are to be had, for unquestionably the bookstalls are flooded with trash as well as good matter; and sometimes it is hard to know just how to begin. A good plan is to read biography. Usually a man amounts to something else—a biography will not be written about him, and in nearly all biographies there are references to influences and books which will afford a key to further reading.

But what has all this to do with Economy of Time? Simply this, that in almost every home, time is literally wasted that might be spent on reading. Books are cheap, and there are practically free libraries. One of the economies of time is to see that such opportunities are not passed by. Next time we will turn to something more "practical."

CRACKER PUDDING.

Dear Junia and Nook Friends,—I am so sorry to see that in sending in my recipe for cracker pudding a few weeks ago that I was careless or in too much of a hurry. However, I made a serious mistake, which I wish to rectify. I notice I have 2 1/2 cups sugar and 2 1/2 cups cream. Now, my recipe is this:

One cup biscuit crumbs, crisp; 1 pint of milk. Put in pudding-dish on back of range. Prepare 2 eggs (whites separate), 1/2 cup sugar, 1/2 cup cream, pinch of nutmeg; add to yolks. Heat milk and crumbs to boiling point; add all other ingredients except whites; let cook twenty minutes. Beat whites stiff with sugar to sweeten, and fold in the pudding with a little vanilla flavoring if desired. Place in hot oven till golden-brown.

Can anyone tell me how to, or what to do with butter that will not gather? I am having serious trouble. Wishing all a Happy New Year, sincerely, MAYFLOWER.

Glengarry Co., Ont.

Our dairy editor says to have the cream at a little higher temperature when churning; also, if possible, to mix cream from the milk of "fresh" cows with that churned.

A NEW YEAR LETTER.

Dear Junia and Chatterers,—The shades of 1913 are forever hidden from our view, and another milestone on the tolling path to Eternity has been reached. At the dawn of a New Year one naturally becomes reminiscent, and one's thoughts involuntarily revert to our friends. So allow me to wish all my Ingle Nook friends a truly happy and prosperous New Year.

I have been wondering who was the feminine correspondent who was sufficiently presumptuous to criticize some of Peter McArthur's assertions. She surely must be enjoying single blessedness, else she would know that it is useless to attempt to get the advantage of one of those superior beings—men. If a woman ever influences a man she must use considerable tact, and never let him know that she thinks she has got the best of him.

All jesting aside, Peter McArthur's weekly letter is universally enjoyed.

Junia, can you not invent some scheme to let us hear from some of our old chatterers? So few lengthy letters appear in the Ingle Nook. But I must say adieu. FORGET-ME-NOT.

We should all be glad to have some old-time "letters." Our corner seems to be changing to a Question Bureau. Of course, that is all right, too, in its place. Perhaps your letter may have the desired effect of stirring up a few of our old friends, Forget-me-not.

HOW TO COOK KALE.

Pick over very carefully, discarding all coarse stems. Tear the big leaves off the center stem and soak in strong salt water half an hour. Put on in boiling water, adding a pinch of soda. It requires long boiling, especially before severe frost. Drain and mash thoroughly, add salt, pepper, butter, and some cream or rich milk. If liked, a handful

Butter and Eggs



FIG. 1

RUDD'S Butter and Egg Cartons



FIG. 2

ARE SAFE, SANITARY and ECONOMICAL For Every Purpose

Fig. 1.—Our patent, self-locking egg carton. Fig. 2.—Knock-down egg carton with cushion division. Fig. 3.—Butter carton to hold one pound paraffined.



FIG. 3

Write for circulars and price.

RUDD PAPER BOX CO., Limited Toronto, Ontario Z3

The More Intelligent Farmers

are sending their sons to the O.A.C. to learn the science of farming, and to the "Kennedy" to learn the business of farming. Requires only 3 months—\$30.

Write for catalogue.

THE KENNEDY SCHOOL, Bloor and Bathurst Streets, Toronto

Raw FURS Raw

Immediate Cash Payment and an honest sort is what we guarantee. That is why the old trappers and fur dealers ship their furs to us. Our motto is "A square deal to all. Send at once for our Price List. ROSENBERG BROS. Dept. H., 97 Jefferson Ave., Detroit, Mich.

Cream Wanted

Toronto consumes daily the milk and cream from over 14,000 cows, and the butter from over 70,000 cows. We need your cream. Write

TORONTO CREAMERY CO., Limited 9, 11 and 13 Church St., Toronto

WANTED—HIDES TO TAN

for robes, coats, etc., horse hides, cattle hides and furs. No leather tanned.

H. F. BELL - Delhi, Ont.

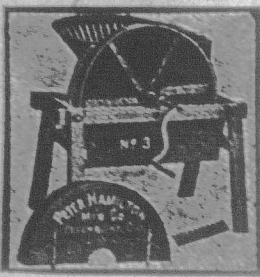
Strawberries, and RASPBERRIES reach their highest development here on the shore of Lake Erie. Our Free Catalog describes 50 leading kinds, with cultural directions, etc. Be sure and write for it. THE LAKE VIEW FRUIT FARM, H. L. McConnell & Son, Grovesend, Ont

FRUITFUL TOWNS.

"We countrymen have the best of it. When all else fails, we can eat the forest preserves."

"I don't know that you have the best of it," retorted the city fellow. "We have our subway jam."

HAMILTON'S No. 3 Root Pulper



A good root pulper on your farm effects a big economy and greatly benefits your stock. Here is a strong, easy-running pulper that will earn its cost over and over again. Equipped with reversible knives—will slice as well as pulp. Knife wheel is made with a heavy rim, giving it the same momentum as a flywheel and making the machine run smoothly and steadily. Hopper is of special design and feeds rapidly and regularly; will neither choke nor clog. Boxes are equipped with anti-friction roller bearings, which add greatly to the ease of operating this machine.

Write for handsome free catalogue. We make Mowers, Rakes, Drills, Cultivators, Harrows, Plows, Root Pulpers, Feed Cutters, etc. Sold by all JOHN DEERE FLOW CO. DEALERS.

The Peter Hamilton Co., Limited
PETERBOROUGH, ONTARIO

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 advertisements inserted for less than 50 cents.

BRONZE turkeys—Heavy toms and hens at reasonable prices. G. E. Nixon, Ilderton, Ont. R. R. No. 3.

BRONZE turkeys—The best we ever raised, from winners at Guelph, 1912. Apply to W. Stewart & Son, Meaford, Ont.

CHOICE Pekin ducks of both sexes for sale. Bred from prize winners. Garland Bros, Pinkerton, Ont.

FOR SALE—Mammoth Bronze turkeys; prize-winners at the Western Fair, also Guelph. Angus Beattie, Wilton Grove, Ont. R. No. 1.

FOR SALE—A few choice Rose Comb Rhode Island Red cockerels, from my best laying strain, two to five dollars each. Howard Smith, Winona, Ont.

FORTY-FIVE varieties fancy poultry. Handsome catalogue free. S. A. Hummel, Box 23, Freeport, Illinois.

MAMMOTH Bronze turkeys, fine, heavy, vigorous birds; bred from prize stock. R. G. Rose, Glenworth, Ont.

ONE hundred Banded Rock cockerels, bred from my high-grade stock and laying strains. Prices reasonable. Leslie Kerns, Freeman, Ont.

PURE Bred Bronze Turkeys, Brown Ducks single comb White Leghorns. Prices reasonable. C. A. Powell, Arva, Ont.

PRIZE Bred Rock and Minorca cockerels and hens for sale. Wm. Hay, White Bridge, Hamilton Road, Telephone 3335 London or Rural Delivery No. 8.

"SNOWFLAKE" White Leghorn Cockerels. Either show or breeding quality. Low prices. E. W. Burt, Paris, Ontario.

WANTED—New laid eggs; highest price paid for strictly fresh supply. J. D. Arsenausk, 15 Gothe, Montreal.

WHITE Wyandottes—Cockerels and hens. Satisfaction guaranteed. Duncan McTavish, Chesley, Ont.

WANTS & FOR SALE

Advertisements will be inserted under this heading, such as Farm Properties, Help and Situations Wanted and Pet Stock.

TERMS—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. No advertisement inserted for less than 50 cents.

CANADIAN Farmer wishes to rent a stock or dairy farm with stock and implements, Western Ontario preferred. Would like possession 1st March. Apply box R, Farmer's Advocate, London.

FIRST Class herdsman seeks a position with dairy cattle (Holsteins preferred). Experienced in feeding test cows. Apply Box 45, Farmer's Advocate, London.

PARTNER Wanted with all classes of live stock, principally cattle, to join owner of first class section completely fenced, with good buildings and plenty of water, in sight of Regina, Sask., worth sixty dollars per acre, each taking half interest and partner managing this most profitable mixed farming business. For full particulars address Owner, 146 Cottingham Street, Toronto.

SEND for wholesale catalogue to Lancashire's Cheapest Drapery Warehouse, and learn how to increase income. Make money selling British goods, tablings, towellings, ready-made dress materials, ladies' overalls, pinafore muslins. Cochran's Warehouse, Victoria Bridge, Manchester, England.

91 Acres Burford Township, sand and gravel loam, good 6 room house, main barn 30x60, straw shed 22x32, cement stabling under both, good root cellar, hog pen and hen house; 15 acres good pine and cedar timber, price \$4200. C. R. Davis, Princeton, Ont.

Please mention "The Farmer's Advocate."

of oatmeal may be added while mashing. It is delicious, and one of our most healthful vegetables. M. B. Elora, Ont.

ANOTHER.

Dear Junia,—I notice a recipe is wanted for cooking kail, so as I have been a lot benefited by many of the hints and recipes given in "The Farmer's Advocate," I hasten to forward the way they are cooked in Ayrshire, Scotland.

To half a gallon of water add two tablespoonfuls of oatmeal. Bring to boiling point and add the kail well washed and picked off the center stalk. Boil till tender about twenty minutes or so. Strain off water, then add salt, pepper, and a good piece roast meat dripping. Make all very hot, and serve at once. They are just splendid with corned beef, and are not usually cooked here till they have had a touch of frost, which makes them tender and good.

AN AYRSHIRE READER.

Ayrshire, Scotland. This subject is now closed. We thank very much all those who have so kindly contributed recipes.

SHE THINKS THEY ARE BEAUTIFUL.

Dear Sir,—Received your set of dishes the other day, and I think they are beautiful. I will do all I can to extend your valuable paper. Yours truly, Victoria Co., Ont. E. E. L.

ANOTHER PLEASED.

Please accept thanks for the beautiful teaset which you sent me. They are as dainty as they can be. Wishing you every success in the coming year, I remain yours very truly. E. M. D. Oxford Co., Ont.

The Scrap Bag.

TO PREVENT CLOTHES FROM FREEZING.

A writer in a contemporary magazine says that if salt is put in the last rinsing water, clothes will not freeze when hung on the line.

GARTER HOLDERS THAT HOLD.

To keep children's underwaists from being torn where the garters are fastened, slip stout tape through brass rings and sew firmly to the waist. The garter pins are then fastened to the ring.

TO TRANSFER PATTERNS.

An easy way to transfer a pattern to be worked is to pin the pattern and the material to be worked together, then hold them up against the glass of a window and trace the design with a lead pencil. For heavy material, use carbon paper. Place a sheet of it between the pattern and the material to be worked, being sure to have the transferring side next the latter, then go over the pattern with a sharp point. The impression will be left in fine lines, and will last until worked.

TINTING LACE.

To give white lace the rich, old-ivory tone of old "real" lace, proceed as follows: Place in a pan five cents' worth

of yellow ochre, and mix with it enough rice powder to give the desired shade. Rub the lace in this, then brush away all loose powder.

TO KEEP DOWN IN PILLOWS.

To keep down from working through pillow ticks, before filling the ticks, dip a brush in melted paraffin and apply to the wrong side of the material, then iron with a warm iron.

EYE-GLASSES IN COLD WEATHER.

To prevent eye-glasses from becoming steamed or frosted in cold weather, rub the glass with good glycerine soap (no water) and polish with a soft cloth.

CHAPPED LIPS.

A cure for chapped lips is made as follows:

Fine Russian isinglass, $\frac{1}{2}$ ounce.
Glycerine, 2 ounces.
Rose water, 6 ounces.
Oil of roses, 10 drops.

SCHOOL LUNCHEONS.

Luncheons for children during cold weather should be especially appetizing; a cold, unattractive luncheon in cold weather is depressing. Celery, cheese and fruit, are always acceptable, also sandwiches of various kinds. Whole-wheat bread sandwiches are good made with a filling of chopped figs and walnuts, with a dash of lemon juice. White-bread sandwiches may be filled with hard-boiled egg chopped and seasoned, or with minced beef nicely seasoned. "Adobe" sandwiches are made as follows: Butter two crackers, sprinkle one with brown sugar, the other with finely-shaved sweet chocolate, then press together. They are both appetizing and nourishing.

Cooking for Cold Weather.

Pot Roast.—Grease the bottom of an iron kettle with beef fat. Take three pounds of round roast, chuck, ribs, shoulder piece, or aitchbone, costing from 12c. to 18c. per pound. Dredge the meat with flour, place it in the kettle and turn until it is well browned on all sides. This sears the outside and prevents the juices from being extracted, leaving the meat dry and tasteless. Now add one pint of water, or enough to come half-way up the beef. Add a teaspoonful of salt and a slice of onion; cover and place where it will simmer (never boil) until tender. Watch that the water does not simmer away and the meat burn—add more water from time to time if it boils down. When tender, remove to a hot dish. Remove surplus fat from the liquor; add enough water to make one pint of liquor. Rub two tablespoonfuls of flour in a little cold water, then add gradually to the liquor, stirring constantly. Season with pepper, salt and butter. Anyone who cares for herb seasoning may add a pinch of parsley or sweet marjoram.

A Fine-grained Gingerbread.—Beat together $\frac{1}{2}$ cup butter and 1 cup sugar, then add 2 beaten eggs, $\frac{1}{2}$ cup molasses, $\frac{1}{2}$ cup milk, 3 tablespoonfuls yellow ginger, $\frac{1}{2}$ teaspoon soda, and 2 cups flour. "Yellow" ginger is a mixture of ginger and turmeric.

Creamed Salt Codfish.—Pick the fish into small shreds to fill a cup, cover with cold water and let stand over night. Set over the fire in the same water and heat slowly (do not boil) until the water looks milky, then drain. Melt 2 tablespoonfuls butter and in it cook 2 tablespoonfuls flour, then add 1 cup milk and stir until boiling. Add the drained fish, and beat in one egg beaten very light. Stir until the egg thickens, but do not let boil. Serve with hot baked potatoes.

Spareribs of Fresh Pork.—Rub the ribs with salt and flour and put in a moderate oven. Let cook about 20 minutes to the pound; baste often with the dripping, and sprinkle with a little flour after each basting. When three-parts done, surround the ribs with onions previously boiled until almost tender. Baste the onions when you baste the meat.

Stuffed Cabbage.—Trim a cabbage head nicely, cover with boiling water and let cook gently for 25 minutes, then drain well. Cut out the center, season inside with salt and pepper. Take one pound sausage and mix with two cups fine bread crumbs (soft), season, and fill the

cabbage; tie a string around to hold all in place. In a dish put a sliced onion and half a carrot also sliced. Place the cabbage on top, pour in a cup of broth, or hot water, and cook over an hour in a moderate oven. Place the cabbage on a hot serving dish, thicken the broth with two teaspoons flour blended in a little cold water, then pour about the cabbage.

Gingerbread Pudding (From Otago, New Zealand, Witness).—One-half lb. flour, 2 ounces suet, pinch salt, $\frac{1}{2}$ teaspoon ginger, 1 teaspoon baking powder, $\frac{1}{2}$ pint milk, 1 egg, 6 ounces treacle. Mix suet with flour, add dry ingredients, then beaten egg and milk, and last of all the treacle. Mix well, pour into a greased basin, cover with a greased paper and steam two hours. Serve with sweet sauce.

Corn Meal Apple Bread.—Sift $\frac{1}{2}$ quart corn meal with 4 (level) tablespoons baking powder and $\frac{1}{2}$ teaspoon salt. Add $\frac{1}{2}$ cup sugar, 4 tablespoons melted butter, $1\frac{1}{2}$ cups water; then beat in 1 pint ripe, chopped apples. Mix well, and bake in greased pans in a hot oven for 20 to 30 minutes. Serve hot with plenty of butter.

News of the Week

CANADIAN.

Several apparent cancer cures from the use of radium are reported from Toronto. Time will be required, however, to show whether the treatment is specific.

Senator Helen Ring Robinson, of Denver, Col., the only woman senator in the world, lectured in Toronto last week.

Fifteen thousand unemployed men are walking the streets of Toronto in search of work, and the Labor Temple is packed with men seeking employment of any kind. . . . At time of going to press, no further trouble is anticipated in Regina, which has been under police surveillance on account of the threats made by the unemployed.

The Railway Commission, in an order issued on January 9th, made some important reductions in express rates, to become effective February 1st.

In cases where the rates per 100 pounds are 90 cents, the reductions in the present minimum charges are: Two-pound parcels, 5 cents; 3 pounds, 15 cents; 4 pounds, 20 cents; 5 pounds, 15 cents; 6 and 7 pounds, 23 cents.

Where the rate per hundred is a dollar, the reductions in the minimum are: Two pounds, 5 cents; 3 pounds, 10 cents; 4 pounds, 15 cents; 5 pounds, 10 cents; 6 and 7 pounds, 20 cents.

Where the rate is \$1.25 per hundred, the reductions in the minimum are: Two pounds, 5 cents; 3 pounds, 10 cents; 4 pounds, 15 cents; 5 pounds, 10 cents; 6 and 7 pounds, 15 cents.

In cases where the rates are \$1.50 per hundred, the reduction is: Two pounds, 5 cents; 3 and 4 pounds, 10 cents; 5 pounds, 5 cents; 6 and 7 pounds, 10 cents.

Where the through rate is \$1.75 per hundred, there is in the case of 2, 3, 4, 6 and 7-pound shipments, reductions of 5 cents in the minimum charge.

According to the financial statement issued on January 9th, an increase of nearly \$3,000,000 is shown in the total Dominion revenue during the past nine months of the fiscal year.

BRITISH AND FOREIGN.

Thirty-five thousand South African railway employees went on strike on January 8th.

Joseph Chamberlain has announced that he will retire from Parliament at the next general election. He is 78 years of age, and has served as member of the House of Commons for Birmingham since 1876.

The Archbishop of Paris has condemned the tango, which has become a craze in Europe as well as in America.

Italy and Austria have reached an agreement in regard to the Southern frontier of Albania.

A fund amounting to \$5,000,000 has

Dr. Maria Montessori

been raised to indemnify the relatives of those who may be killed or wounded among the Ulster Unionist volunteers in resisting home rule.

An appalling loss of life has taken place during the last fortnight's fighting in Mexico.

There is a strong feeling in Bulgaria against King Ferdinand, who is regarded as personally responsible for the overthrow of Bulgaria, on account of his having given orders for the opening of hostilities against the allies without the knowledge of his ministers. As the king began his speech at the opening of the Sobranje on January 1st, the opposition manifested decided hostility, and the Socialists, who number 37 in the new Parliament, greeted his appearance with shouts of "Down with the Monarchy! Long live the Republic!" The 47 Agrarian members refused to return the royal salute.

The People of the Whirlpool.

By Mabel Osgood Wright. [Serial rights secured from the Macmillan Publishing Co., Toronto and New York.]

Chapter XII. HIS MOTHER.

July 1. It was several days after the festival before the news of the Latham divorce was made definitely public by a paragraph under the heading of "Society News," in one of the New York papers, though of course the rumor had crept into every house on the Bluffs, by way of the back stairs.

Miss Lavinia was greatly distressed, and yet did not know exactly how to act in the matter; for though Mrs. Latham was seen driving by, as usual, Sylvia made no sign.

We may read of such cases often enough, and yet when the blow falls in the immediate neighborhood, one must feel the reflex of the shock. While sympathy for Sylvia keeps the thing ever present, like a weight upon the chest, I find myself wondering if anything could have been done to avert the disaster, and we all rove about in a half-unsettled condition. Half a dozen times a day Lavinia Dorman starts up with the determination of calling upon Sylvia, but this morning decided upon writing her a letter instead, and having sent it up by Timothy Saunders, is now sitting out in the arbour, while Martin Cortright is reading to her from his manuscript; but her attention is for the first time divided, and she is continually glancing up the road as if expecting a summons,—a state of things that causes an expression of mild surprise and disappointment to cross Martin's countenance at her random and inappropos criticisms. I see that in my recent confusion I have forgotten to record the fact that Miss Lavinia has fallen into the role of critic for Martin's book, and that for the last ten days, as a matter of course, he reads to her every afternoon the result of his morning's work, finding, as he says, that her power of condensation is of the greatest help in enabling him to eliminate much of the needless detail of his subject that blocked him, and to concentrate his vitality upon the rest.

This all looks promising, to my romantic mind; for the beginning of all kinds of affection, physical, mental, and spiritual, that are huddled together in varying proportions as component parts of love, has its origin in dependence. Father declares independence, selfishness, and aloofness to be the trinity of hell. Now Martin Cortright has come to depend upon Lavinia Dorman's opinion, and she is beginning not only to realize and enjoy his dependence, but to aid and abet it. Is not this symptomatic?

When I approach father upon the Latham affair, he says that he thinks the rupture was inevitable from the point of view and conditions that existed. He feels, from the evidence that long experience with the inner life of households has given him, that though a thoughtless woman may be brought to realize, and a woman with really bad inherited instincts reclaimed, through

love, the wholly selfish woman of Mrs. Latham's type remains immovable, and is unreachable, save through the social code of the class that forms her world, and this code sanctions both the marriage and the divorce of convenience, and receives the results equally with open arms.

As to the effect upon Sylvia, father exhibits much concern, and no little anxiety, for he has read her as a nature in some respects old for her twenty-one years, and in others, the side of the feminine, wholly young and unawakened, so that this jar, he thinks, comes at a most critical moment.

He has a pretty theory that the untroubled heart of a young girl is like a vessel full of the fresh spring sap of the sugar maple that is being freed by slow fire from its crudities and condensed to tangible form. When a certain point is reached, it is ready to crystallize about the first object that stirs it ever so slightly, irrespective of its quality: this is first love. But if the condensing process is lingering, no jar disturbing it prematurely until, as it reaches perfection, the vital touch suddenly reaches its depths, then comes real love, perfected at first sight, clinging everlastingly to the object, love that endures by its own strength, not by mere force of habit; and this love belongs only to the heart's springtime, before full consciousness has made it speculative.

When Horace Bradford drove homeward the afternoon of the fete, he was in a brown study, having no realization of time or place until the wise horse turned in at the barnyard gate, and after standing a moment by his usual hitching post, looked over his shoulder and gave a whinny to attract his master's attention. Then Horace started up, shook off his lethargy, and hurried to the porch, where his mother stood waiting, to give her the roses, and Sylvia's message.

Mrs. Bradford was, for one of her reserve, almost childishly eager to hear of the experiences of the afternoon, and was prepared to sit down comfortably on the porch and have her son give a full account of it; but instead, he gave her a few rather incoherent details, and leaving her standing with the splendid roses held close to her face, very much in Sylvia's own attitude, he hurried up to his room, where she could hear him moving about as if unpacking his things, and opening and shutting drawers nervously.

"Never mind," she said softly to herself, "he will tell me all about her when he is ready. Meanwhile, I'll wait, and not get in his way,—that is what mothers are for." But by some strange impulse she loosened the string that bound the roses, and placed them in one of her few treasurers, a silver bowl, in the centre of the supper table, and going to her bed-chamber, which was, country fashion, back of the sitting-room, arrayed herself in Horace's gifts,—the silk gown and fichu, with the onyx bar and butterflies to fasten it,—and then returned to the porch to watch the twilight gently veil sunset.

Upstairs, Horace unpacked his trunks in a rebellious mood. In the morning he had felt in the proper sense self-sufficient and contented,—the position, which a few months before he thought perhaps ten years ahead of him, had suddenly dropped at his feet, and he felt a natural elation, though it stopped quite short of self-conceit. He could afford to relax the grip with which he had been holding himself in check, and face the knowledge that he loved Sylvia; while the fact that fate had brought her to summer in his vicinity seemed but another proof that fortune was smiling upon him.

Now everything, though outwardly the same, was changed by the new point of view, which he realized that he had already tried to conceal from his mother, by his scanty account of the festival. He had suddenly been confronted by conditions that he never expected to meet outside of the pages of fiction, and felt himself utterly unable to combat them. Under the present circumstances even neighborly friendship with Sylvia would be difficult. It was not that Mrs. Latham had overawed him in the least, but she had raised in him so fierce and blinding a resentment by her only half-unconscious reference to his mother, that he resolved that under no



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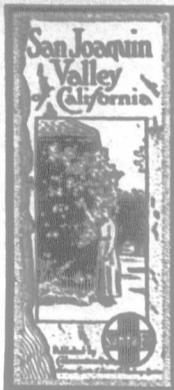
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circumstances should she run the risk of being equally rebuffed. He would protect her from a possible intercourse, where she could not be expected, at her age, to hold her own, at no matter what cost to himself.

"Egg woman!" Was it not his mother's pride and endeavour, her thrift and courage to carry on the great farm alone, and the price of such things as those very eggs, that had carried through his dying father's wish, and sent him to college, thus giving him his chance in the world? No regret at the fact, no false pride, dawned on him even for a second. All his rage was that such a woman as Sylvia's mother should have the power to stir him so, and then his love for Sylvia herself, intensified by pity for the unknown trouble that he sensed rather than read in her face, cut into him like a wound. He felt as if he must pick her up in his strong arms and bear her away from all this clamoring people; and then the realization both of his inability and ignorance of her own attitude fell upon him like a chill, for she had never written or said a word to him that might not have passed between any two college friends. Such thoughts occupied him, until finally, as often fortunately happens in our mental crises, a hum-drum, domestic voice, the supper bell, called him, and leaving his garments strewn about the room, he went downstairs.

His mother was still sitting in the porch, and he became at once conscious of a change in her appearance. As she looked up in pleased expectancy, he recognized the cause, and his sternness vanished instantly, as he said, "How fine we look to-night," and half sitting on the little foot-bench beside her, and half kneeling, he touched the soft face, and gently kissed the withered cheek whose blood was still not so far from the surface but that it could return in answer to the caress, while she looked yearningly into the eyes that even now were hardly on a level with hers, as if searching for the cause of what might be troubling him. Yet she only said, as they rose and went indoors, "I put on your gifts for you, at our first supper together," adding with an unconsciousness that made Horace smile in spite of himself,—"besides, I shouldn't wonder if some of the neighbors might drop in to see us, for it must have got about by this time that you've come home; the mail carrier saw you drive out this morning, I'm quite sure."

Neighbors did call; some from pure friendliness, others to see if "Horace acted set up by his new callin' and fortune," and still others, who had been to the Bluffs that afternoon, to tell of the wonders of the festival, their praise or condemnation varying according to age, until Mrs. Bradford was at a loss whether to think the affair a spectacle of fairyland or a vision of the bottomless pit, and Horace was in torment lest he should be appealed to for an opinion, which he was presently. "What did he think of the tea-room? Was Mrs. Latham painted? Was she Sylvia's mother, or step-mother, and if she was the former, didn't she act dreadful giddy for the mother of grown children? And didn't he think Sylvia was just sweet, so different from the rest, and sort of sad, as if she had a step-mother, as people said, and was sat on?" The questioner being the very woman for whom Sylvia had taken such pains in selecting the bouquet of specimen roses, who proved to be the new wife or a neighbor whom Horace had not met.

It seemed to Horace that his mother purposely looked away from him as he tried to pull himself together, and answer nonchalantly that he believed that Mrs. Latham was Sylvia's own mother, though she did appear very young, and that of course she was acting the part of a Geisha girl, a tea-seller, which would account for her sprightly manner, etc., unconsciously putting what he wished in the place of what he knew, adding with a heartiness that almost made his voice tremble that Miss Sylvia certainly did seem different, and as if she was no kin of her mother's.

"I guess, then, likely it isn't her step-mother, but that she's worried in her mind about her beau," continues the loquacious woman, pleased at having such a large audience for her news. "I heard some folks say,—when I was waitin' about for my cream, and havin'

a good look at all the millionaires, which they didn't mind, but seemed to expect, the same bein' fair enough, seein' as it's what I paid to go in for,—that the man they call Mr. Bell, that's been hangin' around the Bluffs since spring, is courtin' her steady, but she can't seem to make up her mind. Thinks I to myself, I don't wonder, for I've had a good look at him, and he's well over forty, and though he dresses fine, from his eyes I wouldn't trust him, if he was a pedler, even to weigh out my rage and change 'em for tin, without I'd shook the scales well first. The same folks was sayin' that he's a grass widower, anyway, and I shouldn't think her folks would put up with that, fixed as they be, yet they do say," and here her voice dropped mysteriously, "that Mrs. Latham's a kind of grass widder herself, for her husband hasn't turned up in all the year she's been here, and nobody's so much as seen his name to a check."

At this point Mrs. Bradford made an effort to turn the conversation into other channels; for friendly as she always was with her neighbors of all degrees, she never allowed unkind gossip in her house, and only a newcomer would have ventured upon it. As it was, the loquacious one felt the reuke in the air, and made hasty adieu on the plea of having to set bread, leaving the rest to talk to their host of themselves, their pleasure at his return, and the local interests of Pine Ridge.

When they had all gone, Horace locked the back door, after filling an old yellow and bronze glazed pitcher, which bric-a-brac hunters would have struggled for, at the well, as he had done every night during his boyhood, he left it on the hall table, and going out the front way to the garden, walked up and down the long, straight walk, between the sweet peas and rose bushes, for more than an hour, until, having fought to no conclusion the battle into which a new foe had entered, he returned to the house and went noiselessly to his room.

Here, in place of the confusion he had left, quiet and order reigned. All his clothes were laid away in their old places. He had but to reach his hand inside the closet, the door of which hesitated before opening in its familiar way, to find his night gear; the sheets were turned down at the exact angle, and the pillows arranged one crosswise, one upright, as he liked them—his mother's remembering touch was upon everything.

He undressed without striking a light, and lay down, only to look wakefully out at the dark lattice of tree branches against the moonlit sky. Presently a step sounded on the stairs and paused at his partly open door. He raised himself on his elbow, and peering through the crack saw his mother standing there in night-dress and short sack, shading the candle with her hand as she used when he was a little chap, to make sure that he was safe asleep and had not perhaps crept out the window to go coon hunting with the bigger boys,—a proceeding his father always winked at, but which she feared would lead him to overdo and get a fever.

"I'm here, mother," he said cheerfully.

"Are you quite comfortable, Horace? Is there nothing that you want?"

He hesitated a moment and then said frankly, "Yes and no, mother."

"Is it anything that I can do for you?" she asked, coming into the room and smoothing his hair as she spoke.

"Ah, that is the no of it, and the hard part," he answered, capturing the hand and holding it tight between his own.

"And the hard part for your old mother too, when the one thing comes that she cannot give or do. Whatever it is, don't shut me out from it, Horace,—that is, unless you must," and tucking the light summer quilt in under the pillow by one of his hands she kissed his forehead and went away.

Horace Bradford must have slept, for his next consciousness was of the fresh wind and light of morning, and as he drew his cramped hand from under his pillow, something soft and filmy came with it,—a woman's handkerchief edged with lace.


For a minute he held it in surprise, and then began to search the corners for the marking. There it was, two-

Dr. Maria Montessori



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embroidered initials, S. L. Where had it dropped from? Who had put it there? Was it a message or an accident? Yet it was both and neither. His mother had found the dainty thing in the package from New York that held the gown and ornaments, where it had dropped from Sylvia's waist that night, four months before, when she stood leaning on Miss Lavinia Dorman's table, as the parcel was being tied.

Mrs. Bradford had pondered over it silently until, the day when I went to see her and chanced to mention Sylvia Latham's name, its identity flashed upon her; and when gropingly she came to associate this name with something that troubled Horace, obliterating self and mother jealously, she tucked the bit of linen underneath his pillow, with an undefined idea, knowing nothing, in the hope that it might comfort him. And so it did; for even when he learned the manner of its coming, he put it in his letter case as a reminder not to despair but wait.

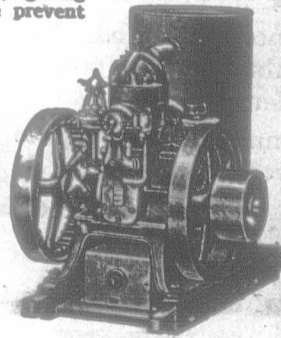
When a week had passed and the matter of the divorce had been well aired, discussed, and was no longer a novelty to her neighbors on the Bluffs, Mrs. Latham's plan of soon closing her cottage and transferring the servants to Newport, with the exception of the stable men and a couple of caretakers, was announced, as she was going abroad for the baths. The same day Lavinia Dorman received an urgent note from Sylvia, asking her "when and where she could see her alone, if, as she thought likely, she did not feel inclined to come to the house." The tone of the brief note showed that Sylvia felt the whole matter to be a keen disgrace that not only compromised herself but her friends.

Of course Miss Lavinia went, and would have gone even if she had to

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combat Mrs. Latham, for whom she asked courteously at the door; but that lady, for some reason, did not choose to appear and run the gauntlet, and sent an elaborate message about a sick headache by the now somewhat crestfallen Perkins. Presently Sylvia slipped into the morning room, and crouching by Miss Lavinia, buried her face in her friend's lap, the tension at last giving way, and it was some time before she grew quiet enough to talk coherently, and tell her plan, which is this: she wishes Miss Lavinia to take the Alton cottage (which is furnished) at the foot of the Bluffs, for the rest of the season, and live there with her. Then as soon as Mrs. Latham has gone, and the poor girl has steadied herself, her father, to whom she has already written, will come, and what she will do in the autumn will be arranged. Everything is as yet vague; but one thing she has decided for herself—under no circumstances will she again live with her mother, and she is now staying quietly in the house and taking her meals in her room, in order to give the scandalmongers and gossips as little material as possible.

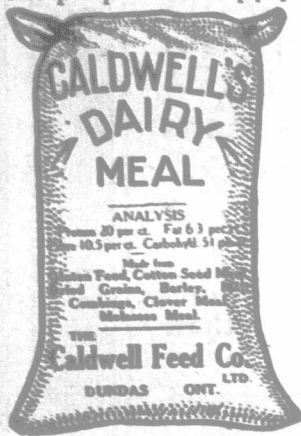
Lavinia Dorman, who readily consented to do as she asked, says that Sylvia is brave and heartbroken at the same time, that all her girlish spontaneity has gone, and she is like a statue.

I am sorry to have Miss Lavinia go, even a few hundred yards down the road, it has seemed so good to have an older woman in the house to whom I can say, "Would you, or wouldn't you?" Martin is also quite upset and has stopped writing and begun fumbling and pulling the reference books about again; but Miss Lavinia says that she is not going to give up the afternoon reading, for she thinks the history is a work of importance not to be slighted, and that Sylvia will doubtless take up her own reading and practising after a

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It is manufactured from re-cleaned and carefully-selected materials, and is guaranteed to contain no mill-sweepings, oat hulls or other low-grade ingredients. More than that, its palatability is assured, because it contains the correct proportion of our Pure Cane Molasses Meal, together with a large variety of high-class feed stuffs.

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Here's the Guaranteed Analysis:

Protein - - - 20%
Fibre - - - 10%
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N.B.—You will oblige by promptly notifying us if your dealer hasn't Caldwell's Dairy Meal on hand. Write for booklet.

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Stops friction and wear. Non-corroding. Not affected by weather.

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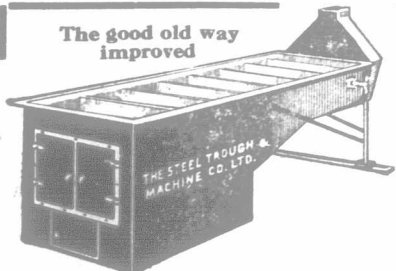
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WRITE FOR CATALOGUE TODAY.

The Steel Trough & Machine Co., Ltd., 115 James St., Tweed, Ont.

time; that while she herself has willingly consented to chaperon her, she does not intend to give up her own freedom, nor would it be good for Sylvia if she did.

Yesterday morning Miss Lavinia received a letter from Sylvester Latnam, thanking her for the offer of temporary protection for his daughter, and telling her, in curt business terms, meant to be affable, to name her own price for the office.

I have never before seen the ladylike Lavinia Dorman so completely and ungovernably angry. I could do nothing with her, and last evening it took the united efforts of Martin, father and Evan to convince her that it was not a real affront. Poor Mr. Latnam, he has not yet gotten beyond money valuation of friendship; but then it is probably because he has had no chance. Perhaps—but no, life is too serious just now in that quarter for me to allow myself remotely pleasant perhaps.

Miss Lavinia was too agitated to play piquet to-night, so she and Martin sat in the porch where the light from the hall lamp was sufficient to enable them to play a couple of games of backgammon, she said, to steady her nerves, and presently, as the dice ceased rattling, Evan gave me a nudge of intelligence, and looking over I found that they had reversed the board and were playing "Give away" with checkers.

"After this, what?" I whispered to Evan.

"Jackstraws," he answered, shaking with silent laughter.

Horace Bradford turned his mind for the next few days to the many things about the place that needed his attention, resolving that he would let a week or so elapse before making any further attempt to see Sylvia, and in that time hoped to find Miss Lavinia at home, and from her possibly receive some light upon the gossip about Mr. Bell, as well as news of Sylvia herself.

The sinking fund for repairs and rebuilding the house that he and his mother had been accumulating ever since he had made his own way, he found to be in a healthy condition. A new hay barn and poultry-house was to be put up at once; and, as soon as practicable, his wish of many years, to restore the brick house, that had been marred by "lean-tos" in the wrong places, to its colonial simplicity, could be at least begun.

Every day until two or three o'clock in the afternoon he gave to these affairs, and then he went to his books. But here again he met with a strange surprise, a new sensation,—he could neither fix his mind upon writing, nor take in what he read; the letters were meaningless as fly specks on the pages. After a day or two he gave up the attempt. He had worked too closely during the last term, he thought; his sight did not register on his brain,—he had heard of such cases; he would rest a week or so.

Then every afternoon he walked over the Ridge to the little river in the valley, carrying a book in his pocket, and his fishing-rod as a sort of excuse, and poling an old flatboat down-stream to a shady spot under the trees, propped his rod in place, where by a miracle he occasionally caught a perch or bass, sat looking idly into the water, the brim of an old felt hat turned down about his eyes. One day, near the week's end, as he was lounging thus, his eye was attracted by a headline in a bit of newspaper in which he had wrapped his bait box to save his pocket. It was a semi-local paper from town, one that his mother took, but which they seldom either of them read, and the date was three days back. He turned it over idly, pausing as he did so to pull up the line which was being jerked violently, but only by a mud eel. Why did he return again to the scrap of paper when he had freed his hook? His eyes caught strange words, and his hands began to tremble as he read. It was the condensed report of the Latnam divorce that was now going the rounds of the journals.

He pressed a moment, then folded the paper, put it in his pocket, poked the boat with a vigorous stroke to the landing-place, and scudded through the woods and across the cornfields homeward, his heart beating tumultuously until he

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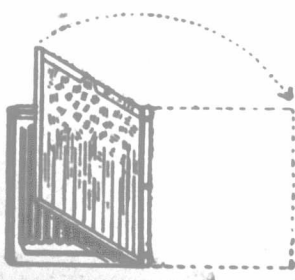
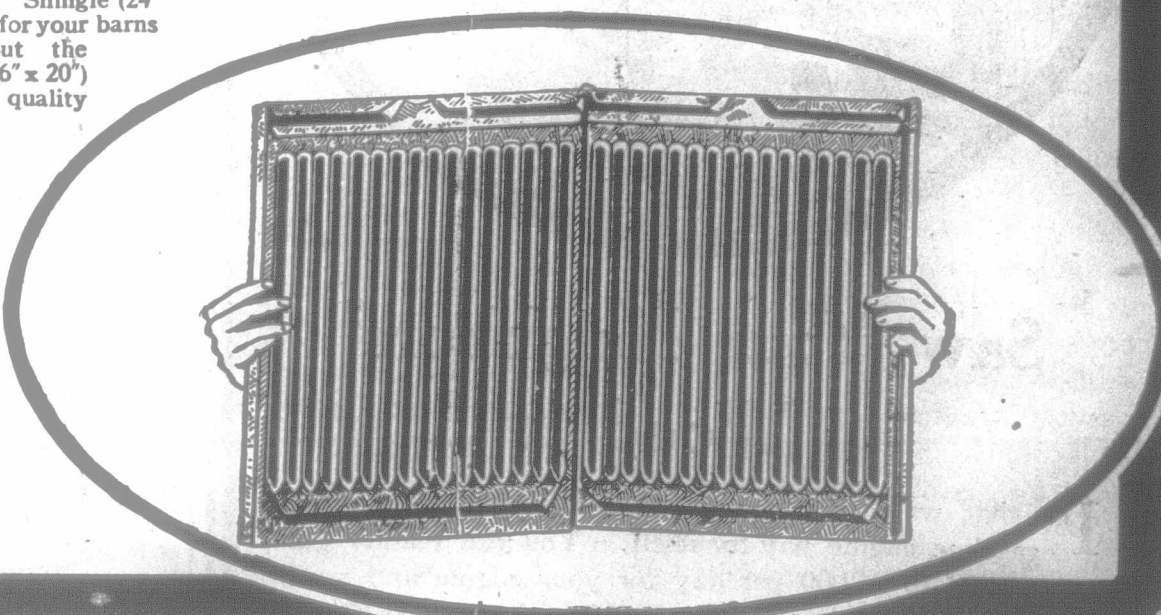
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Established 1861



seemed almost to be struggling with suffocation.

He stopped at the barn and harnessed a horse to the old buggy, passing by the new one that he had recently ordered from town, and then went into the house, where, taking off his slouchy fishing clothes, he put on the same ceremonious afternoon wear that he would have worn at Northbridge if going to call, put Sylvia's handkerchief in his inner pocket, and went in search of his mother.

He found her in the kitchen, tying the covers upon countless jars of currant jam. She looked surprised to see him back at such an hour, but said nothing, as Esther Nichols was close by, employed in wiping off the jars.

"I'm going over to Oaklands for a drive," he said, handing her the scrap of newspaper with a gesture that meant silence.

"Shall I wait supper for you, or will you be late?" she said, touching his hand with a gesture almost of entreaty.

"I may be late, but--yes, you may wait supper," he replied, looking back at her in going out, as if he wanted to carry the picture well forward in his mind, against any forgetfulness.

The miles between Pine Ridge and the Bluffs seemed endless. He had at first intended to go to Oaklands village to see Miss Lavinia and gather such tidings as he could of the calamity that had overtaken Sylvia; for he never for a moment questioned but that the girl, who had been entirely straightforward, even in days of college pranks, should so regard the matter. But as he drove along, and the very fact that he was moving toward a definite end calmed him and clarified his judgment, he resolved to go directly to Sylvia herself. He would certainly do this if he had seen the announcement of her parents' deaths; then why not now, when their love that gave her birth was officially and publicly declared extinct?

He drove through the wide gateway and left his horse standing by a stone pillar outside the porte-cochere--the beast would stand anywhere if there was a bar or post for him to look at--and walked up the steps with the air of one who is not to be gainsaid.

"Not at home," replied the singsong

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voice of Perkins, in answer to Bradford's demand for Miss Latham, Potts and Parker having already gone to open the Newport house for the winter, as a staff of servants was left with it, and then he added, as if conferring a favor, "and Mrs. Latham has gone on the coach to the station to meet some guests, the last 'ouse party before she sails."

"Before she sails," thought Bradford, numbly. Sylvia was going? Could he believe the man? Should he go through the formality of leaving a card that she might not get? No, he would go home and write a letter.

Sylvia kept the house until late in the afternoon, these days. Then she slipped out by the servants' stairway, and through the garden, to walk in the wood lane that ran northward, joining the two parallel highroads; for her healthy body needed air, and she knew that if she did not have it, she could not control herself to keep peaceful silence for even the few days that remained. So it chanced this afternoon that she was walking to and fro in the quiet lane where the ferns crept down quite to the grassy wheel tracks, when Perkins said those repellent words, "Not at home."

As Bradford turned out the gate and noticed that the sun was already setting, he thought to save time by cutting through the almost unused lane to the turnpike that led directly to Pine Ridge. He had driven but halfway across, when a flutter of light garments a little way ahead attracted him. Could it be? Yes, it was Sylvia, in truth, and at the moment that he recognized her and sprang to the ground she heard the approaching hoofs and turned. For a full minute neither spoke nor moved, then going quickly to her and stretching out both hands, he said, his heart breaking through his voice, "I have been to see you. I did not know until to-day."

She gave her hands, and in another moment his strong arms held her fast and unresisting--the purifying friendship of those unconscious years crystallized and perfected at love's first touch.

They said but very little as they walked up and down the lane together, for half an hour; but as the shadows lengthened, the thought came equally to

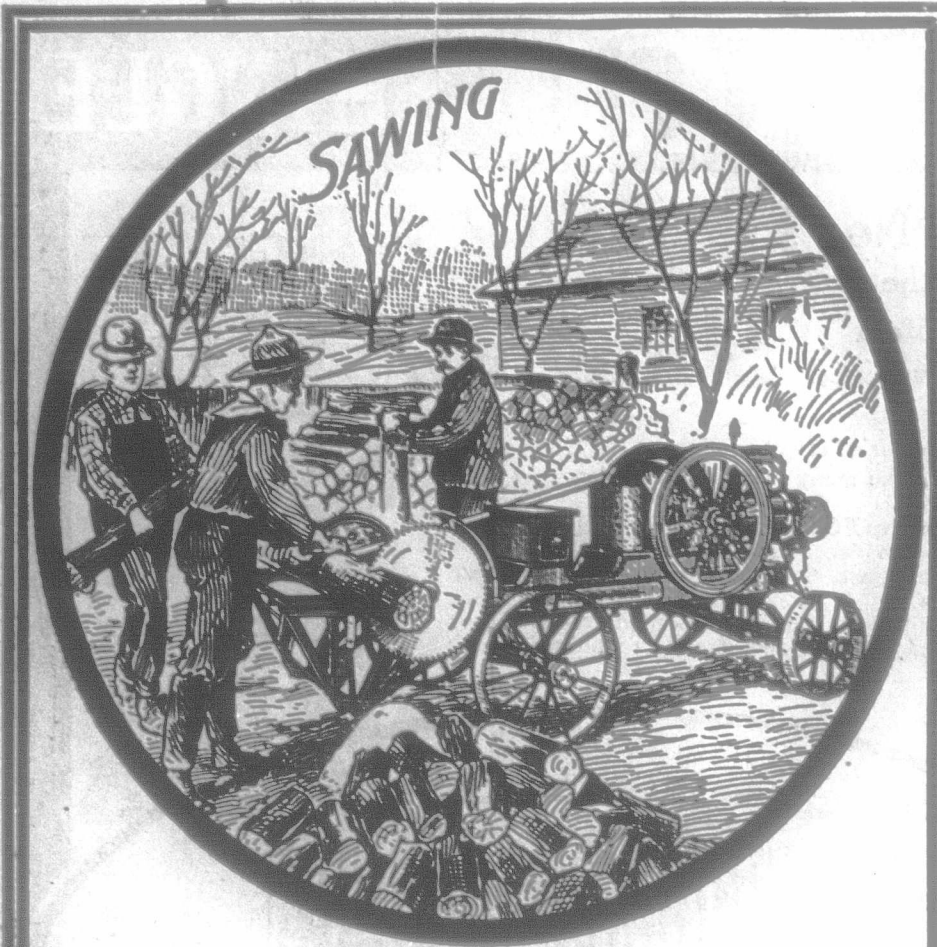
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both—"What should they do next? How could they part, and yet how stay together?" Horace, with man's barbarian directness, would have liked to bear her home to safety and his mother; but the shadow of usage and her mother stood between, for in spite of the hollow mockery of it all, Sylvia was still of her household.

"I must take you home," he said at last, "and to-morrow I will come—all shall be arranged."

"To-night," she whispered, clasping his arm in nervous terror. "Come back with me and tell her to-night; then I shall feel sure, and not as if it was not real. And when you have told her,—before whoever may be there, remember,—go home; do not stop to listen to anything she may say."

They drove slowly back, and went up the steps to the house, from which voices and laughter came, hand in hand, like two children; but they were children no longer when they crossed the threshold and saw Monty Bell in the group that loitered with Mrs. Latham in the reception hall, waiting for dinner to be announced.

Sylvia's thin gown was wet with dew, her hair was tossed about, her eyes oiled with excitement, and a red spot burned in each cheek in startling contrast to her pallor—all of which gave her a wild and unusual beauty that absolutely startled as well as shocked her mother, letting her think for a second that Sylvia was going to make a scene, had gone mad, perhaps, and run away, and that the tall man holding her by the hand had found her and brought her home.

Taking a few hasty steps forward, and dreading anything disagreeably tragic, she said: "Mr. Bradford, I believe. What is it? What has happened?"

"Only this, that Miss Sylvia has promised to be my wife, and that, as her mother, we have come to tell you of it before I go home to tell my own." Horace Bradford drew himself up to every inch of his full height as he spoke, bowed to Mrs. Latham, then led Sylvia to the foot of the stairs, saying, "Until to-morrow," and walked quietly out of the house.

No one spoke. Then Mrs. Latham, choking with rage, feeling herself helplessly at bay (Sylvia was of age, and she could not even assume authority under the circumstances), collapsed on a divan in modified hysterics, and Monty Bell, completely thunderstruck, finally broke the silence by his characteristic exclamation, "I'll be damned!"

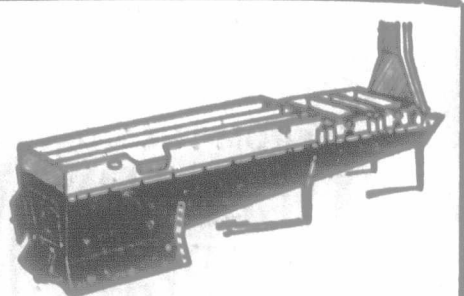
After their belated supper, when Esther Nichols had gone over to a neighbor's, Horace, sitting by his mother's side, out in the honeysuckle porch, where the sphinx moths whirred like humming-birds of night, holding her hands in his, told her all. And she, stifling the mother pain that, like a birth pang, expected yet dreaded, must come at first when the other woman, no matter how welcome, steps between, folded his hands close, as if she held him again a baby in her arms, and said, smiling through vague tears, "To-morrow we will go together to her, my blessed son."

"I cannot ask you to do that; there are reasons—I will bring Sylvia to you later, when her mother has gone," he answered hastily, resolving that he would do anything to shield her self-respect from the possible shock of meeting that other mother.

"Horace, you forget yourself, and your father too," she said almost sternly. "I am country bred, but still I know the world's ways. Your father's wife will go first to greet her who will be yours; you need not fear for me," and he sat silent.

That next afternoon, when Horace's first and last love met, they looked into each other's hearts and saw the same image therein, while Mrs. Latham lay on the lounge in her room, raging within, that again her tongue had failed her in her own house, and realizing that woman of the world as she aimed to be, the "egg woman" had rendered her helpless by mere force of honest courtesy. Presently she rose, and putting and sending the howled head, sent a message to New York to transfer her passage, if possible, to an earlier steamer.

(To be continued.)



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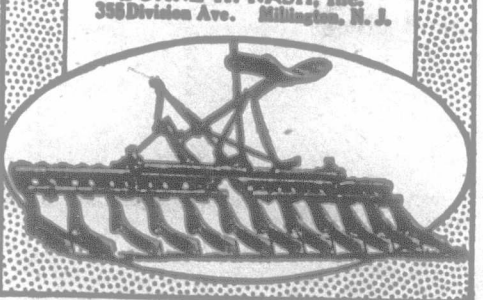
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Gossip.

"How would it do to give the Royal Commissions a holiday during 1914, and let the Governments get busy?" asks "The Farmer's Advocate." What! Would you pull the seven sleepers right out on the floor one of these cold mornings?—London, Ont., Advertiser.

A PROLIFIC EWE.

A pure-bred Dorset ewe, eleven and a half years old, the property of Major Poe, Callan, County Kilkenny, says the Irish Farming World, recently dropped her twenty-seventh lamb. In October, 1911, she had two lambs, and the following May two more, being four lambs in seven months. Near the end of December last year she had two more, thus making six lambs inside fifteen months.

SALE DATES CLAIMED.

January 20th.—E. F. Osler, Bronte, Ont.; Holsteins.
January 23rd.—Allison Bros., Chester-ville, Ont.; Clydesdales and Hackneys.
January 27th.—At Lindsay, Ont., annual sale of Shorthorns of the Victoria Pure-bred Stock Association.
February 4th.—T. H. Hassard, Markham, Ont.; imported Clydesdales and Percherons.
February 4th.—At Union Stock yards, Toronto. Annual sale of Shorthorns, Manager, Robert Miller, Stouffville, Ont.
February 11th.—A. E. Hulet, Norwich, Ont.; Holsteins; dispersion.
March 4th.—Annual Provincial sale of pure-bred cattle.
March 11th.—G. H. McKenzie, Thornhill, Ont.; Holsteins.
March 12th.—H. R. Patterson, Paris, Ont.; Holsteins.

Farm Life More Attractive.

A friend of "The Farmer's Advocate," G. H. Cowan, in Lennox Co., Ont., writes: "Many copies are always lying on my office table, and my farmer clients can read when they have to wait. I should have sent you many more subscribers than I have, and I hope I will. The paper is, in many respects, a most desirable one to come into any family, and Mrs. Cowan enjoys the family and social parts of the paper very much. I have a farm of two hundred acres near Napanee, and have a natural love for the soil, and for stock. I have a son attending the Agricultural College, Guelph. I look to the solution of the high cost of living, about which so much is being said and written of late, in an increased production as a result of better cultivation of the soil, and that means more men and more money on it. With the telephone in all parts of the country, and with the rural-mail delivery, farm life is going to be more attractive, and I look to a great change in the attitude of our young people towards it."

A Fine Number.

The Christmas Number of "The Farmer's Advocate" maintains the high standard set by that greatest of agricultural papers. Its brightly-illustrated pages contain a large number of special articles on agricultural subjects, written by men whose names bear the stamp of authority. To the layman, as well as the farmer, the edition is a liberal education. There are also general articles of a high quality. Specially worthy of mention is a paper on Irish Celebrities, by Mr. Chauncey G. Jarvis, a prominent barrister of London. Mr. Jarvis has a fine literary faculty, and has handled his subject most instructively and entertainingly. The Christmas Farmer's Advocate is a feast of good things for all classes of readers.—Port Arthur Chronicle.

TOLD THE TRUTH.

Short—Yes, I believe some fortune-tellers are on the level. Not long ago one agreed to tell me something about my future for a dollar. Long—Well? "I gave her the money, and she told me the time would come when I would wish I had my dollar back."

—BY AUCTION—

Clydesdale ^A_N^D Percheron

Stallions, Mares and Fillies, Imported,

At the Repository

Cor. Nelson and Simcoe Streets, Toronto, Ont.

Wednesday, Feb. 4th, 1914

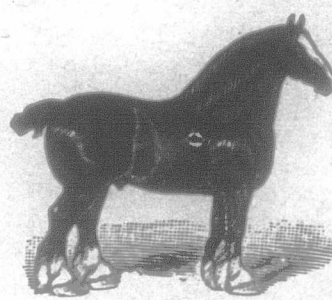
Commencing at 1.30 p.m. Sharp.

Dr. T. H. Hassard of Markham, Ont., will sell without any reserve, a consignment of the highest-class quality, Clydesdale and Percheron Stallions and Mares, ever sold by Auction in Canada. All of them are imported, practically all of them are prize winners, including Champions and Grand Champions at leading shows in Scotland and Canada, representing the best blood of the breeds, every one thoroughly acclimatized and in the pink of condition. A big lot to choose from and every one high-class, also some Standard Bred Stallions, Ponies and Harness Horses, together with his show Paraphernalia, Heavy and Light Harness, Halters, Belts, Rollers, etc., as Dr. Hassard is out of the show business for good. The whole making a sale of High-class Horses and Fittings never before duplicated in this country.

For terms, etc., write for a catalogue, which is now ready.

T. H. HASSARD, MARKHAM, ONT.

Cheap Rates on all Railways



Fertilizing Hoed Crops

Hoed crops are of primary importance to the general farmer and to stockmen, as they constitute a large portion of the winter feed for stock. Hoed crops draw heavily on the soil for their nourishment. To produce good, healthy crops, a farmer should ensure to his corn and roots an available supply of the essential foods, sufficient for the crops' requirements. POTASH is an essential Plant Food. No crop will be a good crop, unless the soil contains sufficient for its needs.

POTASH Increases QUANTITY, Improves QUALITY, Promotes MATURITY.

MURIATE OF POTASH and SULPHATE OF POTASH

can be obtained from the leading fertilizer dealers and seedsmen. "Fertilizing Hoed Crops" is the title of a new bulletin published by the German Potash Syndicate, and can be obtained FREE, on application, together with any of the publications mentioned below.

WE ARE PREPARED TO SEND OUR REPRESENTATIVES TO ADDRESS AGRICULTURAL AND HORTICULTURAL CLUBS AND FARMERS' INSTITUTES ON "The Fertilizing of Crops" and "The Rational Use of Fertilizers."

Secretaries of Clubs and Institutes are Invited to Correspond With Us to Arrange Suitable Dates for Addresses.

The publications referred to above are:—"Artificial Fertilizers; Their Nature and Use"; "The Potato Crop in Canada"; "Fertilizing Grain and Grasses"; "Fertilizing Orchard and Garden"; "Principal Potash-Crops of Canada"; "Farmers' Companion"; etc.

State Which You Require.

GERMAN POTASH SYNDICATE

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TORONTO, ONTARIO

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New Service
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WEST INDIES.

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by Twin-screw Mail Steamers from
ST. JOHN, N.B., & HALIFAX, N.S.
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Excellent accommodation for 1st, 2nd and
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CORREQUID	J. Brown, R.N.R.	18 Jan.	24 Jan.
CARAGUET	W. R. Smith, R.N.R.	1 Feb.	15 Feb.
CHALEUR	T. A. Hill, R.N.R.	15 Feb.	17 Feb.

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FRASER & BLACK, Ltd.

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AND HOW TO CURE
—A Standard treatment with years
of success back of it to guarantee
results in

**Fleming's Tonic
Heave Remedy**

Use it on any case—No matter what
the case has been tried—and if three
times fail to relieve, we will refund
full amount paid. Further details in
Fleming's Vest Pocket
Veterinary Advisor
Write us for a Free Copy?
Best Ever Used.

Dear Sirs—Enclosed find \$1.00 for 1 package of
Tonic Heave Remedy. I used a package last year and
completely cured a case of Heaves of some 2 years
standing.
E. B. BURNHAM, Lillooet, B.C.
Per Box \$2.50 for \$1.50

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Bigger
Crop
of
Better
VEGETABLES**

Farmers using DAVIES
Special Mixed FER-
TILIZERS are making
more money from their
farms. If you want to
make more money, send
for free booklet.
The DAVIES Co.,
Wm. Davies Ltd.,
WEST TORONTO, ONT.
We've an Agent near
you

5 Yearling Clydesdale Stallions
10 Young Holstein Bulls
1 Stallion (imp.)
In dam, others by Baron's Pride, bulls got by King
Fayne Segis Clothilde, a grandson of King Segis
and Grace Fayne 2nd's Homestead, 35-lbs. butter
in 7 days (world's record), and 2 other sire's dams
in R.O.P. milking up to 8-lbs. per day, and
1000-lbs. in a year. Write, or better come and
see them (a few Ponies).
Manchester P.O. on G.T.R.
Myrtle C.P.R. Bell 'Phone.
R. M. HOLTBY

Shires and Shorthorns
In Shire stallions and fillies, from the best studs in
England, we are offering some rare animals at rare
prices. Scotch Shorthorns of either sex or age, of
highest breeding and quality. John Gardhouse
& Son, Highfield, Ont. L.-D. 'Phone.

Questions and Answers.

1st.—Questions asked by bona-fide subscribers
to "The Farmer's Advocate" are answered in
this department free.
2nd.—Questions should be clearly stated and
plainly written, on one side of the paper only, and
must be accompanied by the full name and ad-
dress of the writer.
3rd.—In Veterinary questions, the symptoms
especially must be fully and clearly stated, other-
wise satisfactory replies cannot be given.
4th.—When a reply by mail is required to
urgent veterinary or legal enquiries, \$1.00 must be
enclosed.

Miscellaneous.

Ringworm.

What causes a scab to come on cattle?
It is in our calves now. It just forms
a scab and the hair drops off. It forms
in spots, especially around the eyes. It
is going through the stock. It is in the
yearlings and two-year-olds. How would
you cure such a disease, or is there a
cure? J. S.

Ans.—This is likely ringworm, a con-
tagious trouble. Moisten the scurf with
sweet oil. Remove this, and dress daily
with tincture of iodine until cured.

Share Farming.

I am thinking of taking a farm on
shares. I will provide the horses, and
the owner provide everything else. What
share should I get? N. C.

Ans.—Different localities have different
arrangements for share farming. There
is so much between the owner and the
renter that it is difficult for us, not
knowing all these circumstances in detail,
to suggest an equitable basis for an
agreement. In working farms on shares,
the portion of the expenses commonly
borne by the tenant runs from one-third
to forty per cent., 35 per cent. being a
very fair average. The tenant does all
the work, including the hiring of help,
bears his 35 per cent. of expenses, and
receives 35 per cent. of the proceeds,
while the owner bears 65 per cent. of
expenses and gets 65 per cent. of the
proceeds. Seeing that you are furnish-
ing the horses, your share might be a
little higher.

Cattle Cleaned Out.

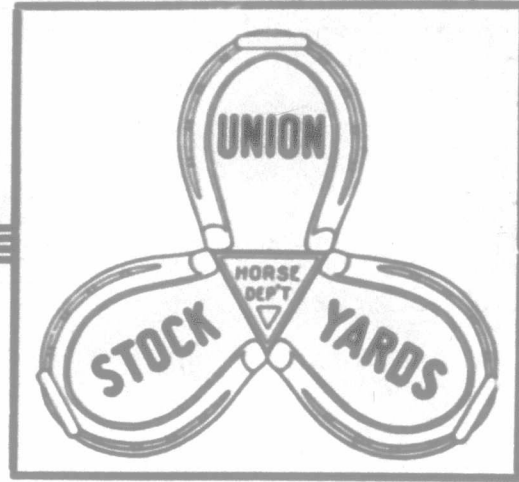
Editor "The Farmer's Advocate":
We had a peculiar season in Wellington
County, Ont. Crops improved greatly
after the setback they got in May.
Where land was in good heart, crops
were very good; straw a little shorter
than usual, but grain yielded well, and
good quality. Hay was below the aver-
age, but good quality. Root crops were
fair to good. Corn and buckwheat was
damaged a little by frost in September.
Potatoes yielded below the average of
other years, but quality was very good.
We had a very dry season. Water has
been very scarce; numerous wells are still
dry, and cisterns empty. We have a
little snow. A great many farmers are
selling turnips at 18c. and 20c. per
bushel, which has been the price for some
time at Fergus. It is unfortunate so
many of our cattle have been shipped
out of the country. There was a fine
lot of cattle shipped from Fergus on the
4th of December, some 30 carloads, and
many prize animals amongst them. Most
farmers have plenty of feed could they
refill the stalls, but it cannot be done
with any satisfaction. Beef cattle will
rule high for years to come.
JAS. GREEN.

Wellington Co., Ont.

Gossip.

FOR THE OSLER SALE.
For the Holstein sale of E. F. Osler,
Bronte, Ont., arrangements have been
made with the G. T. R. to have the
train leaving Toronto at 9 a. m. stop
at Bronte on the morning of the sale.

We direct attention to the advertise-
ment in this issue of the Allison Stock
Farm dispersion sale, to be held at
Chesterville, Ont., Friday, January 23rd.
Thirty head of horses, Clydesdales and
Hackneys, will be sold, including the
champion, On Guard, the great White
Kirk Hero, Bright Guard, and many
other stallions among the best of the
breed. The females are an exceptionally
strong lot—mares with foals at foot,
prizewinning fillies, and matched teams.
See the advertisement, and write W. P.
Allison for a catalogue.



Seventh Annual Combination
Sale of Pedigreed
CLYDESDALES
AND
PERCHERONS

MONDAY AND TUESDAY
February 9th and 10th, 1914

Will be held at
Union Stock Yards (Horse Dept.) Toronto, Ont.

This sale is conceded to be the greatest annual event in
Clydesdale and Percheron circles held in Eastern Canada.

Both imported and Canadian-bred breeding stock will
be offered at this sale, and if looking for same it will be to
your advantage to attend this sale.

If you have anything to sell, write for terms and
particulars.

Entry books close January 31st.

Catalogues will be out about the first week in February.

\$15⁹⁵ AND UPWARD
SENT ON TRIAL
**AMERICAN
CREAM
SEPARATOR**

Thousands In Use giving splendid sat-
isfaction justifies
your investigating our wonderful offer to
furnish a brand new, well made, easy run-
ning, 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., Box 1200 Bainbridge, N. Y.

**CLYDESDALES, IMPORTED STALLIONS
AND FILLIES**
In the modern Clydesdale there must be big size, draft character, quality at the
ground, and straight clean action. Come and see what I have with the above requi-
sites in both Stallions and Fillies, also one French Coach Stallion.
JAMES TORRANCE, MARKHAM, ONT., G.T.R.; LOCUST HILL, C.P.R.

Clydesdales, Imported and Canadian-bred—With over 25 head
Canadian-bred, brood mares, fillies, stallions and colts.
Let me know your wants L.-D. 'Phone. R. B. PINKERTON, Essex, Ont.

Imp. CLYDESDALES and PERCHERONS Imp.
The season is advancing, select your horse now. I can show you Clydesdale Stallions
with size, quality, and breeding, second to none in Canada, for about half the usual
price, and the same in Percherons.
T. J. Berry, Hensall, Ont., G.T.R., 'Phone.

Mount Victoria Clydes & Hackneys
When in want
of a high-class
Clydesdale stall-
ion or filly, or something that has won and can win again in Hackney stallion or fillies,
visit our barns at Hudson Heights, Que.
T. B. MACAULAY, Proprietor
E. WATSON, Manager, Hudson Heights, Que.

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OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For... It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Blisters, Cancer, Boils, Corns and Human Bunions. CAUSTIC BALSAM has no equal as a Liniment.

Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used in any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES. One bottle Caustic Balsam did my rheumatism more good than \$150.00 paid in doctor's bills. OTTO A. BEYER. Price \$1.50 per bottle. Sold by druggists, or sent by express prepaid. Write for booklet to THE LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

BITTER LICK MEDICATED Salt Brick

Great Conditioner & Worm Destroyer

Bitter Lick is a compressed salt brick, medicated with roots, herbs, etc. in such proportion as will keep horses in excellent condition and free from worms. Bitter Lick keeps the appetite keen; all horses like it; tones the digestion and prevents colic. It has no cheap filler and takes the place of worm and condition powders, etc., keeps horses healthy for only a week. Ask your dealer or write for booklet. STEELE, BRIDGES SEED CO., Ltd., WINNIPEG, MAN. Wm. Cooper & Nephews, Toronto, Ont.

FOR SICK HORSES

Very Special Offer

On receipt of 15c. in stamps, we will mail to you, one LARGE SIZE box of "N.S.F. Condition Powders", give it a trial, small cost and big income.

Consultation per letter, Free of Charge, with our veterinary doctor, for any disease.

National Stock Food Co., OTTAWA, ONT.

Don't Cut Out A SHOE BOIL, CAPPED HOCK OR BURSTITIS

FOR ABSORBINE

will remove them and leave no blemishes. Reduces any puff or swelling. Does not blister or remove the hair, and horse can be worked. \$2 a bottle delivered. Book 6 K free.

ABSORBINE, JR., the antiseptic liniment for man-kind. For Boils, Bruises, Old Sores, Swellings, Varicose Veins, Vascularities, Always Pain. Price \$1 and \$2 a bottle at druggists or delivered. Will tell more if you write. W. F. YOUNG, P.D.F. 255 Lyman Bldg., Montreal, Can.

Horse & Cattle Insurance

Against Death by Accident or Disease. Specialties of Stallions, In-foal Mares, Track Horses, Transit, etc. Liberal policy issued by a Company operating under Federal Insurance Department's supervision.

WRITE FOR FREE BOOKLET. The General Animals Insurance Co. of Canada. Head Office: 71a St. James Street, Montreal, Que.

NOTICE TO HORSE IMPORTERS

GERALD POWELL,

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. P.S.—Nogent is in the heart of the Perche horse district.

Please mention "The Farmer's Advocate."

Questions and Answers. Miscellaneous.

Stallion Show.

Would you please let me know, through the columns of your paper, when the winter stallion show is held in Toronto?

J. W. M.

Ans.—There is no stallion show held in Toronto now. There is a National Livestock Show held in November, and a big horse show usually held about the end of April, but we haven't the exact dates at present.

Spavin.

Horse has spavin (I think it is a bone spavin) on hind leg. Would you please publish a lotion or salve suitable, as I will have to work him at times? Something that will cure, but won't prevent him from being worked lightly.

F. E. S.

Ans.—You cannot remove a bone spavin. If there is no lameness, you had better leave it alone. If lameness should appear, get your veterinarian to fire and blister.

Rural Mail Boxes.

- 1. May a man sell his rural-mail box when removing from a place?
2. May the person purchasing same erect it on a rural route and use it?
3. A person places outgoing mail in a box (which does not belong to him) for the mailcarrier to take next day. Has the owner of that box a right to take any letters so found and do as he pleases with them?
4. If he did remove them and so delayed them, could proceedings be taken against him?

H. K.

- Ans.—1. Yes.
2. Yes.
3. No.
4. Yes.

Farm Wages.

Will you kindly give me some information, through your Questions and Answers column, on the following points:

- 1. Am I correctly informed that many farmers now provide a cottage for the hired man with a family? In that case, what would be his salary if he were (a) experienced; (b) inexperienced? Would such a post, i. e., that of hired man, for whom, with his family, a cottage is provided, be fairly easy to obtain, preferably in Ontario?

S. B.

Ans.—Several of the larger farmers in this country are now adopting the plan of providing a cottage for a married hired man. Wages vary. Some experienced men and good men get \$400 yearly, house free, a potato patch, milk, and some are supplied with rough wood for fuel. Others do not get quite so high a wage, and inexperienced men would get much less.

Dogs Sick.

I had two little dogs which were taken sick at the same time, vomiting very much, refusing food, and breathing very hard. I could hear them at a distance. Something was running from their mouths, their eyes changed, and looked very strange, as though they were blind. One died. I opened the other one's mouth often, and fed him with milk. He is better, but has a strange look about the eyes. He appears not to see straight, runs up against things, and is still weak. We found they had been eating bad meat from a dead beast. Would that cause it, or can you tell me what was wrong with them? Some think they were poisoned. Do you think the one we have will get better after a while? Shall feel grateful if you can tell me.

A LOVER OF ANIMALS.

Ans.—The symptoms seem to indicate poisoning. The survivor may recover. Purge him if still alive.

Trade Topic.

Attention is called to the advertisement in this issue of lime carbonate, by the International Agricultural Corporation, Marine Bank Building, Buffalo, N. Y. Lime carbonate is a splendid stable absorbent, is very beneficial to many soils, especially sour soils, and has a value in rendering plant food available in the soil. Look up the advertisement in this issue.

Great Dispersion Sale of Imported Clydesdales AND Hackneys

At Allison Stock Farm, CHESTERVILLE, ONT., Friday, January 23, 1914

30 HEAD ALL IMPORTED OR FROM IMPORTED STOCK

The thirty head comprises 25 head of Clydesdales and 5 Hackneys, each prominent winners in their individual classes.

Our importations from time to time were all made privately by us for our own private stud.

We greatly regret that the extension of our pure bred Holstein herd has forced us to dispose of all our Clydesdales and Hackneys, but as a complete dairy equipment has already been installed at the farm, we have decided it shall be the horses that must go.

NOTE—We have set the date of the sale for January 23, which is the Friday of the Eastern Ontario Poultry and Dairy Show, Ottawa, and we think as think as the judging at the fair will all be over by Friday, interested parties can take advantage of making the one trip take in both events. Chesterville is only 26 miles south of Ottawa, with good train service, to the farm. Two trains leave Ottawa for Chesterville in the morning, make it a point to be on one of these. For the advantage of those coming from east or west—Chesterville is on the main line of the C.P.R. from Toronto to Montreal. If you are not directly interested in Clydesdales or Hackneys you should make this visit at any rate and see one of the Canada's leading pure bred Holstein herds in one of the best equipped dairy stables in Ontario.

ALLISON BROS., CHESTERVILLE, ONTARIO

Percheron Stallions

The premier show herd of Canada. All ages, blacks and greys, weights from 1800 to 2150 lbs. Write for the greatest illustrated horse catalogue in Canada

HODGKINSON & TISDALE, BEAVERTON, ONT. G.T.R and C.N.R. Railroads, Bell 'phone, No. 18.

Imported Percherons, Clydes and Shires

My 1913 importation from France and Scotland are now in my stables. If you want the best in Percherons, Clydesdales and Shire stallions and fillies, come and see my offering; 30 head to select from. Also Hackneys and French Coach stallions. I have all ages of best breeding and highest quality, and the prices are low.

J. E. ARNOLD, Grenville, Quebec

CLYDESDALES --- Stallions and Fillies

WE have again landed at our stables a large and choice collection of Clyde Stallions and Fillies of strictly high-class show calibre. We never had a lot that measured up to the standard of this lot, big, flashy quality; close, straight action and bred in the purple. We can supply winners in any company. Write us.

SMITH & RICHARDSON - Columbus P. O. Brooklyn, G.T.R.; Myrtle, G.P.R. Long Distance 'phone

Save Your Foals --- Use Foaline

An internal treatment for pregnant mares, ensuring immunity to the foal from Omphalitis, Inflammation of the Umbilical Cord (better known as Navel Disease), Tubercular or Scrofulous Arthritis, and Ostitis (known as Joint-ill). Not a cure, but a positive preventive. Write for circular. This treatment was introduced from Europe, by H. O. Wright, a prominent importer of Clydesdales.

Address: WALLEN DRUG CO., Manufacturers and Selling Agents Wholesale and Retail Druggists, 581 Portage Ave., Winnipeg, Canada.

Most ACCIDENTS are Due to Carelessness



STATISTICS prove that the majority of accidents could have been prevented by a little forethought.

There is no longer any excuse for a horse floundering or falling on icy streets, sustaining sprains and bruises, perhaps becoming permanently or even fatally injured.

Red Tip Calks

present a safe, easy way of sharpening that assures absolute safety to horse and driver. They are easily and quickly adjusted and once in will stay in, wearing sharper with use.

Do not confuse RED TIP calks with imitations. Look for and insist upon the RED TIP and you will get the best. Booklet K tells why. Send for it.

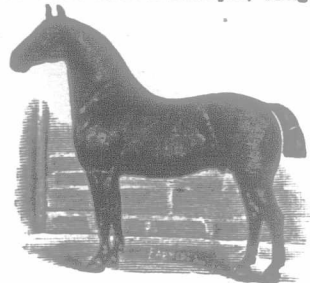
The Neverslip
Manufacturing Company
U. S. Factory, New Brunswick, N.J.
Canadian Office and Factory
559 Pius IX Ave. Montreal

DR. PAGE'S ENGLISH SPAVIN CURE

For the cure of Spavins, Ringbone, Curbs, Splints, Windgalls, Capped Hocks, Strains or Bruises, Thick Neck from Distemper, Ringworm on cattle, and to remove all unnatural enlargements.

This preparation, unlike others, acts by absorbing rather than blistering. This is the only preparation in the world guaranteed to kill a Ringbone or any Spavin, or money refunded, and will not kill the hair. Manufactured by Dr. Frederick A. Page & Son, 7 and 9 Yorkshire Road, London, E.C. Mailed to any address upon receipt of price \$1.00.—Canadian agents:

J. A. JOHNSTON & CO., Druggists
171 King Street E., Toronto, Ont.



Notice to Importers

C. CHABOUDEZ & SON
265 rue La Fayette, PARIS, FRANCE.
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. 30 years experience. Best reference. Correspondence solicited.

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, Colic, Coughs, Colds, Distemper, Fevers, etc. Agents wanted.
DR. BELL, V.S., Kingston, Ont.

Questions and Answers. Miscellaneous.

Itchy Skin.

I have a horse that rubs the hair off the root of his tail, and bites his sides. I noticed him early last fall. I turned him out to grass for two months thinking it would cure him, but failed. What is the trouble; can it be cured, and what is your cure?
S. S. S.

Ans.—Make a solution of corrosive sublimate 30 grains to a quart of water, and rub well into the skin. It is difficult to get this well into the skin when the hair is long. If not cured when the warm weather arrives, clip and give further applications.

Cow Fails in Flesh.

Cow freshened last month has been losing flesh rapidly ever since. She is now very thin, and appears to be getting worse. She is being fed a ration of one-half bushel of cut feed, with one-half bushel of turnips and four quarts of chop twice daily, with clover hay at noon. She does not eat her feed up. She is in good flow of milk, but appears dull.

B. F. G.

Ans.—Many cows milk down in flesh very markedly, but apparently your cow has something constitutionally the matter. Have her tested for tuberculosis, and if she does not react, get your veterinarian to examine her.

Registering Pig—Jack.

1. How many crosses are necessary in Yorkshire swine in order to register, and how much does it cost? Also in registering, to whom do I write?

2. Horse with jack coming on, a little lame at times; would firing or blistering be best?
J. C.

Ans.—1. No amount of crossing, will make a Yorkshire grade or cross pig eligible for registration. Write "The Accountant," National Live-stock Records, Ottawa.

2. Try a blister composed of two drams each of biniodide of mercury and cantharides, mixed with two ounces of vaseline. Clip the hair off the parts. Tie so he cannot bite them, and rub the blister well in once daily for two days. On the third day wash off and apply sweet oil. Oil daily until scale comes off, and blister again if necessary. If this is not successful, get your veterinarian to fire.

Geese, Etc.

1. How many geese can be successfully kept with one gander, to insure a good hatch?

2. How old should a gander be for best results?

3. Can two ganders be successfully kept together with the geese, or should they be separate?

4. State the average temperature in Middlesex county; also heat in summer; depth of snow in winter, and what kind of soil is it in Middlesex county generally.
R. P.

Ans.—1. We do not know the limit, but usually good success follows the keeping of two, three or four geese, with one gander.

2. Male birds are generally at their best between the ages of two and ten years.

3. We have heard that it is not good practice to keep two ganders with the geese, and that it is better to separate the flocks if too many geese are kept for one male.

4. Winter temperatures in Middlesex county vary as they do in other counties. As a rule, the weather is not bitterly cold, and very often the temperature rises to around the freezing point, and in sudden dips may go 20 below zero. The mean for the month of January runs about 25 degrees F., and for July about 72 degrees F. The snowfall varies, but as a general thing is fairly heavy. The soil for the most part is a clay loam, although it runs from a light, sandy loam, to a heavy clay.

The Great Canadian Annual Sale of Shorthorns

Will be held at The Union Stock Yards,
TORONTO, on

Wednesday, February 14th, 1914

When Robert Miller, Stouffville, Ont.; J. A. Watt, Elora, Ont.; John Miller, Jr., Ashburn, Ont., and Capt. T. E. Robson, London, Ont., will sell by auction a selection of Scotch Shorthorns equal to, if not better than any collection offered in a previous sale. There will be 20 bulls, mostly fit for service now, and 40 females, many of them in calf to the best bulls in the land. The males contain the Grand Champion bull at Toronto last September (he looks like winning for years), the first-prize junior yearling at the same show, one of the best calves of the year, by Ringmaster, and others that go to make the best lot of bulls ever offered by auction in Canada. The females comprise heifers that have won in our best shows, heifers in form to show in 1914, of the different ages, many of them of winning calibre. They have strength, beauty and grace, and they have the blood that counts. In both males and females, there are, Missies, Lavenders, Augustas, Butterflies, Brawith Buds, Miss Ramsdens, Minas, Village Blossoms, Nonpareils, Glosters and all that could be asked in Scotch breeding. The men making this sale ask you to come and judge their standing as breeders by the cattle they offer, and they promise that everything possible will be done to make those attending the sale comfortable. The Shorthorn meeting is the day before the sale. Sale commences at 12 noon sharp. Lunch will be provided from 10.30 a.m.

COL. CAREY M. JONES
FRED. REPPERT
CAPT. ROBSON } Auctioneers

ROBERT MILLER, Stouffville, Ont.
MANAGER OF SALE

STALLION & FILLIES

CLYDESDALES

PRIZE-WINNERS & CHAMPIONS

For this season's trade we have Clyde Stallions and Fillies that were up to championship honors in Scotland, and the same honors in Canada. Breeding characters, quality and action unsurpassed. Visit our barns if you want the best.

ROBERT NESS & SON.

HOWICK, ONT.



Imp. Clydesdale Mares and Fillies

Seven 4-year-olds and two 3-year-olds with an average weight of 1750 lbs. all of them safe in feet, well matched pairs, have been in Canada over a year and in fine condition. Choicely bred, a high class quality lot.

L. J. C. BULL, BRAMPTON, ONT.

TOPPERS IN CLYDESDALES AND PERCHERONS

I have just landed a big importation of Clydesdales and Percherons, if you want a big ton stallion with the best of quality, come and see me, I can show you the best lot of stallions you ever saw.

T. D. ELLIOTT

BOLTON, ONTARIO



BREEDING & QUALITY CLYDESDALES—STALLIONS AND FILLIES

My fall importation of Clydesdale Stallions and Fillies are now in my stables; there never was a better bred lot imported, and their standard of character and quality is the highest, and my price the lowest.

G. A. BRODIE, NEWMARKET, ONT. L.-D. Bell Phone.

Imp. Stallions CLYDESDALES Fillies Imp.

To the Clydesdale men of Canada we wish to say our 1913 importation is home, and we have some of the best show material in this country. More size, more style; more quality, more character and better breeding than ever before. In both stallions and fillies Electric Cars every hour.

JOHN A. BOAG & SON, Queensville, Ont.

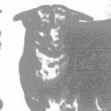
Clydesdales & Shires

If you want Stallions, Fillies or Foals of the above breeds, personally selected from A. and W. Montgomery's Clydesdale Stud and the Bramhope Shire Stud, Cheshire, and home-bred of the most fashionable strain. See and select from the large stock now offered. Prices and terms will please. D. McEachran, Ormsby Grange, Ormatown.

Canada's Champion Herefords When selecting a herd header or foundation stock come to the fountain head; for years my herd have proven their title as the champion herd of Canada. I have always both sexes for sale.

L. O. CLIFFORD,

Oshawa, Ontario



When writing Advertisers please mention this paper.

Dr. Maria Montessori



KEEP THEM WORKING

A horse in the field is worth two in the barn. You can't prevent Spavin, Ringbone, Splint, or Curb from putting your horse in the barn but you can prevent these troubles from keeping horses in the barn very long. You can get

KENDALL'S SPAVIN CURE

at any druggists at \$1 a bottle, 6 for \$5, and Kendall's will cure. Thousands of farmers and horsemen will say so. Our book "Treatise on the horse" free. 64

Dr. R. J. KENDALL CO., Oneburg Falls, Wt.



Fistula and Poll Evil

Any person, however inexperienced, can readily cure either disease with Fleming's

Fleming's Fistula and Poll Evil Cure—even bad old cases that skilled doctors have abandoned. Easy and simple; no cutting; just a little attention every fifth day—and your money refunded if it ever fails. Cures most cases within thirty days, leaving the horse sound and smooth. All particulars given in Fleming's Vest-Pocket Veterinary Advisor. Write us for a free copy. Fifty-six pages, covering more than a hundred veterinary subjects. Durable bound, indexed and illustrated. FLEMING BROS., Chemists, 75 Church Street, Toronto, Ont.

Aberdeen-Angus of Show Form and Quality. For this season my offering in young bulls and heifers, are toppers every one. Show-ring form and quality and bred from show-winners. T. B. BROADFOOT, Fergus, Ont. G. T. R. and C. P. R.

Glengow Shorthorns Five of the best bull calves ever in the herd, ranging from 9 months to 15 months. A "Kilblean Beauty" calf, a show proposition. A number of choice heifers, all ages. Write for prices. WM. SMITH, Columbus, Ontario

Shorthorns

Fourteen good young bulls, from 6 to 12 months old, and a number of females. Would appreciate your enquiry for same. H. CARGILL & SON, Cargill, Ontario

Spring Valley Shorthorns

A few of the best young bull prospects we ever had. They will please you. Will sell females too. Visit the herd; we think we can suit you. Particulars on application. KYLE BROS., R. R. No. 1, Drumbo, Ontario

WOODHOLME SHORTHORNS

I have for sale a most attractive offering in young bulls and young females, pure Scotch, breeding unsurpassed, the low thick kind. Write me your wants. G. M. FORSYTH, North Claremont, Ont.

1854 MAPLE LODGE STOCK FARM 1913 Shorthorns and Leicesters

I have a most excellent lot of young rams for sale, mostly sired by imported Connaught Royal. Something very choice in young bulls. House one mile from Lucan Crossing G. T. Ry. A. W. SMITH, MAPLE LODGE, ONTARIO

Shorthorns For Sale

3 yearling bulls of the right kind, 2 high-class herd headers, 12 months, one from imp. cow 4 bull calves, also young cows and heifers, some good milking strains. Stewart M. Graham, Lindsay, Ont

EVERGREEN AVENUE STOCK FARM

SHORTHORNS. One Imp. Roan Lady bull for sale or exchange. Scottish Prince = 60869 = (93372) got by Sittyton Choice (84822) he by Collynie Champion (78608) Calved 10th of April, 1905, quiet and reliable. Also 1 good bull calf 12 months old. Also 1 3-year-old registered Clydesdale stallion. GEO. R. A. MILLER, Sunderland, R. R. No. Ontario Co., Ont.

Gossip.

Wm. A. Rife, whose advertisement runs in these columns, writes that through his advertisement he has made splendid sales of Holsteins. Griesbach Bros., of Collingwood, took ten head of females and the richly-bred bull calf, son of Sir Korndyke Boon, a son of the noted Pontiac Korndyke, with 11 daughters with records from 30 to 38 lbs. butter in seven days, and grandsire of the world's-record cow, Pontiac Lass, 44.18 lbs. butter in seven days. This calf's dam, Norine Wayne Mercedes, is a sister to the sire of Queen Butter Baroness, the Canadian-bred champion cow, with record of 33.18 lbs. in seven days. The grandams of this calf average over 27 lbs. butter in seven days, with an average per cent. of fat of 4.48. Edgar Dennis, Newmarket, took the well-bred yearling bull, Prince Ormsby Aaggie Belle Wayne, a grandson of Francy Bonerges Ormsby, 29.10 lbs. butter in seven days, dam Lady Wayne Norine, 22 lbs. butter in seven days. This cow is grandam of more high-record cows than any other cow in Canada, her two sons having 35 R. O. M. daughters, two over 30 lbs., and twelve from 20 to 33.18 lbs. butter in seven days. A three-year-old son of this cow is now offered for sale. He is a choice individual, and a valuable sire, as he leaves good stock. See the advertisement.

LAST CALL FOR E. F. OSLER'S HOLSTEIN SALE.

As representative of the high-class herd-heading breeding of the young bulls to be sold, mention of one or two will suffice. There will be eight sold, ranging in age from calves up to one year. One of them is out of Queen Echo De Kol, record seven days, 27.53; thirty days, 11.70 lbs. butter and 3,055 lbs. milk. In her R. O. P. test, which started on March 7th and continuing to November 1st, she gave 17,461 lbs. of milk. She is still in the test, and will make a big record. This one is sired by the old stock bull. Another is by the young stock bull, and out of a 19-pound junior three-year-old daughter of the old stock bull, and she out of a 21-pound record dam. Pretty nice breeding that for a herd-header. Another, also by the young bull, is out of a 17-pound junior three-year-old daughter of the old bull, and her dam had a record of 23 lbs., as did also her grandam. This is illustrative of the breeding of the entire lot. Backed up on both sides for generations back, the entire offering at this sale has never been duplicated, and the cows of the pure breeds, and the unprecedented outlook for the dairying industry, make it an absolutely safe industry to launch into, or increase one already in vogue. Parties going by electric line from Hamilton, will get off at Trafalgar Stop, and by G. T. R., from either Toronto or Hamilton, at Bronte Station, where conveyances will meet all visitors.

Alfalfa.

What makes the landscape look so fair; What blossoms bright perfume the air, What plant repays the farmer's toil, And will enrich the worn out soil? Alfalfa!

What is the crop that always pays, Which may be cut each forty days, Resisting drought, the frost, and heat; Whose roots reach down full twenty feet? Alfalfa!

What grows in loam, and clay, and sand; What lifts the mortgage off the land; What crop is cut three times a year, And of never a failure do you hear? Alfalfa!

What makes the swine so healthy feel, And never raise a hungry squeal; The wholesome food that never fails To put three curls into their tails? Alfalfa!

What makes all other stock look nice, And brings the highest market price; What fills the milk pails, feeds the calf, And makes the old cow almost laugh? Alfalfa!

—From Press News, University, Minn.

ANNUAL SALE OF HIGH-CLASS SHORTHORNS

In the Butler House Yards, Lindsay, Ontario

TUESDAY, JANUARY 27, 1914

At 1.30 p.m. Sharp.

The Victoria Pure Bred Stock Association will offer for sale by public auction, twenty head of Shorthorns, mostly males. These offerings include some of the richest breeding in Victoria County, a noted Shorthorn district. The offerings of this association in the past have been eagerly sought after, several bulls having been sold last year to the Ontario Government. Those who attend may be assured that the lot offered this year will be as good or better than in former years.

TERMS—Cash or ten months credit will be allowed on approved joint notes, all notes to bear interest at the rate of 5% per annum from date of sale. Catalogues will be mailed on application to the Secretary.

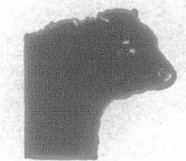
Wm. Marquis, Auctioneer. A. A. Knight, Secretary, Lindsay Ont.

Train connections leaving Lindsay; Going West, G.T.R. 6.23 p.m.; C.P.R. 4.30 p.m. Going East, G.T.R. 8.15 p.m.; C.P.R. 4.30 p.m., and 5.25 p.m.



130-Egg Incubator and Brooder For \$13.90

If ordered together we send both machines for only \$13.90 and we pay all freight and duty charges to any R. R. station in Canada. We have branch warehouses in Winnipeg, Man. and Toronto, Ont. Orders shipped from nearest warehouse to your R. R. station. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery under egg tray. Especially adapted to Canadian climate. Incubator and Brooder shipped complete with thermometers, lamps, egg testers—ready to use when you get them. Five year guarantee—30 days trial. Incubators finished in natural colors showing the high grade California Redwood lumber used—not painted to cover inferior material. If you will compare our machines with others, we feel sure of your order. Don't buy until you do this—you'll save money. It pays to investigate before you buy. Remember our price of \$13.90 is for both Incubator and Brooder and covers freight and duty charges. Send for FREE catalog today, or send in your order and save time. Write us today. WISCONSIN INCUBATOR CO., Box 32, Racine, Wis., U. S. A.



Shorthorns & Clydesdales

We have seven yearling bulls and seven bull calves from 7 to 12 months. All reds and roans, and of choice breeding. We have some extra good imported mares for sale, also some foals. If interested write for catalogue of their breeding.

W. G. PETTIT & SONS, FREEMAN, ONTARIO, Burlington Junction, G. T. R. Bell Phone

SHORTHORNS

"A PLENTY." I have a wide range for selection in Shorthorn bulls and heifers, in pure Scotch or Scotch topped, beef bred and beef type. Dairy bred and dairy type; make a point to visit my herd at Markdale, Ontario.

T. L. MERCER, MARKDALE, ONTARIO

100 SHORTHORNS IN OUR HERD 100

For sale—Imported yearling show bull; 14 calves 8 to 14 months old; cows and heifers and show material all ages. Herd headed by 3 high-class imported bulls, all 3 were prizewinners at Toronto this year.

Farm 1/4 mile from Burlington Junction. MITCHELL BROS., Burlington, Ont.

Shorthorns—I have ten young Shorthorn bulls, some fit for service now. Part of them are bred, and made so that they are fit to head the best herds in any country, some of them are of the thick, straight, good feeding kind, that will produce money-making cattle; some of them are bred from the best-milking Shorthorns, and the prices of all are moderate. I have Shropshire and Cotswold rams and ewes of all valuable ages. Write for what you want, I can suit you in quality and in price. Ask for Bull Catalogue. ROBERT MILLER, STOUFFVILLE, ONTARIO

Salem Shorthorns—As ever in the front rank. Special offering: Ten young bulls, quality and price to suit any buyer. J. A. WATT, Elora, 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 quality. HARRY SMITH, HAY P. O. ONT. Exeter Station. Long-distance Telephone.

SHORTHORN BULLS FOR SALE 8 head from 10 to 18 months, bred from cows which are from imported dams and sired by choicely bred bulls, prices are not high as I need the space for stabling cattle. Shropshire and Cotswold ewes bred to imported rams. BLAIRGOWRIE FARM JOHN MILLER, Jr., ASHBURN, ONT.

SHORTHORNS Our present offering consists of Nonpareil Lord = 87184 = Dam Imp. Dalmeny Nonpareil 6th. 7 young bulls from 6 to 12 months old. 15 cows and heifers of choicest quality and breeding. A. J. HOWDEN & CO., COLUMBUS, ONTARIO Long-distance phone.

MEADOW LAWN SHORTHORNS OF RICHEST AND MOST FASHIONABLE SCOTCH BREEDING, and of high-class type and condition. I can supply young bulls and heifers—Clarets, Roan Ladies, Mildreds, Stamfords, etc. L.-D. Phone F. W. EWING, R. R. No. 1, ELORA, ONTARIO.

SHORTHORNS of breeding, style and quality. If in want of an extra choice herd header, carrying the best blood of the breed, or a limited number of right nice yearling heifers, write us; we can supply show material of either bulls or females. Geo. Gier & Son, Waldemar R. R. No. 1, Ont. L.-D. Phone.

DAIRY-BRED SHORTHORNS We have for sale, Scotch and English-bred Shorthorns. A few bulls of improved breeding on big milking lines; also others pure Scotch, and heifers of both breed lines. L.-D. Phone G. E. MORDEN & SON, OAKVILLE, ONTARIO

Send your Raw FURS to John Hallam

Sixty Thousand trappers now send us their Raw Furs. Why not you? We pay highest prices and express charges, charge no commission and send money same day goods are received. Millions of dollars are paid trappers each year. Deal with a reliable house. We are the largest in our line in Canada.

FREE HALLAM'S TRAPPERS GUIDE

French and English.
A book of 96 pages, fully illustrated. Came last revised to date—tells you how, when and where to trap, bait and traps to use, and many other valuable facts concerning the Raw Fur Industry, also our "Up-to-the-minute" fur quotations, sent ABSOLUTELY FREE for the asking. Write to-day—address JOHN HALLAM, Limited, Mail Dept., 111 Front St. East, TORONTO

RAW FURS

Our specialty is CANADIAN RAW FURS. Write for our free price list. We pay all mail and express charges. Remit same day as goods received. Hold shipments separate when requested. Prepay charges for returning furs if valuation is not satisfactory. We do not buy from dealers, but from trappers only.

HALLAM FUR CO., Toronto
N. Hallam, Manager, 4 years with John Hallam; E. J. Hagen, Secy., 11 years with John Hallam; J. L. Jewell, Buyer, 7 years with John Hallam; G. Hagen, Secy., 7 years with John Hallam.

Why We Pay More For Your

RAW FURS

We are the oldest RAW FUR HOUSE as well as the largest collectors of CANADIAN RAW FURS in Canada. That means larger experience, larger markets and a LARGER PRICE to you. Ship direct to us. Returns made same day furs are received. Shipments held separate on request. Full price list now ready. Write for it.

HIRAM JOHNSON LIMITED

494 St. Paul St., Montreal
Mail Dept. "D"

SHORTHORNS, COTSWOLDS, BERKSHIRES

In Shorthorns an offering cows and heifers and calves of either sex. In Cotswolds have ram and ewe lambs and breeding ewes for sale. In Berkshires have a nice lot ready to ship.
CHAS. E. BONNYCASTLE,
F. O. and Station, Campbellford Ont.

"OAKLAND" 47 SHORTHORNS

Bulls and females of No. 1 quality. Present offering is three grand bulls, 11, 15 and 20 months respectively. Also a few females of milk strain. "Visitors say they find things as represented."

JNO. ELDER & SON, HENSALL, ONTARIO

SHORTHORNS FOR SALE

I have two extra roan bulls; fourteen and fifteen months old, one from Imp. dam. Also some heifers, all bred in the purple. Phone or write. Hugh Thomson, Box 556, St. Mary's, Ont.

Spruce Lodge Shorthorns & Leicesters Present offering: A number of good heifers and young cows, with calf at foot, from good milking families. A few ram lambs and a choice lot of shearing ewes, now bred to imp. ram.
W. A. Douglas, R.R. No. 2, Caledonia, Ont.

JERSEY BULL=3870

Color solid. Calved April 15, 1913. Dam Brampton Wolsley Thelma 2nd 1721. Sire Brampton Stockwell 810. A strong, vigorous calf, just about ready for service. Can ship G. T. R. from Downsview, or either G. T. R. or C. P. R. from Weston. Price \$100.

T. A. RUSSELL Downsview, Ont.
Four miles from West Toronto

DONJERSEYHERD Offers young bulls and heifers for sale; heifers bred to Eminent Royal Fern.
D. DUNCAN, DON, ONTARIO
Phone L.-D. Agincourt. Duncan Stn. C. N. R.

Gossip.

A BIG STALLION AND FILLY SALE.

An opportunity quite unprecedented in the horse history of this country for the purchase of imported Clydesdale and Percheron stallions and mares, Standard-bred stallions, ponies, harness horses, and a full equipment of horse fittings, including halters, belts, rollers, housings, heavy and light single and double harness, will be presented at C. A. Burns' Repository on Wednesday, February 4th, 1914, when Dr. T. H. Hassard, of Markham, Ont., will sell, without reserve, a large consignment of stallions and mares of a standard of quality never before offered by auction in this country. Practically every one of them is a prizewinner at the leading shows in Canada, Scotland, and France, ranging in honor from championships and grand championships, down to third and fourth prizes. Every one is thoroughly acclimatized, and in the pink of condition. Dr. Hassard is out of the showing business for good, and while he intends to still import and fit horses for sale, he will never again exhibit, hence all his show fittings will be sold. In this offering are, without doubt, the most valuable and most fashionably-bred horses ever brought to Canada. For full particulars of the breeding, terms, etc., write for a catalogue, as the sale will be held during the week of the annual live-stock meetings. There will be reduced fares on all railways.

THE BIG SHORTHORN SALE.

The annual sale held by several Shorthorn breeders in Toronto, has come to be an event of the first importance in Canadian cattle-breeding circles. Several of the leading breeders sell on that occasion, many of the best cattle they can breed or furnish. There is no question about their having made good all their claims in past sales, and this year we are assured that the offering is equal if not superior to any previous one. J. A. Watt, fresh from his good record at the International and the Toronto Shows, offers the best lot of heifers he has put in any sale. They are strong in good blood, and in quality, too. None but a high-class herd could year after year supply such a lot. John Miller, Jr., furnishes a splendid lot, with the usual nice breeding and quality that his cattle are noted for. Many young bulls in this lot will be interesting to the hundreds of men that are this year determined to have better bulls than ever before. Captain T. E. Robson is offering three heifers that will speak for themselves when you see them, high-class stuff either for showing or for breeding. Robert Miller, Stouffville, Ont., the manager of the sale, to whom you should write at once for a catalogue, is selling twenty-five cattle, half bulls and half heifers. Missie Marquis, a five-year-old Missie bull that was grand champion at Toronto in September, is one of the most attractive bulls, valuable in every way. Longfellow, a Village Blossom, that was first in the junior yearling class in Toronto, is rated by the owner as the best bull he has had. He is bred the same as young Abbotsburn. There is also a son of Ringmaster, from a Willis Lavender cow. This calf is a wonder, and will attract attention for good reasons. Many more bulls go to make what a good Canadian breeder pronounced the best lot of bulls he had ever seen in one herd. The heifers are better than ever before. They have the breeding, the size, the condition to make them valuable, and many of them are in calf to or sired by Superb Sultan, one of the best of Whitehall Sultan's sons. There is not much time to arrange for attending the sale, and the catalogue should be in your hands as soon as possible. Good cattle are scarce, and they are needed. This sale has always uncovered some of the best and the cheapest of the year. It will be to your interest to attend, and you will be treated well, too. See the advertisement in this issue.

Make Your Stock and Poultry Pay Better with

Royal Purple

STOCK AND POULTRY SPECIFICS

At a cost of less than a cent a day per head of stock, it will increase their value 25 per cent. Permanently cures Colic, Debility, Worms, Bots and Skin Diseases. Tones up run-down animals so that they quickly gain weight and vigor. Increases the yield of milk cows three to five pounds a day, besides enriching the quality of the milk. ROYAL PURPLE is not a food. It is a conditioner—the best ever so'd. If there was any better we would be making it. It enables your stock to eat the natural food they should eat and get the most benefit from it. Here is the advice of all thorough veterinary doctors—"Feed your stock on food of your own growing"—not pamper them with soft predigested mush so that after a time they cannot digest good, wholesome feed. Feed the good food grown on your own farm—hay, oats, bran, chop, etc. You know what these things cost you and what they will do.

ROYAL PURPLE is an aid to these natural foods and if you use it as directed, we can guarantee better results than if you feed any of the concoctions offered on the market as "prepared foods."

Try It On a Poor-Conditioned Animal

If there is a run-down, poorly nourished beast on your farm, see what ROYAL PURPLE SPECIFIC will do for it. A 50-cent package lasts a cow or horse 70 days. The cost is so trifling that no farmer in Canada has any excuse for having out-of-

health stock around his place. Try it on the poorest-conditioned animal you have and we know you'll be surprised at the result of a short treatment. Cattle and hogs fatten up a month earlier than without it, which means you save a month's feed and a month's labor. You can bring six pigs to the pink of condition at the cost of \$1.50. Steers treated in the same way cost no more than \$1.00 each to put in prime state for market. ROYAL PURPLE SPECIFIC fattens and keeps well horses, mares, colts, cows, calves, steers, hogs. Sold in packages, 50c, and air-tight tins, \$1.50.

Try ROYAL PURPLE POULTRY SPECIFIC on Your Hens

Do you know that ROYAL PURPLE POULTRY SPECIFIC makes hens lay in winter as well as in summer, and keeps them free from disease? It does, and helps them over the moult, fattens and keeps them in vigorous health. A 50c package lasts 25 hens over 70 days. Shouldn't you try it? We have hundreds of recommendations from all parts of the country. If ROYAL PURPLE does not give you better results than anything you ever used, or give you satisfaction, we will refund your money. No matter what your opinion of other preparations, we want you to give ROYAL PURPLE POULTRY SPECIFIC a chance to show what it can do for your poultry—and a 50c package will show you some fine results. Sold in 25c and 50c packages and \$1.50 air-tight tins.

WE ALSO SELL

Royal Purple Cough Specific for cough and distemper. (Will cure any ordinary cough in four days). 50c, by mail 60c.
Royal Purple Sweet Liniment for lameness, rheumatism, sprained tendons, etc. 50c, by mail 60c.
Royal Purple Worm Specific for animals; removes the worms, also their larvae. 25c, by mail 30c.
Royal Purple Disinfectant, in 25c, 50c and \$1.00 tins.
Royal Purple Lice Killer for poultry and animals. 25c and 50c, by mail 30c and 60c.
Royal Purple Gall Cure for scratches, harness scalds, open sores, etc. 25c and 50c, by mail 30c and 60c.
Royal Purple Ragg Specific for roup, pip, diphtheria, typhoid fever, canker, white diarrhoea, swelled head, etc., in poultry. 25c, by mail 30c.

Free TO STOCK AND POULTRY RAISERS

We will mail for the asking our new revised 80-page book on common ailments of stock and poultry. Tells how to feed light and heavy horses, colts, mares, cows, calves, steers, hogs; also how to feed and keep poultry so that they lay winter and summer. Cover lithographed in six colors, showing farm utility birds in their natural colors. This is a book that should be in every farmer's possession. IT'S FREE. Write for your copy today.

W. A. Jenkins Mfg. Co. London, Canada

The Auld Herd and Pleasant Valley SHORTHORNS

We have females of all ages and of the best Scotch families for sale. Those interested should come and see us. Correspondence invited.

Bell 'phone. Guelph or Rockwood Stns. A. F. & G. AULD, Eden Mills, Ont.

Brampton Jerseys

We are doing the largest business we ever did, chiefly with our old customers; young bulls and heifers from sires with tested daughters. Several imported cows and bulls for sale. Canada's Greatest Jersey Herd.

Royalton Stock Farm Holsteins

A number of cows and heifers for sale, bred to Royalton Korndyke Major (Imp.) 12937, whose dam gave 111.1-lbs. milk in one day. Am booking orders for bull calves from above bull at \$25 up, according to age and dam. All bulls of serviceable age sold.

E. C. GILBERT, ST. THOMAS, ONT. Telephone connection R. R. No. 7

Fairview Farms Herd

Offers for sale: A son of Rag Apple Korndyke 8th out of a daughter of Pontiac Korndyke with a record of 27.72 lbs. in 7 days, averaging 4 1/4% fat. Grand dam has a record of 29 lbs. Calf is nearly ready for service. Write me for description and breeding.

E. H. DOLLAR, HEUVELTON, N. Y. (near Prescott, Ont.)

HOLSTEIN CATTLE

The Buyer's Opportunity

We have more Cattle than we can stable. Some of the finest young bulls and heifers we ever offered; their breeding and quality is the very choicest, they will be sold worth the money. Don't wait to write, but come and see them.

D. C. FLATT & SON, R.R. No. 2, Hamilton, Ont. Long Distance Phone 247 1



HOLSTEINS—I can supply a limited number of high-producing and highly-bred bulls, bred on both sides from high official backing. Let me know your wants.

W. E. THOMPSON, R.R. No. 7, Woodstock, Ont. L.-D. 'Phone.

Dr. Maria Montessori



IDEAL GREEN FEED SILOS

The more you investigate the advantages of having succulent silage to feed to your cows all winter the sooner you will decide to erect a silo.

If you are going to buy a silo this year it's high time you placed your order. Orders are coming in so fast that those who wait too long are apt to get left.

We want you to have our Ideal Green Feed Silo Book. If you are a cow owner a postal card request will bring you the book free of charge.

De Laval Dairy Supply Co., Ltd.
MONTREAL, WINNIPEG, PETERBORO, VANCOUVER.

Caked Udders Cured in 24 Hours by DOUGLAS' EGYPTIAN LINIMENT

Here is the opinion of Mr. Robert Harkness, a leading resident of Tamworth, Ont.:

"Having had wonderful success with Douglas' Egyptian Liniment on my stock, I feel it my duty to write you.

Our cattle were troubled with caked udders, so bad, in fact, that we thought they would lose the use of them. We applied the Liniment but twice, and in 24 hours we could milk without any trouble.

When anything goes wrong in our home or stables, this excellent Liniment is always called for, and never fails to give instant relief.

I hope this letter will catch the eye of those whose cattle are suffering from caked udders."

Besides quickly curing this trouble, Douglas' Egyptian Liniment has proved its worth in both human and animal disorders, such as rheumatism, sciatica, neuralgia, sprains, burns and inflammations. It has healed, without blood poisoning or other complications, serious wounds, sores and bruises.

Twenty-five cents at all dealers. Free sample on request.

DOUGLAS & CO.
Napanee Ontario

HERD SIRE FOR SALE

Pietertje Mercedes Wayne, born June 15th, 1910, No. 9930. Son of Count Calamity Mercedes, sire of the first Canadian Bred two-year-old to produce 20 lbs. butter in seven days. Dam Lady Wayne Norine, whose sons have sired:

Queen Butter Baroness, 33.18 lbs.; Calamity Wayne Pauline, 30.25 lbs.; Ferndale Maid, 20-000 lbs. milk one year; 10 others with records from 20 to 26 lbs. Lady Wayne Norine is grandam of more high record cows than any cow in Canada.

Bull is large, mostly white and leaves good stock. For quick sale, will be priced right.

WM. A. RIFE :: :: HESPELER, ONT.

Holstein-Friesian Association of Canada Applications for registry, transfer and membership as well as requests for blank forms and all information regarding the farmer's most profitable cow should be sent to the secretary of the Association. **W. A. CLEMENS, St. George, Ont.**

Glenwood Stock Farm HOLSTEINS

3 yearling bulls for sale, out of big milking strains; at low figure for quick sale. **Thos. B. Carlaw & Son, Warkworth, Ont. Campbellford Station.**

For Sale—Reg. Holsteins—A few choice young cows, due to calve March and May; also three yearling heifers from officially tested stock.
W. A. BRYANT, Strathroy, Ont. R.R. No. 3.

The Maples Holstein Herd

Headed by Prince Aaggie Mechthilde. Present offering: Bull calves born after Sept. 1st, 1913. All sired by Prince Aaggie Mechthilde and from Record of Merit dams. Prices reasonable.

WALBURN RIVERS, Ingersoll, Ontario

Holstein-Friesian Association of Canada Applications for registry, transfer and membership as well as requests for blank forms and all information regarding the farmer's most profitable cow should be sent to the secretary of the Association. **W. A. CLEMENS, St. George, Ont.**

Questions and Answers. Veterinary.

Ringworm.
In the fall the hair was off in patches around my calves' eyes. Now it has extended over the body, and there is a rough scruff. **J. F. F.**

Ans.—The symptoms indicate ringworm, which is very contagious. Isolate the diseased. Moisten the scruff by applying sweet oil; remove it, then dress daily with tincture of iodine until cured. Whitewash the premises in which the diseased have been kept in order to destroy the parasite which causes the disease. **V.**

Fistula.
Filly got kicked on face, between eye and nostril, last winter. The skin was not cut, but there is a slight swelling in the center of which is a small hole out of which pus escapes. My veterinarian cut down on the bone and scraped it last summer. It healed, but still the opening and the escape of pus continues. **J. H. B.**

Ans.—It is probable the bone is splintered. All that can be done is to cut down on it again, and if any portion be partially detached, remove it. There is some deep-seated irritant, which a veterinarian may or may not be able to remove. **V.**

Unthrifty Mare.
Mare's foal was weaned about six weeks ago. She is not in foal again. Last week her mamma became swollen, but upon exercise the swelling almost disappeared, and is now practically gone. She sweats easily, and is sluggish, and is not in as good condition as she should be. She is fed half a gallon of oats, with straw and a turnip, three times daily. **J. C.**

Ans.—Give her a laxative of 1 1/2 pints raw linseed oil. Have her teeth examined, and, if necessary, dressed. Give her a dessertspoonful of equal parts of sulphate of iron, gentian, ginger and nux vomica, three times daily. Feed a little more oats, and a little hay, and give a turnip but once daily, and give regular exercise. **V.**

Lumps on Jaws.

1. Steer three years old has a lump nearly the size of a teacup on his jaw.
2. Calf three weeks old has a lump under his jaw. It is growing larger every day. Would the meat be fit to eat? **F. A. J.**

Ans.—1. This is lump jaw. Give him iodide of potassium three times daily. Commence with one-dram doses, and increase the dose by one-half dram daily, until he refuses food and water, fluid runs from mouth and eyes, and the skin becomes scruffy. When any of these symptoms become well marked, cease giving the drug. If necessary, repeat treatment in about three months.

2. This is probably an abscess. If it has not broken before you see this, lance it, to allow the escape of pus, and then flush out the cavity three times daily until healed with a five-per-cent. solution of carbolic acid. If instead of an abscess it has the appearance and characteristics of lump jaw, it will be wise to destroy it, and the flesh would not be considered fit for consumption. **V.**

Brain Trouble.
Every little while my four-year-old mare suddenly stops, throws her head up, trembles violently, then whirls around five or six times and commences to run, and keeps running for about 15 minutes, then comes to a stand and appears to be stupid. The first attack occurred in the spring. She was on grass all summer, but the attacks continue. She is in foal. Will the foal inherit the trouble? **A. G.**

Ans.—The symptoms indicate pressure upon the brain. If this be a growth, nothing can be done. If it be simply congestion of the bloodvessels resulting from stomaclic irritation, careful feeding may prevent it. Give her a laxative of 1 1/2 pints raw linseed oil, and feed on easily-digested and laxative food, as good clover hay in limited quantities, bran, rolled oats and raw roots. Bleeding tends to relieve pressure during an attack, but the relief is only temporary, and it is not wise to extract blood from a pregnant mare unless necessary. It is not possible to say whether or not the foal will inherit the trouble. **V.**

LAKEVIEW SALE

BRONTE, ONTARIO
Tuesday, January 20th, 1914

Count Hengerveld Fayne De Kol is the sire of most of the offerings. He has 13 sisters that have averaged to produce 100 lbs. of milk each in one day, 12 sisters that average better than 30 lbs. in seven days and 13 sisters that average better than 116 lbs. in thirty days.

Dutchland Colantha Sir Mona is the bull that these heifers are in calf to. His dam is a 27-lb. daughter of De Kol 2nd's Paul De Kol King D, with five daughters averaging 27 lbs. butter in seven days. He is a son of Colantha Johanna Lad, whose dam, Colantha 4th's Johanna, made in one year 27,432.5 lbs. of milk, and 1,247 lbs. of butter. Three of his sisters have made world's records in yearly work in their respective classes, and his dam has five daughters, one over 33 lbs., and all over 20 lbs.

The females offered at The Lakeview Sale will all be sired by, or in calf to a brother of the following cows: Grace Fayne 2nd's Homestead, 35.55; Mona Veeman, 33.78; Blanch Lyons De Kol, 33.31; Blanch De Kol Hengerveld, 33.19; Frensta Hengerveld De Kol, 32.19; Beauty Rauwerd De Kol, 30.53.

Remember, that the Lakeview Herd is not being broken up, we must sell some to make room, but the daughters of the above two bulls will still be developed here, and their value will be added to yearly by official testing.

Do not miss this opportunity, you may not get another.
COL. D. L. PERRY, E. F. OSLER, Bronte,
Auctioneer Proprietor
Radial cars from Hamilton at 10 minutes past each hour for Trafalgar. G. T. R. from Toronto, 6.20 a.m. and 12.15 p.m. Special arrangements have been made with the G. T. R. to have trains leaving Toronto at 9 a.m. stop at Bronte on morning of sale. All trains met.

THE SALE OF THE SEASON

The Third Annual Sale of the SOUTHERN ONTARIO CONSIGNMENT SALE CO., will be held in Cook's Sale Stable, Tillsonburg, Ont., on

Tuesday, Feb. 10th, 1914

We will sell 75 head of choice
HOLSTEINS

Most of them in calf to the best bulls in Canada. Every animal offered will be sold subject to tuberculin test, and also subject to inspection. Everything guaranteed as represented on day of sale. Cattle may be seen at the stable the day before sale, and the consignors will be at the Royal Hotel, where they will be pleased to meet you.


MOORE & DEAN, Auctioneers
CATALOGUES ON APPLICATION TO
R. J. KELLY Tillsonburg, Ont.

Riverside Holsteins

Herd head by King Johanna Pontiac Korndyke whose near dams and sisters, 12 in all, average 33.77 lbs. butter in 7 days. His sister, Pontiac Lady Korndyke, has a record of 38.02 lbs. butter in 7 days 156.92 lbs. in 30 days—world's records when made. We are offering several females bred to this bull also a few bull calves.

J. W. RICHARDSON,
R. R. NO. 2, Caledonia, Ont.

Holstein-Friesians—Bulls ready for service. Prices from \$75 to \$150, according to dam's record. A few fine bull calves also. Prices \$25 to \$75. One with dam's record, 16.46 butter at two years.
D. B. TRACY, Cobourg, Ont.



BEAVER CREEK HOLSTEINS AND PERCHERONS

When wanting some right nice Holsteins of any age, workers and bred from workers, also young bulls, write me. One four-year-old and one yearling. Percheron stallions for sale; also Buff Orpington cockerels and pullets.

A. MITTFELDELDT, Elcho P. O. Smithville Station.

HOLSTEINS
W. T. WHALE & SONS, GOLDSTONE, ONTARIO

Evergreen Stock Farm High Class Registered Holsteins
Winners of 80% all first prizes at the Canadian National Exhibition 1913. For sale—a few choice females all ages and are booking orders for bull calves that may be dropped during the next few months. I will also buy on commission anything in pure-bred or grade Holsteins, singly or car lots.
Bell Phone **A. E. HULET, NORWICK, ONTARIO, R. R. 2**

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No matter how old the plumb, how lame the horse, or how many doctors have tried and failed, use

Fleming's Spavin and Ringbone Paste

Use it under our guarantee—your money refunded if it doesn't make the horse go sound. Most cases cured by a single 5-minute application—occasionally two required. Cures Bone Spavin, Ringbone and Sidebone, new and old cases alike. Write for detailed information and a free copy of Fleming's Vest-Pocket Veterinary Adviser.

Ninety-six pages, durably bound, indexed and illustrated. Covers over one hundred veterinary subjects. Read this book before you treat any kind of lameness in horses.

FLEMING BROS., Chemists,
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HICKMAN & SCRUBY

Court Lodge, Egerton, Kent, England
Exporters of Pedigree Live Stock of all Descriptions.

We are the only firm in Great Britain who make this their sole business, and therefore offer advantages not obtained elsewhere. When our Mr. A. J. Hickman started this business seven years ago, he did not know a single foreign breeder. This year we have exported more stock to order than any other firm in Great Britain. This is a fact which talks. The frequency with which we buy stock from English breeders means that we can do business with them on more favourable terms than can be done by anyone else. No one should import draft horses, beef or dairy strains of cattle, or mutton breeds of sheep without first getting full particulars from us. Highest references on application.

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Clinton, Ontario

Dunganon Ayrshires For high-class Ayrshires, write us or come and see them. We can sell matured cows, heifers, heifer calves, all bull calves are sold. Prices right. L. D. Phone. W. H. FURBER, COBOURG, ONT.

High-class Ayrshires—If you are wanting a richly bred young bull out of a 50-lbs-a-day and over cow, imported or Canadian-bred dam or sire, write me. Females all ages. Prices are easy. D. A. MACFARLANE, Kelso, Que.

ALLOWAY LODGE

ABERDEEN ANGUS CATTLE
SOUTHDOWN SHEEP
COLLIE DOGS

Anyone wishing a choice young Angus bull should write at once. My Chicago winning herd bull, Blackbird Beverly, also for sale. Robt. McEwen, Byron, Ont. Near London.

Farnham Oxfords & Hampshires
The Oldest Established Flock in America

We are making a special offering for 30 days of 30 fine yearling Oxford Down ewes. Being now bred to our imported Royal winning ram. Also 20 first-class Oxford Down ram lambs.

HENRY ARKELL & SON, Arkell, Ontario
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Size	Price doz.	Fifty tags
Cattle.....	75c.	\$2.00
Light Cattle.....	60c.	1.50
Sheep or hog.....	40c.	1.00

No postage or duty to pay. Cattle sizes with name and address and numbers; sheep or hog size, name and numbers. Get your neighbors to order with you and get better rate. Circular and sample mailed free.

F. G. James, Bowmanville, Ontario

Oxford Down Sheep Shorthorn Cattle, Yorkshire Hogs—Present offering: Lambs of either sex. For prices, etc., write to John Cousins & Sons, Bueno Vista Farm, Harriston, Ont.

HILTON STOCK FARM
We are sold out of Tamworths, also females in Holsteins, but still have some choice bulls for sale, from two to six months, officially backed and right good ones.

R. O. MORROW & SON, Hilton, Ontario
Brighton Sta. Phone.

Pine Grove Yorkshires
Bred from prize-winning stock of England and Canada. Have a choice lot of young pigs of both sexes, pairs akin, to offer at reasonable prices. Guaranteed satisfaction. Joseph Featherston & Son, Streetsville, Ont.

HAMPSHIRE SWINE
Both sexes and all ages, from imported stock. Prices reasonable.

C. A. POWELL - ARVA, ONTARIO
Four miles north of London.

Gramandyne Yorkshires & Tamworths
Gramandyne Stock Farm Co., 656 Parkdale Ave., Ottawa, Ontario, can supply Yorkshires and Tamworths, either sex, any age, bred from prize-winners, none better. Long Distance Phone. 3874 Ottawa.

Questions and Answers. Miscellaneous.

Money for Underdrainage.

1. The municipal council proposes lending money to farmers for underdraining purposes: Terms, twenty years, at four per cent. per annum, to be paid in equal annual instalments, on a loan of seven hundred dollars. What should the yearly payment be?

2. Is there a book of Archibald Lampman's poems? Where could I procure it?

Ans.—The payments on such loans are so divided that you are required to pay \$7.36 per annum on each \$100 borrowed. On a loan of \$700, \$51.52 would be the annual payment.

2. Yes, there is such a book, and your nearest bookstore could procure it for you most conveniently.

Growing Ginseng.

Please tell me, through the columns of your valuable paper, the cultivation, harvesting, marketing, and market value of ginseng. Also tell me, in a practical way, how to begin with either seeds or roots, preparation, planting maintenance of the beds, enemies, selection for market, and for improvement, and the profits that may be expected.

Ans.—For soil, choose a good, friable loam, light rather than heavy, and clear of stones, clods, chunks of wood or roots. A northern slope is preferable. For your bed, select a shady place, or prepare artificial shade from lattice-work and annual vines. There is nothing better than a place in the wood, where the undergrowth is not thick and the trees high, but shady. Spade the ground over to the depth of one foot, and remove all roots and clods. Give it a heavy application of leaf mold, and work it well in. Don't make the nursery beds more than four feet wide. Allow 9 to 12 square feet for each ounce of seed to be sown. The permanent bed will not differ from this only in width, and it may be twice as large in this direction.

Plant seed in nursery bed in rows two or three inches apart, and one to two inches apart in the row, about one inch deep. Cover the whole bed with leaf mold or muck about an inch deep, and throw brush on top of this to catch the leaves or snow. Remove brush in the spring, but allow leaves to remain, if not too thick. It is recommended to sow the seed in the autumn. Keep weeds pulled out during first summer, but don't stir the soil or mulch. In the fall, give a dressing of well-rotted horse manure, and return brush covering.


During second season, give the bed the same treatment, and transplant the seedlings into permanent bed that autumn. Plant the seedlings about five inches apart each way in the permanent bed, and give this the same treatment as the nursery bed received relative to covering, etc. From three to five years from the planting of the seedlings will mature the marketable roots. Eighteen months' elapse before seeds germinate, so it is often stored in moist soil in the cellar. When this is done, the soil is first sifted through a sieve smaller than the seed, which condition expedites matters when the seed is to be separated later on. Provide abundant shade by trees or vines and protect from stock. Ginseng has had no enemies of any importance, but it is now sometimes attacked by blight, which spraying will prevent. Young rootlets from the wild state will start a bed, and should be transplanted in the fall, but the spring will answer. When large enough the roots are dug, cleaned and dried, and now bring in the vicinity of \$7.50 per pound. It will be five or six years before you have any marketing to do. The growing is the critical operation. For profits, you will have to take a chance. Some have made fortunes; others have lost all.

Dugald was ill, and his friend Donald took a bottle of whiskey to him. Donald gave the invalid one glass, and said:

"Ye'll get another yin in the mornin'."

About five minutes elapsed, and then Dugald suddenly exclaimed:

"Ye'd better let me dae the ither noo, Donald, ye hear o' sae mony sudden deaths nooadays."



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FARMERS who have used **GALT STEEL SHINGLES** will testify that every claim we make is the plain unvarnished truth.

GALT STEEL SHINGLES have special advantages over any other metal shingle made, owing to their exclusive patented features. The material used is the finest British galvanized steel. The side lock is very secure and rigid. **GALT STEEL SHINGLES** are fitted with nailing flanges at side and top. No other steel shingle can be nailed at more than one place without nailing through the locks.

Write for literature and roofing information which will save you money and put you on the right track. Simply write the one word "Roofing" on a post-card, together with your name and address.

THE GALT ART METAL CO., Limited
150 Stone Road, Galt, Ontario
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Ayrshires & Yorkshires—Bulls for service of different ages; females all ages. Calves of both sexes. All bred for production and type. A few pigs of either sex ready to ship.

ALEX HUME & COMPANY, CAMPBELLFORD, R. R. No. 3.

City View Herd of Ayrshires One two-year-old, one yearling, one calf, males only, for sale, from R. O. P. cows, and sired by bulls from R. O. P. dams.

JAMES BEGG & SON, R. R. No. 1, St. Thomas, Ont.

Maple Villa Oxford Downs and Yorkshires

This fall I have the best lot of lambs I ever bred. I have plenty of show material, bred from the best stock procurable in England. Order early if you want the best. Ram lambs, shearlings and ewe lambs Yorkshires of all ages.

J. A. CERSWELL, Bond Head P.O., Ont.
Bradford or Beeton stations Long-distance phone

Special Offering of SHROPSHIRE EWES—40 imported shearing ewes and 40 home-bred shearing and two shear ewes. These ewes have been bred to choice imp. rams. One crop of lambs should nearly pay for them at prices asked. Also some good ewe lambs at a low price.

JOHN MILLER, Brougham, Ont.
Pickering Stn. G.T.R., 7 miles.
Claremont Stn. C.P.R., 3 miles.

Tamworths—Boars, \$15 to \$30. Sows bred for spring farrow, \$40 to \$50 each; registered. Write for particulars.

JOHN W. TODD, Corinth, Ont.

ELMHURST LARGE ENGLISH BERKSHIRES

From our recent importation of sows, together with the stock boar Suddon Torador we can supply select breeding stock, all ages. Satisfaction and safe delivery guaranteed.

H. M. VANDERLIP, Breeder and Importer, Cainsville P. O. Langford Station on Brantford and Hamilton Radial.

Hampshire Swine I have a choice lot of Hampshire belted hogs for sale. Will be pleased to hear from you, and give you description and prices.

J. H. Rutherford, Box 62, Caledon East, Ont.

Duroc Jersey Swine—Twenty-five sows bred for fall farrow; a few boars ready for service; also one Jersey bull, 11 months, and two bulls, 6 months old. High-producing dams.

MacCampbell & Sons, Northwood, Ont.

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 H. J. DAVIS, Woodstock, Ont.

Long-distance phone C. P. R. and G. T. R.

Morrison Shorthorns and Tamworths bred from the prize-winning herds of England. Have two choice young bulls for sale 10 months old, out of large deep-milking cows and also some choice cows. Tamworths both sexes. CHAS. CURRIE, Morrison, Ont.

Cloverdale Large English Berkshires No matter what your needs in Berkshires may be, see Lang the live Berkshire man. He is always prepared to furnish anything in Berkshires. Write or come and inspect.

C. J. LANG, Hampton, Ont., Durham Co.

BERKSHIRES My Berkshires for many years have won the leading prizes at Toronto, London and Guelph. Highcleres and Sallys the both sexes any age. Adam Thompson, Shakespeare, P. O. and Strn.

Prize Chester White Swine—Winners High-class in type and quality, bred from winners and champions. Young stock both sexes, any age, reasonable prices.

W. E. Wright & Son, Glanworth P. O., Ont.

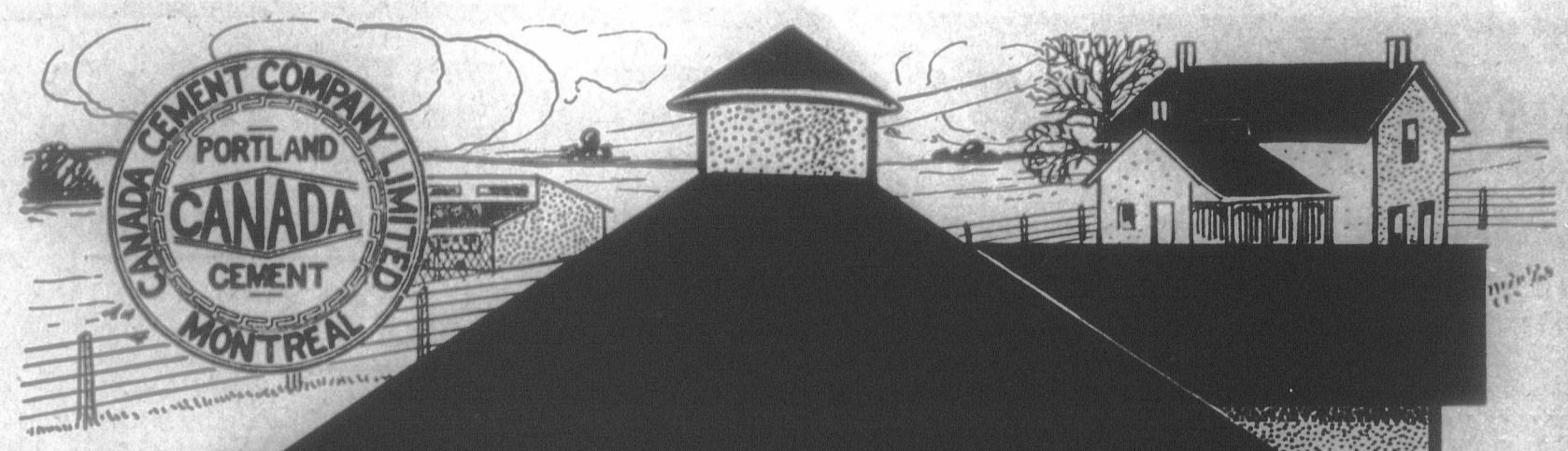
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Wm. Hay, White Bridge, Hamilton Road
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WOODBURN BERKSHIRES are founded on the famous old Sally tribe, noted for big size, length of body and strength of bone. We can supply pairs and trios not akin. Show stock a specialty. Also high-class Cotswolds, ram and ewe lambs, shearlings.

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BUILD the kind that will keep your ensilage always at its best. Build the kind of silo that does not have to be repaired or painted every other year. Your dairy herd will show its appreciation in the additional quantity of milk it gives. The best silo, by keeping ensilage perfect, increases output and soon pays for itself.

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is the dairyman's surest dividend payer. It keeps ensilage in just the right condition, and does not permit it to dry out or get mouldy. A concrete silo cannot leak, rot, rust or dry out. It has no hoops to replace. Requires no paint and needs no repairs during an ordinary lifetime.

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DIRECT FROM FACTORY—FREIGHT PREPAID
COSTS LEAST TO USE

BUY PAGE WIRE FENCE direct from us at factory prices [freight prepaid] ---because it costs you less to use than any other fence. Page Fence may cost a trifle more to buy---but it outlasts several ordinary fences. Page Fence lasts a lifetime. Much of the ordinary fence needs replacing in 5 or 10 years. Therefore, it really costs twice as much to use as Page Wire Fence. At these low prices Page Wire Fence costs little [if any] more to buy than common fences. It costs much less to use for these reasons:

PAGE BIG STEEL WIRE

Gauge for gauge, Page Wire is the best wire used in fences to-day. This means a strong, staunch, sturdy fence. One that can be stretched tight with the fewest posts. Page Wire is carbon steel wire. Its use adds years to the life of Page Fence.


EVERY UPRIGHT EVENLY SPACED

Page Fences stretch taut and even, because every wire is under uniform tension. They stay taut because every upright is evenly spaced. Every wire receives equal support—carries an equal share of strain. You never see "sags" nor "bends" in Page Wire Fence. If we say uprights are so many inches apart—they're no more.

BETTER GALVANIZING IMPOSSIBLE

Page galvanizing adds the final perfection to Page Wire Fence. It is the best material for its purpose money can buy. Applied by the most modern process brains can devise. It is thick, even and does not peel. It makes Page Wire as nearly rust-proof as wire can be made. Page Fence is good years after common fences have been ruined by rust. The Page Knot makes the uprights slip-proof without cracking or injuring galvanizing or wire.



STYLE			Page Heavy Fence			PRICES		
No. of	Height, inch	Uprights, inches apart	No. 9 Page Wire throughout in 20, 30 and 40 Rod Rolls, Freight Paid.			Old Ont., per rod	New Ont., and Quebec	Maritime Prov.
			Spacing of Horizontals in Inches.					
4	30	22	10, 10, 10			\$0.16	\$0.18	\$0.19
5	37	22	8, 9, 10, 10			.18	.20	.21
6	40	22	6½, 7, 8½, 9, 9			.21	.23	.24
7	40	22	5, 5½, 7, 7, 7½, 8			.23	.25	.26
7	48	22	5, 6½, 7½, 9, 10, 10			.23	.25	.26
8	42	22	6, 6, 6, 6, 6, 6, 6			.26	.28	.29
8	42	16½	6, 6, 6, 6, 6, 6, 6			.28	.30	.31
8	47	22	4, 5, 5½, 7, 8½, 9, 9			.26	.28	.29
8	47	16½	4, 5, 5½, 7, 8½, 9, 9			.29	...	...
9	48	22	6, 6, 6, 6, 6, 6, 6			.29	.31	.32
9	48	16½	6, 6, 6, 6, 6, 6, 6			.31	.33	...
9	51	22	4, 4, 5, 5½, 7, 8½, 9, 9			.29	.31	...
9	51	16½	4, 4, 5, 5½, 7, 8½, 9, 9			.31	...	...
10	48	22	3, 3, 3, 4, 5½, 7, 7, 7½, 8			.31	.33	...
10	48	16½	3, 3, 3, 4, 5½, 7, 7, 7½, 8			.33	...	...
10	51	16½	3, 3, 3, 4, 5½, 7, 8½, 9, 9			.33	...	...
10	51	22	3, 3, 3, 4, 5½, 7, 8½, 9, 9			.31	.33	...
11	55	16½	3, 3, 3, 3, 4, 5½, 7, 8½, 9, 9			.36	...	...
			Medium Weight Fence					
			(Maritime Province prices of Medium Weight, also Special Poultry Fences, including painting.)					
			No. 9 Top and Bottom, and No. 12 High Carbon Horizontals between; No. 12 Uprights; No. 11 Locks.					
5	36	16½	8, 8, 10, 10			.18	.19	.22
6	36	16½	6, 7, 7, 8, 8			.20	.21	.24
6	42	16½	7, 7, 8, 10, 10			.20	.21	.24
7	42	16½	6, 6, 7, 7, 8, 8			.22	.24	.27
7	26	8	3, 3, 4, 5, 5, 6			.23	.25	.28
8	48	16½	4, 5, 6, 7, 8, 9, 9			.26	.28	.31
9	36	12	3, 3, 3, 4, 5, 6, 6, 6			.27	.29	.32
9	50	16½	3, 4, 5, 6, 7, 8, 9, 9			.28	.30	.33
10	54	16½	3, 3, 4, 5, 6, 7, 8, 9, 9			.30	.32	.35
			SPECIAL POULTRY FENCING					
			No. 9 Top and Bottom. Intermediates, No. 13. Uprights 8 inches apart.					
18	48	8	Close bars			.42	.44	.46
20	60	8	Close bars			.47	.49	.52
STAPLES—25-lb. box, freight paid						.75	.80	.85
BRACE WIRE—25-lb. rolls, freight paid						.70	.75	.80
STRETCHING TOOLS—Complete outfit, ft. pd.						8.00	8.50	9.00
			PAGE "RAILROAD" GATES					
48			10-ft. opening			3.80	4.00	
48			12-ft. opening			4.00	4.20	
48			13-ft. opening			4.25	4.45	
48			14-ft. opening			4.50	4.75	

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