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MAY 27, 1908



A GREAT FAMILY REUNION. CAN ANY OF OUR READERS SURPASS IT?

The above photograph is a remarkable one in several ways. It shows Mr. and Mrs. Daniel Hogarth, of England, who came to Canada and settled on a farm south of Solina, Durham County, Ont. They raised a family of 14 children, all of whom are living. The illustration shows the sons and daughters, and their husbands and wives, grandchildren and great grand-children. The old gentleman seated near the right is in his 88th year. There are 98 descendants in all of this couple, but all were not present when this picture was taken. There are 34 grand-children and 28 great grand-children.

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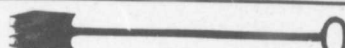
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It is desirable to mention the name of this publication when writing to advertisers.

Commissioner of Agriculture for New Brunswick

The agricultural destinies of the Province of New Brunswick are now presided over by Hon. D. V. Landry, M. D. He is still a comparatively young man, having been born at Memramcook, Westmoreland Co., N. B., in July, 1866. He was educated in the Public School of his native village entering St. Joseph's College

Hon. D. V. LANDRY, M.D. where he graduated in 1885. From that date until 1889, he taught in various schools throughout the Province. In the latter year he began the study of medicine, and three years later earned his diploma from Laval University, Montreal. In 1901, he entered Municipal politics, and represented the Parish of Wellington for two years.

Born and brought up in a farming district and naturally inclined to scientific study, he has always taken a deep interest in agricultural advancement, and ever since going to Buctouche, where he has practiced since 1894, he has been a leading and active member of the Agricultural Society at that place, of late years acting as secretary.

He is the owner of a snug farm close to the village of Buctouche, and combines practical experience in agricultural methods with his scientific studies. Naturally optimistic and enthusiastic he is very hopeful for a large development of the agricultural possibilities of the Province, and is determined that his Department shall proceed with energy to do all that legitimately can be done to promote the interests of Agriculture and its allied industries.

The Dairy Industry

That the dairymen of the province have every confidence as to the stability of the dairy industry, is shown by reports received at the Department of Agriculture from time to time.

The producers who were short of feed during the past winter did not hesitate to expend considerable money in securing proper feed to carry their cattle through the winter in good condition. The farmers in the vicinity of one town in eastern Ontario, purchased over \$150,000 worth of hay during the past winter, one farmer paying out \$650.00 on hay account.

The proprietors of factories have this year made very important improvements in equipment. Though the bulk of cheese made during 1907 was considerably below that of preceding years, and although the farmers suffered severely in the failure of crops, the confidence of both classes as to the future of the dairy industry for this province, has not been shaken in the least.

Thirty-five instructors are now making regular visits to the factories and creameries throughout the whole of the province. Every factory has been included in one or another group, and the ground is being thoroughly covered by men who have been specially trained to give instruction not only to the makers in methods of manufacture, but also to the producers in up-to-date methods of taking care of the raw material and in delivering it to the factory in a proper condition.

While the spring has been somewhat backward, and the make of cheese up to the present time, considerably below last season's output, the pastures are now in good condition in many localities, and the prospects are, that the output, from this on, will be quite up to the average.—Department of Agriculture, Toronto.

Truro News

Pictou County, N. S., has gone the limit in automobile exclusion, for by a resolution passed a few days ago by the County Council, every day but Monday is close season for owners of "buzz" wagons. Two counties in Nova Scotia have so far excluded autos under the Act passed at the last session of the legislature. Cumberland dealt less stringently with the machines, only prohibiting their operation on Wednesdays, Saturdays and Sundays. Prince County, like this Province has long had a violent antipathy to autos, and some of the ladies of that county, who indulge in driving, have had unpleasant experiences and when the County Council met recently it decided to let the autos run only on the day when the cares of the wash tub would be occupying the ladies.

The death occurred at Ottawa recently of Mr. Robt. Clarke, the well-known breeder of Chester White swine and district manager of the Frost & Wood Co. Mr. Clarke exhibited swine at the Ottawa Winter Fair and Central Canada Exhibition for several years, and was well known among swine breeders of the country.

As stated in a recent issue, Mr. F. M. Logan has resigned his office as Provincial Commissioner of Live Stock and Dairying in British Columbia. He is now engaged with the Hygienic Dairy Co. as general manager. Mr. Logan has left for New York State to visit the dairy sections where he will gather the latest ideas in buildings and equipment. Before his return, he will also purchase a complete plant for the company. Mr. Logan hopes to have the company in operation in July.

The farmers in the vicinity of Lindsay, and even as far north as Beaver-ton, have some mysterious disease among their herds. Recently there has been a mysterious falling off in the herds. Veterinary surgeons are reported as being in the dark in regard to the trouble. Some of the farmers have lost from five to 20 head. It is stated that the cattle first become powerless, which condition is followed by a ravenous appetite. They then quit eating and gradually die. This plague began about the middle of last winter and is apparently a disastrous one for the farmers.

The reports from the cheese factories for the present month show a small output, compared with other years. A prominent dairymen in Peterboro County states that the May make of this season is the smallest he has known for many years. He accounts for this state of affairs in the fact that farmers have decreased the number of their stock. This was occasioned by the small amount of feed with which they began the winter. The result is now felt in a shortage of the milk supply. The stock are not in the best of condition owing to the long, severe winter. The spring has been backward and the grass has not grown well and there will be practically no grass until the first of June. Unless the weather improves and remains very favorable throughout the season, the year's output will be lessened considerably through the output of the first month having dropped off so much from former years.

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Only \$1.00
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AGRICULTURE, THE KEYSTONE OF CANADIAN PROSPERITY

VOL. XXVIII.

FOR WEEK ENDING MAY 27, 1908

No. 19

PLANTING TREES UPON OUR FARMS

John R. Philip, Grey Co. Ontario.

If you would have trees about your home, plant them now. Your home, beautified by trees, may act as a loadstone to keep your boy upon the farm.

PLANTING trees is generally greatly neglected on the majority of Ontario farms. It is next to impossible to make our homes beautiful and attractive without trees and shrubs of one kind or another. How often we hear the excuse, "I have not time," and still we have time to lean over the line fence, and talk to neighbor Jones for a couple of hours at a time. Another excuse is sometimes made, "I do not know where to plant them." If you watch your stock for a month or six weeks, you will find them on hot days under a tree that, perhaps, some of your forefathers have planted, or protected from destruction when the land was being cleared.

There are many places to plant trees where they will be both beautiful and beneficial, such as along fences, on waste land, and on hill-sides that are too steep for cultivation. Trees for reforesting such waste places for stock protection, and for wind breaks, may be obtained from the Forestry Department of the Ontario Agricultural College, Guelph, the only cost being the express to your nearest railway station.

For shade and ornamental purposes, the majority of farmers can have all the trees they require for the digging. Just go to the wood lot and get our native trees, such as ash, elm, maple and butternut, and evergreens such as cedar, spruce and balsam. These cost practically nothing but the time spent in getting them. This time in a very short period, will prove to be time both well and profitably spent.

WHERE TO PLANT

Deciduous trees, such as the ash, elm, maple, or butternut may be planted along the road in the fence line. It is surprising how quickly they grow to the size and the required strength to string a wire fence upon. A fence can be strung on them by first nailing a strip of soft timber to the tree, then stapling the wire to this picket. Such a fence row will greatly beautify the front of your property. Trees may be planted in other places, such as along the lane, and in the fence-rows between fields. Here they will protect the stock from the burning rays of the midsummer sun. I am convinced that not one per cent. of the farms have too many trees planted on them. However, it is possible to get

them too thick around the dwelling. When such is the case it causes a dampness and unhealthy surrounding to the house. It is a wise policy not to plant too thick, for once a tree is well established it takes a stout heart to destroy it.

Then for evergreens, cedars make a beautiful hedge, when they are planted around a small lawn. I do not advise the average farmer to lay out too large a lawn. A small one, well kept, is much better than a large one ill kept. The cedar makes a nice ornamental tree as well, and can be trained to almost any shape. The spruce

will then make a much more finished appearance when set in. There are places where certain species of trees do not seem to thrive. For instance, suppose you set out a row of maples. A few are almost certain to die, and next year they may be replaced with no better results. If, however, you are very anxious to have the whole row of the same variety, it may be necessary to dig a large hole and fill it with earth from some other place. If you do not care to go to this trouble, try some other kind of tree. In all cases dig the hole large enough to receive the roots without crowding, or bending the roots out of their proper position. It may not be necessary to set trees in their former position, but it is a very easy matter to mark the natural position of the tree, and it may insure its ultimate growth. Take a pocket knife, and mark, say, the south side of it; then set it out with that mark facing the south.

THE EVERGREENS

The same principles as for deciduous trees apply to evergreens in regard to selection from high or low land. We can often get cedars growing on fairly high dry land, but they are difficult to start, for the reasons before stated.

The planting of evergreens is similar to that of deciduous trees, excepting for hedges, when it is necessary to set them in a trench. Be careful to get fine earth well in around the roots while setting. Keep them cultivated, or mulch with strawy manure for a year or two.

The best time to clip evergreens is in spring, before growth begins. Care should be taken, especially with cedars, not to clip to the bare wood. As this species throws out no fresh shoots, it would never again fill up with green as it was before. Any shape desired may be obtained from trimming, but where heavy snows are liable to come in winter, it is not wise to make flat tops on hedges, as snow lies very heavy, and does considerable damage. They will resist the snow better if trimmed round or peaked on top. Then the snow will split and fall off, doing no damage.

Planting may be done at any time when the tree is in its dormant stage. The best results are obtained, however, from spring planting, before growth starts.

To get fine trees is not like building a dwelling or outbuilding, which can be built and made to look their best in a season. It takes time to bring them to maturity, and, therefore if one would have them in the future he must make an effort to get some started. To some it may not appear worth while to plant trees, but it is a certainty that in a few years they will enhance



A FARM HOUSE WITH "HOME-LIKE" SURROUNDINGS

The home of Mr. Robt. Hunter, sr., Maxville, Ont., one of our foremost breeders of Ayrshire cattle. Conditions such as pictured cannot be made in a day, but a day's work spent now in tree planting will do much to bring about these conditions in the future.

is also good for this purpose, and can also be clipped, which causes it to become much denser.

HANDLING AND PLANTING

It is not wise when selecting deciduous trees, to take them from land that is too high and dry. They are liable to have one or more large roots and few small feeders, and they will be difficult to start. In the lower land they are much easier to lift, besides a great many more roots are lifted without injury. In no case allow the roots to be exposed to the sun and wind. Once they are dried out, it lessens their chances of life considerably. Throw an old sack over them and keep them wet.

Large trees should never be selected for this purpose. A little patience, and they will soon grow. Always prune back the top to counteract or balance the injury done to the roots in lifting. Cut the trees to a uniform height. They

the value of your property, to say nothing of the benefits you will reap from them. They may also act as a loadstone to hold that boy on the farm, who otherwise might perhaps imagine that almost any other place was more attractive than home. It is often said by some when they see fine shrubs and hedges, "If only I could have some like those." Whose fault is it? Their own. If you would have them on your place, start now. Once you have them started, they will require little attention.

His Corn Acclimatized

W. L. Davidson, Shefford Co., Ont.

My experience in corn growing has been with the Western Beauty variety. I have selected the early ears in the field for the last four years. As a result of my selection, I find that I have to-day a variety that will mature fully ten days earlier than when I first had it. I am firmly convinced that other varieties can be acclimatized and made to mature several days earlier by following out this scheme of selecting early ears. Seed corn for growing either grain or corn for the silo should be produced in or near the locality where it is to be grown.

My usual method of cultivation is to plow early in the autumn, selecting pasture or clover sod that has been manured during the winter or spring. As early in the spring as the land will permit, I go on it with a disc harrow, followed with a smoothing harrow. When the land is sufficiently warm and dry, I give it a good harrowing to kill weeds that have sprouted and at the same time to make a fine seed bed.

My seed corn is always selected from a seed plot. I select two ears as uniform as possible from the best rows in the plot. Each row is planted with the grain from a single ear. The rows are three and one-half feet apart, each way. Thus a seed plot of one-quarter acre contains 1,000 hills, each hill having four stalks. I plant the seed plot with the hoe, planting four kernels taken from the middle of an ear, in a hill, last year each hill yielded me an average of seven pounds of seed, with five good ears weighing five pounds when husked.

TILLAGE DURING GROWTH

As soon as the corn shows growth, we run a one-horse cultivator between the rows as deeply as possible. We follow this with a weeder in a day or two if the weather is favorable. When the corn is five or six inches high, we pass the weeder over it again, followed with the hoe, to uncover any hills that may have become covered and to cut out any weeds that may be left. If this is thoroughly done, there will be no more need for hoeing. The cultivator will do the rest. The cultivator must be kept going once a week if the weather will permit till the corn begins to tassel.

We remove all suckers and detassel all inferior or blank stalks in our seed plot, thus allowing only the best to furnish us with seed for our next year's crop.

When planting for ensilage we use the corn planter in rows three and one-half feet apart with the hills two feet apart in the rows, planting four or five kernels to the hill. We follow the same cultivation with our silage corn as we do for the seed plot.—W. L. Davidson, Shefford Co., Que.

We think The Canadian Dairymen and Farming World is both interesting and instructive. We have taken it since its origin and see a great improvement in it.—A. Smith, Enfield, Ont.

If every farmer would adopt some system of seed selection, as outlined, sow only the choicest seed, test it thoroughly before seed time, put it in the soil as early as possible, having the soil in the best possible condition to receive it, our average crop production an acre would be increased from 15 to 25 per cent.—W. F. S.

FAVORABLE OPINIONS REGARDING RURAL FREE DELIVERY

The Sixteenth of a Series of Articles Written by an Editorial Representative of this Paper, who Recently Visited the United States, with the Object of Studying the Free Rural Mail Delivery System.

OUR Postmaster-General, our Dominion Minister of Agriculture, and other members of our Canadian Government, hold up their hands in horror at the thought of our introducing free rural delivery in Canada. They declare that it has been a failure in the United States. On the other hand the leading Government officials of the United States, from President Roosevelt down, are even more emphatic in their claims that the service is a complete success. They are surprised that we have not introduced it in Canada before this.

There must be a reason for this difference of opinion. What is it? It is because our Government officials look at the question purely from a financial standpoint. Because they are convinced that the direct returns from rural delivery will not pay the direct cost, they say that we should not have rural delivery. In the United States the Government officials, while not forgetting the financial considerations, look also at the indirect benefits, as represented by a much more complete service, the increased postal revenue, the saving in time effected by the farmers through not having to go for their mail, the increased value of farm lands, and the added comforts of farm life.

If rural free delivery has proved a failure in the United States, why is it that every Postmaster-General in the United States during the past eight years, has been outspoken in pro-



Fourth Assistant Postmaster General P. V. De Graw.

Mr. De Graw has direct charge of the rural delivery service throughout the United States, and is a firm believer in it as will be seen by the interview with him published in this issue. Mr. De Graw, having been engaged in journalistic work for many years, gave the representative of The Canadian Dairymen and Farming World a cordial reception when he called on him to obtain his views regarding free rural delivery.

nouncing it a success? Why is it a difficult matter to find a person in the United States, of any considerable prominence, whether he is in or out of politics, who is not a strong advocate of the rural delivery service? Although I interviewed a large number of people in all ranks of life, and living in several states, including farmers, rural carriers, editors of papers, and Government officials, not one was found who did not say that free rural delivery had been worth all that it had cost.—Let us see what they say.

POSTMASTER-GENERAL MEYERS VIEWS

When I called to see Postmaster-General

Meyer, in Washington, he was just leaving the city, and had little time in which to talk. He gave me, however, an extract from a speech he had made in Boston in October last, and said that it showed what he thought of rural delivery. This extract reads as follows:

"The history of rural delivery is an interesting one, and should be understood by our people, for the reason that there is a feeling prevalent in many parts of the country that this service is an extravagance, and an unnecessary drain upon the Department. However, let us look at the results accomplished in the last ten years: The first rural route was established in the fall of 1896. Fifteen thousand dollars were expended during that fiscal year, the postal deficit being \$11,500,000. For the fiscal year ended June 30, 1907, the expenditures for rural delivery were \$27,000,000, and the estimated postal deficit showed a decrease, as compared with 1897, of about four and one-half million dollars, the total being about \$7,000,000. This is an undoubted evidence to my mind, that while the expense incurred in connection with rural delivery is enormous, yet it has increased the receipts, and the benefits to our people can not be measured in dollars and cents. The isolation which existed in many parts of the country has been overcome; the people are in daily communication with their friends in the rest of the world; the daily papers and magazines come to the door of every farm house on the rural routes, and enlightenment and information are being spread broadcast throughout the land. Medical men have said that already the establishment of the rural service is having its effect upon the mentality of our country patrons, and that because of it, insanity is on the decrease."

In still another statement by Mr. Meyer, made public last summer, he said that he had started an investigation to find the reason for the United States postal deficit last year, as a result of which he had convinced himself that it was not due to free rural delivery, but rather the reverse.

EFFICIENCY MOST IMPORTANT

In 1906, the Postmaster-General was George B. Cortelyou. In his report for that year, Mr. Cortelyou said: "While it would be a gratifying circumstance if the Post Office Department were self-sustaining, I am less concerned about the deficit than about efficiency of administration. The public demand for postal facilities is constantly growing. If the installation of the rural service had depended upon the existence of a surplus in the postal revenues under the existing system of accounting, that service could not have been given. The same considerations apply to a number of other branches. The financial returns are so interwoven with and dependent upon others that there is much force in the contention that it is unreasonable to charge any one of them with the responsibility for the deficits."

MR. DE GRAW'S VIEWS

While in Washington I had a long interview with Fourth Assistant Postmaster General, P. V. DeGraw, who has direct charge of the rural delivery service. In reply to my question, Mr. DeGraw spoke in part as follows:

"When the first \$10,000 was appropriated to

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Spring Tooth Cultivator in Corn

Few farms are not supplied with some kind of a spring tooth cultivator. Many farmers, however, are to be seen throughout the country cultivating their corn by means of the old fashioned scuffer to which is attached one horse. They do not realize that the corn can be cultivated much more efficiently, more rapidly and much easier by means of the spring tooth cultivator. Don't let yourselves be caught this summer cultivating corn with a one horse machiae if you have a two horse spring tooth cultivator. Get the cultivator out to the field and adjust it to fit the rows of corn as you have sown them. Make a trial of this method anyway. Once you have used it, you will never go back to the old method.

The Water Supply Problem Solved

Frank Ellis, Brant Co., Ont.

Speaking of farm water supply, we have been "up against it,"—if you will permit the expression—for years. We had a cistern at the barn which held 200 barrels, besides two other cisterns that would hold about 30 barrels each. In the spring time, this was quite sufficient, but when the busy time came on our water would give out. I have frequently taken the team off the binder to draw water. A few years ago, a neighbor of mine and I bought a tank in order that we might have something to haul water in. Before that, we either had to draw it in milk-cans or drive our cattle two-thirds of a mile to get water. You can imagine it was not an attractive contract, nor was it profitable, for in the summer time when the roads were dusty and the days were hot the cattle were as thirsty when they got back to the barn as they were when they started, and they would have to wait until the next day for a drink.

Again in the winter if we drove them to the creek, they would hump up their backs and probably take a few swallows and go without more water till the next day. Looking at the question from a sanitary standpoint, I do not think cattle can do as well or be as healthy if they have to drink stagnant cistern water.

But thank goodness, those days are past. At that time, my neighbors and myself were all in the same boat as regards our water supply. We were all afraid to "drill." Two of my neighbors tried to drill but failed as they could not get through the boulders and quicksand which they encountered after they were a short distance down. Last winter, an enterprising firm of well drillers came to me several times with a proposition to put in a well. The other fellows on the road, my neighbors, would send them to me and wanted me to make the first attempt. If I succeeded, they would then fall in line. About that time the matter became serious to me. We had started into the milk supply business in a neighboring village and to meet the requirements of the trade, our cattle must have lots of good, pure water. As these well drillers offered to put me in a well for \$1.75 per foot complete, on the condition that if they did not secure water, they would demand no pay, I was taken with their proposition and started them at it. They went down 243 feet, 226 of which was soil and the rest was in the rock. The water came up about 190 feet and the drillers assured me that I could pump it day and night to the end of time and I could not lower it. I am not sure how true that may be but at any rate, we have a first class water supply.

I put an "Idey" windmill on the well and we force the water into a steel tank in the bathroom in the house. From there, it is piped down to the sink in the kitchen, where we have a tap. Then it goes to the barn basement into a 30 barrel tank. A trough in the shed regulated by a float is supplied from this large tank. After the ex-

periences I have had in obtaining water, words can not tell how much I appreciate the supply I now have. Nor can I calculate how much we lost doing without our present system. Some have assured me that they would give \$1,000 more for my place now than they would before I put in this well. As to the cost of the thing, the whole business complete cost in the neighborhood of \$600. I would not be without it for ten times its amount and would advise anybody who at present has an unsatisfactory water supply to go to considerable expense in installing a supply that will give satisfaction.

The Orphan Foal

N. C. Campbell, Brant Co., Ont.

Occasionally breeders of horses are left with a young foal upon their hands and no mother to nurse it. When such cases arise some are tempted to give the foal away, or failing that, to destroy it. If the foal be three weeks old or over, there is generally little difficulty in raising it to a mature horse. The young foal will grieve considerably for its mother for some time, but this does not seem to hurt it any. It will soon forget about its trouble and will look for and be ready for its meals. It should be given a nice roomy box stall for a short time and should be kept away from the heat of the hot summer day.

County Road System in Hastings

The Hastings County road system is 472 miles in length, and is principally in the southern and settled part of the country. The northern and little-occupied townships are given an annual grant for road purposes in lieu of county roads. Since and including 1904, there has been spent in permanent construction \$85,665.22 of which the Province has paid \$28,555.07 under the Highway Improvement Act.

The road work in Hastings is in charge of a County Road Superintendent who, subject to the direction of the council, has general oversight of all work performed. Under him there have been at work, during the past season, six groups of men, each in charge of a foreman. It was formerly the practice of the county to board the men in camps; but the present plan is to supply each foreman with tents or a covered van and camp and outfit and allow the men to board themselves. They find their own provisions and do their own cooking. The rate of wages on this plan has been, for laborers; \$1.50 a day; and for a man and team, \$3 a day.

The county owns two rock crushers, each rates at 100 cubic yards a day. The experience is that the crushers will turn out all they can be fed, which ranges from 50 to 80 cubic yards a day each. The county also owns a traction engine,



A GRAVELLED COUNTY ROAD IN HASTINGS

Hastings County has spent \$85,665.22 on permanent construction in connection with its county road system since and including 1904. The roads are constructed with narrow grades. A width of 18 to 20 feet is found sufficient with the central seven feet metalled.

In favorable weather it is well to allow it on pasture, though care should always be exercised to feed it regularly.

The feed should consist mainly of cow's milk. As cow's milk is much richer in fat than that of the mare, it must be diluted with water. It should also be sweetened somewhat by the addition of sugar. Two quarts of cow's milk to one quart of water with about a tablespoonful of brown sugar, fed four or five times a day gave good results when fed by the writer to an orphan foal. As soon as the foal learns to eat, it was given ground oats and bran, all it would eat up clean, at a feed. Well cured clover hay or fresh grass was also fed at times when the colt was not on pasture.

If you are so unfortunate as to have an orphan foal this season, try this method of feeding it, and you will not be disappointed.

In 1907 upon the petition of a number of rate-payers, the question of the repeal of the commutation-by-law was submitted to the electors. The majority of those voting favored its repeal. The Council then returned to the old statute labor system. I think it was decidedly a backward step, and one calculated to hinder the cause of good roads in this Township.—W. A. Kelman, Reeve.

22 h. p., made with extra wide wheels to provide against settlement when used on soft ground. One engine is rented; so that during the threshing season, when this engine cannot be secured, only one crusher can be continued in operation. The stone crushers give much satisfaction.

The stone used on the roads varies considerably in quality. Field stone is generally employed. Much of it is gneiss, there is much tough blue limestone, and in some sections, a limestone that weathers badly. Gravel is also used, where plentiful and of good quality. The stone is crushed to good dimensions, and very little large stone was noticed on the roads, an ordinary size being one and one-half inches largest diameter. The most satisfactory stone used, is the blue limestone. It is not difficult to crush and it packs and wears well. Care is taken to use only clean stone and no sand or other binders is used.

Farmers living along the roads to be improved, place the stone in convenient piles, and when the work on the road is undertaken, the crusher is set up beside them, the stone crushed and hauled to the roads. Where very plentiful, the stone is crushed as a favor to the farmers; in other cases, the county pays from seven to 10 cents a yard for material.—A. W. Campbell, in "Highway Improvements."

Farm Water Supply

R. S. Stevenson, Wentworth Co., Ont.

The necessity of procuring a supply of pure and wholesome drinking water for his family and his live stock is a matter to which many of our farmers do not pay sufficient attention. One would think that a matter that so closely concerns their health would receive the greatest attention. There is no doubt that a great deal of the sickness amongst the rural population is caused by unwholesome drinking water.

The Agricultural Department at Ottawa have been, for a number of years analyzing numerous samples of drinking water sent to them for that purpose from all over the Dominion. The result of their analysis has gone to show that a very large percentage of the samples were dangerous for people to drink and a much larger percentage unwholesome. Now, we must remember that this does not truly indicate the percentage of impure waters that we may be using, as very few people would take the trouble to send a sample of drinking water for analysis unless they had some grave suspicion either from the taste or the smell of the water that it was unwholesome. But they have found that some of the apparently best samples of water were the worst polluted. So we cannot be certain simply because water does not taste or smell badly that it necessarily is a wholesome water for drinking purposes.

The chief sources of pollution of our well waters appears to be the soakage and drainage from farm yards and houses. As a matter of fact, many of our wells have become little better than cess pools, and it is entirely our own fault, as here in Ontario we are blessed with springs, of the greatest purity in their natural state. With wells that are located in barn yards or close to the back doors of the house if they do not happen to be dug through a very impervious soil, it is only a question of time when the soakage will pass down and enter the well. A well that makes a sudden rise after a rain, is

one that should always be regarded with suspicion. There are only two causes to which you can attribute the sudden rise, either the water has got in over the top or else it has passed rapidly down through the soil. Either of these are bad if the surroundings of that well are not what they should be. The soil itself is a great purifier no doubt. But, when it becomes saturated with polluted matter it is worse than useless as a filter.

To the dairyman this water supply is of the utmost importance. It is impossible for cows to give a good flavored and wholesome milk, if they are compelled to drink bad water. There are cases on record where bad flavors in milk have been traced to bad water that the cows were drinking. It is nothing short of criminal for a man who is supplying milk for household use in our towns and cities, not to see that his cows have pure clean water to drink.

At the present time the necessity does not exist for locating our wells as near the buildings as formerly. By means of one of the small pumping wind-mills the water can be forced a long distance. In many places there are flowing springs, which hydraulic rams can be installed, and by this means water can be raised and forced long distances. The writer has had a ram in operation for over twenty five years, raising the water one hundred and thirty feet and forcing it fifteen hundred feet in distance.

I would urge on any one who is thinking of digging a new well to locate it more with a view to having it give him a supply of good wholesome water, than to having it so very convenient. A farmer cannot spend money any other way that will pay him as well as that which he lays out in putting in a supply system, not only for his farm buildings, but also for his house.

Tailing should be done when ten days old or sooner, and castrating ten days later; two operations, so often neglected at a loss of thousands of dollars annually to our sheep growers.—Jno. Campbell, Woodville, Ont.

\$101 a Piece from Dairy Cows

Editor, The Dairyman and Farming World.—I am justly proud of the record my cows have attained, but I think that still more can be accomplished under more favorable circumstances. I would like particularly to say a few words that might encourage dairymen who are keeping only a few cows, and to show them that good money can be made out of cows when properly cared for. Ten years ago I started with some three or four cows that I had at that time. They were not any better than those of my neighbors. I began to feed and care for them as well as I could and soon got good results. I never bought any expensive cows, but selected as carefully as I could, often buying them very cheap. In this way I have obtained some very good ones.

Under no circumstances allow your cows to get thin or out of condition. Always keep them so that they are smart and able to do their work. I feed some chop or bran the year round. When the pasture is good just a little but as the feed in the field gets poor I increase the meal in the stable. At the present time an feeding to eight cows a ration of bran 12 pounds, corn and oat chop 15 pounds, cotton seed meal 7 pounds, that, with a pound of salt thoroughly mixed and slightly moistened is divided among them twice a day, not equally, but just as I think they can utilize it. I give them also two feeds of hay and one of straw as well as roots until they were done in April. I find that it pays to feed well early in the winter as it is harder to keep up the flow of milk then than later on. Then keep your cows comfortable. My cows are out every day for a little while to drink and exercise, but I don't allow them to get cold and I always try to keep the stable at as even a temperature as possible.

To make a success of dairying one must lay considerable stress upon thorough milking. Do all you possibly can to get your cows in the habit of milking. This is easiest done with a heifer, but even with a cow it is wonderful what can be done to keep up the flow.

Speaking of the results of care and feeding, last year I had eight cows which from January 1st to December 31st brought in from various sources, counting butter, skim-milk, and veal calves, one hundred and one dollars a piece. I consider what I have done anybody else can do as merely made the best of what I had at hand without going to any extra expense except the feed.—D. W. Miller, Waterloo Co., Ont.

Tree Surgery

J. C. Chapin, Assistant Dominion Dairy Commissioner, St. Denis, Quebec.

Surgery is an art and more of application to man and beast than to trees, if we regard the word in its general acceptation; but, as will readily be seen while following the development of my subject, the word "surgery" is much better than any other one to qualify the kind of operations I am going to describe for the preservation of ornamental and fruit trees.

This paper has been written less for the benefit of owners of large orchards covering acres and acres of land or of forest-like parks, than for the proprietors of small orchards of one or two acres in extent or of a few ornamental trees around their houses and farm buildings. The owners of large orchards or parks can without much detriment suffer the loss of a few trees through the action of heavy falls of snow, the violence of stormy winds or the overbearing of fruit and, furthermore, it would not be practical for them to under-

take the restoration of a large number of broken trees on account of the high cost of the operation. On the other hand, farmers owning small orchards and proprietors of village lots surrounded by ornamental trees, have a great interest in keeping all the trees they have in their orchards and on their lots in the best of condition and shape. They cannot afford to lose, without suffering much disadvantage, a fine tree about 15 or 20 years old, occupying a prominent place on their small holding, especially if there is some way of preserving it.

TREE PRUNING AND TREE SURGERY

I do not mean to speak of pruning, while referring to surgical operations to be made on damaged trees. To nip a new shoot, to cut out a small branch with the pruning knife, to shorten a young limb with the pruning shears, to remove a large branch with the pruning saw, all this means pruning. But to remove two or three branches broken by the splitting of the fork of the tree where they were united, to straighten bent or broken-down limbs, to set upright a branch growing crooked from the trunk, this is tree surgery.

OUTFIT FOR A TREE SURGEON

The tree surgeon should have a good and complete set of instruments to perform his operation; namely: a hatchet, a hammer, a saw, a chisel, a monkey-wrench, a brace with an assorted set of bits, two or three gimlets of various sizes and a piercer. Then, he should have in readiness a good assortment of bolts of all sizes, from one that will inch to eight inches, with nuts and washers, assorted wire nails from one to three inches, some galvanized wire of 8, 10, 12, and 14 gauges, an assortment of hardwood splinters of various sizes, strips of cotton two or three inches wide and grafting wax.

SPLIT FORKS OF TREES

There are three special classes of surgical operations to be performed on trees, to preserve their limbs and their shapes. Sometimes a tree is split in the first fork from where the largest limbs branch off. This happens most often, in winter, after a heavy fall of snow, and the damage thus caused is noticed only in the spring. There are two ways of dealing with such an accident. If the tree is rather small, cut clean with the chisel all the inside splinters so as to obtain a smooth surface of adhesion, taking good care not to touch the bark; tie the branches closely together with a rope, in order to bring the two split parts face to face; go through both with a wire nail long enough to protrude outside; clinch the point of the nail with a mallet, make a good application of grafting wax so as to prevent the introduction of air, water and insects. Wrap the split parts with strips of cotton cloth round and round, overlapping. Then, take off the rope and, after two seasons of growth, take away the cotton, if it is still there.

With big trees the operation is a little different. The first part of it is performed as told above. But, once the branches are to be tied with a rope in order to join them together, you may have to raise them with a piece of board placed under them, where another person lifts them up. Then you proceed to make a hole with the brace and bit and instead of a nail, use a bolt long enough to fit the diameter of both branches joined together. Always use washers and nuts with the bolts. Then continue and finish the operation as in the first case.

OPERATIONS ON YOUNG LIMBS

Sometimes you may have to deal with what I call the second class of operations. They are made on branches that have been bent down and kept so bent either by the weight

of snow broken, or care at the you.

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of snow on the limbs or by over-bearing of fruit. If the accident has been brought by the presence of snow, as soon as the snow is off the ground, and there is no more frost in the limbs have somebody to lift the branch and straighten it up for you.

Often, you will find that the bend is so sharp that the branch is half broken. Straighten it with great care and take away the splinters, if there are any, so as to get a close union of the broken parts. Take a splint of hard wood, about one inch wide, half an inch thick, two feet long and as stiff as possible. Apply it on the bent or broken branch, on the outside of the bent part. Tie the two ends of the splint to the branch with a rope in order to obtain a close adherence. Then use a brace and bit to make one hole at each end of the splint, going, at the same time through the branch and a similar one in the middle part of the splint. Insert three or four, three bolts of the size suiting the diameter of the branch. Set them with the nuts tight, and take off the rope. If the bent branch thus repaired is broken, put some grafting wax on that part, wrap up with strips of cotton cloth taking in the splint and branch together.

OPERATIONS ON STRONG LIMBS

The third class of operations the tree surgeon may have to perform, necessitates the use of the pruning saw and of some wire. This happens in the case of those branches or limbs that have been bent under the weight of a heavy crop of fruit and have remained so bent during the whole summer till the gathering of fall fruit. On such occasions, wood growth has taken place on the bent limbs during at least three months and it would be absolutely impossible to straighten such branches without incurring the risk of breaking them. I will indicate a sure method of making the operation without hurting the limb. On a length of about two feet on the outside of the sharpest part of the bend, make, with the pruning saw, half-way through the wood of the branch, saw-cuts at intervals of half an inch, taking good care, before beginning that work to place a support under the branch to prevent its splitting during the operation.

After the branch is so cut, tie it with a rope while it is straightened up by a helping hand, to a sound branch. They yield readily under the pressure made from below to fill up the narrow gaps left by the saw cuts. When they are well straightened, make, with the brace and bit, or a gimlet, a hole in each of the straightened limbs, at a height of about two feet above the part where the operation was performed. Pass through each of the holes a wire of a gauge or strength corresponding to the weight of the branches and clinch that wire outside of each branch so that it may hold the branches tightly together. Then apply a dressing of grafting wax and cotton cloth strips as mentioned for the other classes of operations, and in two seasons growth all will be healed.

PRACTICE IN WRITER'S ORCHARD

I have practiced the three classes of operations on many trees in my own orchard for many years and always with the best of success. I have trees having as much as fourteen bolts in their branches, not one of them to be seen now, because they are covered by the growth of new wood. Of course, it may happen that in future years, when such trees will be old and replaced by new ones somebody may find, when splitting the old trunks for fire wood, some hard knots to crack, but this is of no consideration for the man who wishes to save a valuable tree from destruction. These trees are all

healthy, good-looking and bear abundant crops of fruit.

A LAST WORD OF ADVICE

Never use a wire or tying material of any kind around the branches or trunk of a tree where they are to remain more than one season, on that tree. Always pass them through the branch or trunk, never around them.

A Good Word for Tree Planting

Ed.—Dairyman and Farming World—Having been to the Old Country during the past winter and after seeing considerable of England, I am more than ever in love with your lovely country, and her trees add much to the beauty of the landscape. I have had considerable experience in tree planting around our home, having so far set out 200 Norway spruce and 50 or so maples, basswoods and Linden trees. Three cut leaf weeping birches that I set out near the house have grown remarkably well and are the most ornamental tree I know of. A purple maple on my lawn has a fine appearance after the leaves come out. As the season advances, how-larches are also making a very rapid growth but have been partly defoliated for two or three weeks in mid-summer for the last few years by a green worm. However, they have not suffered much as yet. The larch is very much like the tamarac and does best on dry land. It is the most valuable timber tree grown in Scotland. I brought a few over with me but they were too advance in foliage and will not amount to much. I have 300 silver fir which are coming on nicely. They are something like the Norway spruce but are larger and more vigorous trees. I am not quite sure whether or not it is hardy enough for Canada. A Douglas pine, a concolor spruce and a silver cedar are doing well. A blue spruce is growing very slowly. In speaking of growing trees for forestry purposes, I am convinced it will pay to keep part of our farms in wood. Lumber has nearly doubled in Brantford in the last 10 years. To plant a thriving young wood gives as much pleasure as a field of wheat or corn. I have four acres that I fenced four years ago. The trees were some size then, ten or twelve feet high. Some of them look like 30 feet high now, and are a fine thick stand all over. Some, however, are not of a valuable sort, such as ironwoods, but they serve as a nurse crop to the other and more valuable varieties up, such as oak, cherry, basswood, etc. Another five acre lot I fenced three years ago. The stand of larger trees was getting thin and three-quarters of the area was growing a thriving young spruce. I got 1,500 trees from the Forestry Department at Guelph and planted them in the open spaces of the bush. They all lived in the shaded places but where it was open and covered with grass, fully one-third of them died. In this area this spring, I see quite a few little elms, basswoods and maples creeping up through the winter grass. In the shaded places the maples are more numerous.

I have planted comparatively few trees along fences and never with the view of attaching wires to them. I have seen quite a few, however, and it seems to answer very well but I think trees along the fence, close enough for posts would spoil a lot of land for cropping. A few trees along a roadside fence or on any other place certainly add a great appearance to a farm and many of our farms have too few. It has always seemed to me, however, that the right place for growing fencing material was in the bush or swamp, though trees

from 30 to 40 yards apart along a fence, that are supplemented by posts between, have a nice effect.

The soil here is a soft loam, very favorable for the planting and growth of trees. Very few that I have set out have died. The spruces were preceded by a crop of potatoes and were kept clean for a few years. The others were mulched with straw. Spruce trees can be planted up till the middle of June, out the last of May is better. A moist day should be chosen for planting if possible. If the day is dry, it is safer to dip the roots in a puddle of earth and water, mixed up thick enough to leave a coating on the roots, in fact it is a good practice to puddle all the roots of all trees before setting them out.—James Fate, Bant Co., Ont.

The Split Log Drag a Success

Having heard Mr. D. Ward King lecture upon the split log drag at the Winter Fair at Guelph last winter, I decided to make a split log drag, and give it a trial this spring. I am much pleased with the success of this somewhat crude road-making implement. We have had it out five different times and the road does not seem to rut so badly with the wheels this wet weather after the drag has been used. On the second occasion that I used my drag, a pathmaster from a neighboring beat chanced along. He examined it very closely, and praised the work it was doing. The next day, he had one of his own working on his beat. An acquaintance of mine from a town near by drove past just as I had finished dragging the road for the first time. He had gone over the road in the forenoon and was then returning home. I had dragged the road in the meantime and was just untying it. He looked at the drag closely and said: "Is that the machine that levelled this road since I went up this morning?" I assured him it was. "Well," he replied, "it certainly does a great job for a simple looking thing."

Last year we obtained a grant from the council to crush a quantity of stone and put it on the road. As we could not get the stone conveniently this year, and owing to the efficiency of the split log drag, I did not ask the council for any grant this season as we can live on a clay road now with the aid of the split log drag; besides, when it is dry, the clay road is the smoothest road we have.—H. R. Nixon, Brant Co., Ont.

Wind Engine

The Ontario Wind Engine and Pump Company are shipping to Beira, East Africa, four complete

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1908 SHEETINGS



Canadian Air Motors, with tanks, pump, grinding set, also a shipment to Pretoria, South Africa, which indicates that trade is picking up in that part of the world and that Canada is securing some of it.

This firm is also erecting a 100-foot Galvanized Flag Staff for the "Daughters of the Empire" at the Old Fort, and the old flag, on a permanent steel flagstaff, should command itself to all the loyal subjects of Canada.

Sheep shearing should be done about the 10th of May. I would strongly recommend a shearing machine. They cost about \$20 complete, and one will do for two, or even three flocks. A man that can shear by hand can easily use them as the main point in operating a machine is to hold the sheep in such a manner as to keep their skin tight. In this way, there is very little danger of cutting the sheep; there is quite a saving in wool and you get a much nearer looking job.—Stanley A. Logan, N. S.

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HORTICULTURE

Best Six Fall Apples

G. Raymond, La Trappe, Que.

In this category, we have fruits for exportation entirely, consequently there is no reason to fear a glut as they are always sure to be disposed of. Harvesting and other manipulations should be made with the greatest care. The varieties recommended are for the Province of Quebec:

ALEXANDER

By the size of its fruit, its remarkable fertility and its hardness, the Alexander is found in all true commercial orchards. The fruit is not of the best quality for dessert but no thing is its equal for cooking. In good land, with proper fertilizing, this apple attains an enormous size and the returns from it are considerable. One cannot sufficiently recommend this variety. The tree, it is true, is subject to the terrible disease of the spot but with constant watchfulness and treating with Bordeaux mixture, one can become master of this.

TETOWSKA OR GYPSY GIRL

This is an imported Russian variety of comparatively recent date, the best, to my thinking, of all those fruits which were imported at that time. The tree is very hardy, grows vigorously and compares well with that of the Duchess when the fruit is large, of an elongated form, bright red, with a little green on the dark side. It is a good commercial apple which will always bring a good price on the market. Dealers buying orchards will never regret when they find these loaded trees in an orchard, to give the price asked for by the grower. I do not hesitate to recommend this variety above all others for the districts in Eastern Quebec, where it is difficult to succeed with winter apples.

MARLBORO

We have cultivated this variety for many years and it has been impossible for us to identify it. It is perhaps the result of chance as we have many trees of this variety. The tree is very hardy at LaTrappe, grows vigorously and is endowed with remarkable fertility. The fruit is larger than the McIntosh of nearly the same shape and of a red color more or less barred. It is always of first quality for dessert and its beautiful appearance makes it a fruit of the first class for marketing. The name it bears has been given it by ourselves. We certainly think recommending the cultivation of this fruit, whose season is the same as the McIntosh.

WEALTHY

This variety is so well known that it scarcely needs a description. Of doubtful origin, it has not been long spreading over the American con-

continent and also in our province of Quebec, where the climate suits it admirably. Its extraordinary fertility and its precocity in bearing, make the Wealthy the largest yielder to the acre. The trees spread very little and by making the plantations close enough, the returns to the acre can be considerably increased. We have a young orchard of Wealthies and though the fruit does not sell at as high prices as other varieties, it gives up the largest profits. It is necessary to pick the fruit before it is quite ripe as it falls easily, a defect, which if it cannot be completely corrected, at least can be considerably overcome by fertilizing, especially by potash fertilizer.

FAMEUSE

This variety is, and shall be for a long time, the queen of Canadian apple. Last year we had the advantage of listening to a paper making apologies for the Fameuse. People will come from afar, for a long time yet, to get our beautiful Fameuse, of which they never tire eating and which they prefer, as in my case, to the succulent orange. Some contended that the Fameuse is not very hardy. Those who attended our summer meeting at St. Jean Port Joli are able to state that there were many Fameuse exhibited. It is true, they were small but it is necessary to state that it was hardly in the power of fruit growers of this province to have them otherwise, considering their season, which was very unfavorable to the production of normal fruit. At the close of a meeting, I visited the orchard of Mr. Chapais and noticed Fameuse trees loaded with fruit, although these trees were old, nearly as large as those in the vicinity of Montreal. These two had resisted the disastrous spring of 1896. The hardness of the Fameuse appears to be firmly established. This consideration should deter none from planting this variety any more than the disease which attacks the fruit and which can easily be overcome by spraying with Bordeaux mixture, which should be done even in the dry seasons, which are supposed to be propitious to the beautiful Fameuse.

MCINTOSH RED

This variety divides popular favor with the Fameuse and not without reason. The quality and size of its fruit, combined with its beautiful color, places it in the first rank amongst choice fruits, always asked for by the true lover of fruit who does not hesitate to pay a large price for an article of the first class.

A large number of this variety has been planted the last two years and there is still such a demand that the nurserymen cannot meet it. I do not think the trees are so hardy as the Fameuse; at least, it does not seem so hardy as grown by us. However, it is worthy so to give entire satisfaction. It must not be forgotten that the flowers of the McIntosh need other trees in their immediate neighborhood for their fertilization and it would be imprudent to plant only trees of this variety.

That the following fruit growers, viz.: E. A. Morden, Capt. Geo. Murchinson and James Waldbrook be and are hereby appointed a committee to make arrangements for other markets for the fruit of this district in the event of the said association persisting in acting on the proposed schedule of cartage charges:

And that the secretary be and is hereby instructed to send a copy of this resolution to the said association and to request a reply on or before the 18th inst.

Carried unanimously. Certified to be a true copy. J. Cavers, secretary, Oakville.

Cultivating Currants

Wm. Fleming, Owen Sound, Ont.

For success with currants, have the ground perfectly free from grass and weeds and keep it clean. This will require cultivating about once every week or ten days according to the weather. The ground should never be cultivated when too wet or too damp.

This cultivation must be kept up in a perfect state if good results are to be obtained, for once let the grass and weeds get the control and the chances are ten to one that the plantation is ruined. When the grass and weeds become masters, there is no probability that the plantation can be properly restored to a first class condition. The aim should be to destroy the weeds before they come above ground.

Profits in Spraying

The Nebraska Experiment Station has just issued Bulletin No. 105 entitled, "Does it Pay to Spray Nebraska Apple Orchards?" The bulletin contains much information of value to Canadian fruit growers.

The spraying operations from which the records published in the bulletin were obtained were conducted in two orchards. The purpose of the work was to demonstrate the proper methods of spraying apples; and to determine whether, under the conditions existing in Nebraska, it pays to spray. The materials used were Bordeaux mixture and Paris green in the first three sprayings, and arsenate of lead alone in the last two sprayings.

The cost of spraying in one orchard was about 25 cents per tree for four sprayings, and in the other orchard about 40 cents per tree for five sprayings. Spraying produced a net gain per tree above the cost of spraying of \$1.70 in one orchard, and \$2.56 in the other orchard. It

increased the yield of fruit by 1.7 bushels per tree in one orchard, and 2.1 bushels per tree in the second orchard. The improvement in quality of fruit was also very noticeable. In one orchard the sprayed trees produced about 45 per cent. of No. 1 fruit while the unsprayed trees gave only 4 per cent. of No. 1 fruit. In the other orchard about 62 per cent. of the crop on the sprayed trees was first class while only about 22 per cent. of the crop on unsprayed trees was first grade.

Suggestions are given in regard to methods of preparing and applying spray mixtures, and various arrangements for convenience in the work are pointed out. Five sprayings are recommended, as follows:

First—After the cluster buds open, but before the individual flower buds expand.

Second—Just after the petals fall.

Third—Three weeks after the blossoms fall.

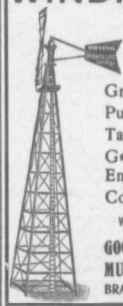
Fourth—Ten weeks after the blossoms fall.

Fifth—Three weeks later.

On the old strawberypatch, picking is done in the morning so that the fruit can be taken to the market as early as possible. The berries are kept shaded and as clean as possible and the boxes are picked full. As soon as picking is concluded for the season, the patch is plowed down and sown with oats. These are cut and used for mulching the new patch that is coming on.—Edward Eagle, Weston, Ont.

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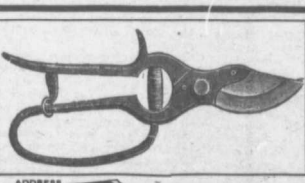
By WALTER P. WRIGHT

The object of this useful manual for all classes of horticulturists is to present in concise and pleasurable introduction to practical gardening, and to compress as much information as possible into the space at command. It gives detailed directions for the culture and selection of the leading flowers, fruits and vegetables, each subject being made clear by appropriate illustrations. One of the best features of this work is "A Pictorial Garden Calendar," giving hints and illustrations for every month of the year. Illustrated, 5x7 inches. 157 pages. Cloth, 80¢. The Canadian Dairyman and Farming World, Peterboro. Our complete catalog of books sent free on request.

Toronto Cartage Charges

The following resolution was passed at a recent meeting of fruit growers in Oakville, Ont.—Moved by P. A. Bath; seconded by W. T. Davis:

That the fruit growers of the Oakville District in meeting assembled, having considered the schedule of cartage charges of the Toronto Fruit and Produce Association, as set forth in the circular letter of the association dated May 1st instan, are resolved not to submit to the proposed extra charges on fruit and vegetables consigned to members of the said association for sale on commission:



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M. Lockh

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POULTRY YARD

Artificial Raising of Chicks

M. Lockhart Tindall, *Renfrew Co., Ont.*

Having heated up the brooder for 24 hours and covered the floor with a litter of barn chaff, finely cut hay or straw, the chicks may be removed from the incubator when the last one has been hatched about 36 hours. To avoid chills and subsequent bowel trouble, they should be transferred in a warm lined basket or box and carefully placed under the hover.

It behooves us to be careful as to the material used for bedding, and for the first week would strongly advise the use of oil clover, cut straw or chaff from the barn floor, if clean. Avoid shavings, saw dust, bran, etc., as the chicks are sure to pick up some and thus cause bowel trouble.

The proper heat at the start is from 85 to 90 degrees. This should be maintained for the first week. The second week about 5 degrees lower, gradually reducing it as the chicks grow older, depending of course on the outside temperature. After all is said and done, the chicks themselves are the best guide, for if comfortable they will spread out and lay round under the hover, but if too cold they will bunch up and chirp disconsolately.

Feeding:—The chickens should not be fed for the first 48 to 60 hours, as the young chick is well supplied by nature with food in the shape of the yolk which is absorbed just before exclusion, and if fed sooner they are sure to contract bowel trouble, (indigestion) and die. More chicks are killed by over feeding too soon than can be imagined.

The first feed should consist of dry bread, cracker crumbs or pinhead oatmeal moistened with a little milk and squeezed dry to a crumbly mass and sprinkled with fine grit, they should also be supplied with fresh drinking water or preferably skimmed milk given in a fountain so that they cannot smear themselves. This food may be used for the first week, after which a mixture of cracked grains such as wheat, corn, peas, or rice may be fed, and when ten days old a mixture consisting of oatmeal, shorts, cornmeal and bran may be fed dry from a hopper, which should be kept before them all the time. Grit, charcoal, bonemeal and oyster shell, and a good grade of beef scraps should also be before them in hoppers. Also plenty of fresh water, skimmed milk or buttermilk, and green food such as lettuce, onion tops, cabbage, etc., cracked grain should also be fed in the litter during the day to compel the chicks to exercise.

A small wired-in run should be made in front of the brooder and the chicks should be let out on the grass every day. For the first few days they should be carefully watched and driven in when showing any signs of getting chilled. After they get warmed up they can be let out

again. As they get older the run can be enlarged. In no case should they be allowed out until the dew is off the grass, as they will soon get wet through, when chills and bowel trouble will result.

Before proceeding further let me draw your attention to the importance of not overcrowding and of keeping the brooders scrupulously clean. Overcrowding is one of the most fruitful causes of mortality among chicks and it is false economy to crowd too chicks or more in a brooder or colony house where there is only really room for fifty. For successful raising one ought to have at least two brooders to each incubator, in fact, they should be separated into flocks of fifty, thus necessitating the second brooder. When the second batch is taken off the chicks can be put into the first brooder and at the end of the next three weeks the first ones are old enough to go into colony coops and thus making room for the second batch to be hatched. As soon as distinguishable the pullets should be separated from the cockerels, the former given free range if possible, and suitably fed for breeding stock and the latter penned up and fed for market, with the exception of some of the most promising which should be retained for stock purposes.

On Trap Nesting Hens

A. G. Gilbert, *before standing Committee, Ottawa*

An important change in the manner of breeding in birds is made by the introduction of trap nests. In January, 1904, the work of building up prolific egg-laying strains of fowls was commenced. There are two methods by which this purpose may be accomplished. One is by observation of the birds, and the other by "trap nests." The manner of operating the trap nests may be described as follows: Each fowl, in the different laying pens bears a number affixed to one of its legs. On entering a nest to lay, the hen involuntarily releases a hinged door which closes the exit and also prevents another fowl from making her way into the nest. After the hen in the nest has laid she is released by the attendant, who notes her number and marks it on a card conveniently situated in each pen. A complete history of each individual hen is so secured. By this means the good layers are distinguished from the poor ones. The best layers are selected to breed from, the others are discarded.

PROLIFIC EGG-LAYING STRAINS

By breeding only from the best layers, in the course of a few years, prolific egg-laying strains of fowls are built up. Not only that, but the best market types are secured as well. This combined result is of the greatest importance, for we obtain by such selection from Barred Plymouth Rocks, White Wyandottes, Buff or White Orpingtons, Dorkings, etc., really dual purpose fowls; birds that are good for both eggs and flesh—money makers from both standpoints. And further, by selecting the chickens from these selected layers—while young—in one of the new pattern winter houses which I have been describing, we build up hardy winter laying strains of fowls as well as prolific egg laying ones. Surely this is most satisfactory progress, "his obtaining by systematic and careful selection—as compared with former hap-hazard methods—strains of fowls which are better lay-

ers, better market types, and hardier in every way.

Professor Gowell, of the Onono Experimental Station, during 10 years ago found that some fowls laid only 7, 9, 12 or 15 eggs a year. They were simply living on and on breeding from his best layers. Now he has fowls which will lay 180 and 200 eggs per year.

TRAP NESTS AND FARMERS

The trap nest you speak of would be rather an inconvenient one for the average farmer, asked Mr. Owen, one of the members of the Committee. He would have to have someone there all the time to take a note of the fowl? That is really the point that was raised in this Committee when I brought this matter up some three years ago, remarked Mr. Gilbert. The farmer should not, as a rule have to attend to them at all properly—and that means profitably—attend to. He should not under any circumstances have more than 100 at the outside and a few choice fowls to select from. I believe you will see at the distant office of the Provincial Governments establish poultry stations for the direct benefit of the farmer. These stations will do the work of trap nest selection and the eggs, or the stock, from these selected hens will be sent directly to the farmers. Probably county or township councils may take the matter up if the greater body does not.

Six Eggs a Week

I have a neighbor who is blowing out a big Minorca hen which he says lays six eggs a week. How many weeks in the year could a hen keep that record? The 200 egg a year hen would have to average 16 of the 52 weeks. It looks to me as though the 200 egg hen would be a scarce article. I kept a record of a flock of ten White Leghorns last year, and their record was 110 dozen eggs, or 132 per head. I thought that was pretty good as it gave me a profit over the feed at the rate of about \$1.50 per head. Can anyone beat it with any other breed of fowl? I would like to see their experience in the poultry department of the Dairyman.—Geo. H. Middlesex Co.

As you say, it would require a hen to lay six eggs a week for 33 weeks, to make her a 200 eggs a year hen. That leaves about 19 weeks for her to rest, so that the record of 200 eggs is quite possible with the non-sitting varieties. That it is so is proven by the fact that many poultrymen are having such a return from an occasional hen, though it is not very general. Your record of 1320 eggs from 10 records is a good one, and we trust your suggestion that others write their experience, will be acted upon freely, as we will gladly publish their letters.

Crosses or Pure Breeds?

I am breeding poultry for market and have a book composed mostly of White Wyandottes. I have had fair success in hatching this season, but have heard two pure breed crosses together will make a better market fowl than either of them by the first place. What variety would be a good one to cross with the White Wyandottes, in order to get a full breasted stock to make a fowl when a dress 12-6. K. Elgin Co.

All pure breeds of poultry were produced with a special object in view, either color or shape. The White Wyandotte is considered a first class utility fowl, both for eggs and a good plump carcass when dressed.

However, if any improvements could be made in them, it could best be done by mating a pen of pullets with a White Indian or Male. This cross would still give you a white fowl, and add roundness to the breast of the carcass, giving about the only improvement we could suggest in a cross with a Wyandotte.

105 Trust Chicks

Ed., The Dairyman and Farming World.—Your readers may be interested in hearing of my success in hatching this spring, and of the cause to which I attribute that success. I have used Zenoleum, which I see advertised in your columns, in my incubators, and will say that I have 105 of the brainiest incubator-hatched chicks I ever saw. They are in every respect as good as a hen-hatched.

The experiments at the Guelph College with Zenoleum used in the incubators, and my own success, leads me to believe that the use of Zenoleum tends to increase the percentage of chicks secured from the eggs used for hatching.

E. P. Bliss,
Fort William, Ont.

BROUGHT QUICK RESULTS

Through my small want ad. in the Poultry Department of the "Dairyman," I sold the brooder I first appeared of the ad.—J. H. Callender, Peterboro, Ont.

A Busy Season

"We are pleased to inform you that the demand for bronze turkeys has been greater than ever before. We have had more orders than we could fill. We sold four turkeys to go to the Experimental Farm at Trinidad, and also shipped to Nova Scotia, New Brunswick, Quebec and to the United States. We have sold more turkeys in our own township than ever before." — Jas. Ford & Son, Drumquin, Ont.

Messrs. Ford & Son recently placed a small advertisement in the poultry page of The Dairyman and Farming World, and the foregoing letter describes the results. A pretty good investment, apparently.

Whenever weather conditions will permit, allow the chicks to run outside the brooder, even if they must still be confined to the limits of some large box, in order to keep them off the cold ground. It will be a sort of holiday for them as they love to investigate new corners, and will help to harden them gradually to a free run about the brooder.

POULTRY EXCHANGE

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Favorable Opinions Regarding Rural Free Delivery

(Continued from page 4)

"make an experiment in rural free delivery the proposition was not without vigorous opponents. A former postmaster-general had emphatically disapproved of the scheme and it was denounced by many Congressmen and well meaning citizens. Even after it had obtained a start "many Senators and Representatives voted for it only under pressure from

"their rural constituents. But now it is everywhere recognized that rural delivery has demonstrated its right to a permanent place in the public service, and few persons can be found who are opposed to the system.

"Nobody who visits a rural community after an absence of several years in which free delivery of mail has been introduced can fail to note the changed conditions. He will find the people wide-awake and will conversant on all current topics,

"He will find an awakened interest in the improvement of public roads. He will find a brighter outlook and more contented people. It was hard for the farmer to stop work during the crop-moving season and use his team to drive to the post office. It was still harder to drive through the winter's storms. Many preferred to let the mail lie in the post offices for a week or more. But now, the rural carrier brings daily letters from relatives and friends. He furnishes money-orders and registers letters. And last but not least, he brings the daily newspaper. The farmer must now have his daily paper. And he reads it. He does not fall into the city dweller's habit of 'reading headlines.' He reads the articles. He is familiar with the details as well as the facts. The most strenuous protests now received from the rural districts by the Post Office Department are in cases where the patrons of the rural routes have reason to believe some changes will be made in the service which will prevent them from receiving regularly their favorite newspapers."

A DEMOCRATIC VIEW

One of the most enthusiastic believers in free rural delivery is Mr. D. E. Finley, of Yorkville, South Carolina, a Democrat and a member of the Post Roads Committee of the House of Commons. His views are as follows:

"The benefits of rural delivery to the people living in rural districts, particularly, and generally to the country as a whole cannot be estimated. I am of the opinion that the real estate values in the rural districts have been increased probably \$750,000,000, and the time saved the farmers which would otherwise be spent in going to the post office, at from \$50,000,000 to \$60,000,000 a year. The rural service in effect amounts to a great national university for the farmers; increased intelligence and knowledge of men and affairs, daily contact with the outside world, results in increased earning capacity to the farmer and this is evidenced by the increased production by people living in the rural sections."

In the face of such testimony, it is difficult to understand why our Canadian government officials persist in their opposition to the introduction of at least a limited rural delivery service in our more thickly settled farming districts.—H. B. C.

We are all enjoying your paper very much and think it is getting better all the time.—Laura Edney, Wentworth County, Ont.

City Milk Supply

A short while ago we started into the city cream trade. It suits us well so far. The ice packing is not as much trouble as I had at first expected. The crushing of ice is easy. I just put a chunk in an old sack and throw it on the cement floor of the milk-room. Then about six stamps with the cement pounder reduces it to the size of nut coal. Any person who has ice to crush will do well to give this method a trial.—H. N. Roberts, Brant Co.

Montreal's Milk Supply Discussed

At the City Hall, Montreal, recently there was held a conference to discuss the proposed rules and regulations governing the production of milk and cream for sale in the city. There were present, Dr. Dagenais and LeBarge, of the Health Committee; Dr. Evans, of the Pure Milk League; J. Newton Drummond, of the Milk Dealers' Association; J. J. Riley and W. F. Stephen, of the Milk Shippers Association.

Mr. Stephen submitted the draft of regulations governing the production of milk and cream which had been approved by the Milk Shippers in an annual session last March. These regulations provide for a system of inspection of stables; dairies and herds of those shipping cream and milk to the city. The inspector to be a veterinary surgeon or a graduate of an Agricultural College, who is conversant with the conditions under which milk is produced. The standard shall be 3 p. c. butter fat and 8 p. c. solids not fat. They also call for a general cleaning up of stables and dairies, a liberal use of ice in cooling the milk, the delivery of the milk and cream to the railway station in first-class condition, the transportation to be as expeditious as possible, under the most favorable condition to keep the milk cool in summer, and from freezing in winter.

These regulations met with the approval of the conference and will likely form the basis of the regulations which will be adopted by the city authorities in the near future. The Health Committee are not yet decided whether the inspection shall be done by Inspectors appointed by the City or by the Provincial authorities. It is generally conceded that the adoption and carrying out of a simple list of regulations, such as these are, will do much to improve the milk and cream supply of the city. It will have the effect of cutting off those who supply a dirty and impure article, and we regret to say there are those who produce milk that comes under that class.—W. F. S.

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Inquiries and Answers

Readers of the paper are invited to submit questions on any phase of agriculture.

Feeding Grain to Dairy Cows
Will it pay to feed grain to my cows while upon pasture? My cows are not in the best of condition as our feed supply was none too plentiful during the past winter. I have a considerable quantity of barley and oats in my granary and I am not sure whether or not it will pay me to sell it or feed it to my milch cows.—E. P. HARRISON, G.

This will depend largely upon the condition of your pastures as well as upon how thin your cattle are. If your cows are in even fair condition and upon first class pasture, it is doubtful whether or not it will pay you to feed the grain to your cows. From what you say, however, we think it will pay you to feed at least a light ration of grain. A mixture of these two grains should contain more oats than barley if fed to your cows, as barley is claimed by some to have a drying-up tendency on milch cows. It is claimed by most of our experiment stations that it pays to feed a grain ration to cows even while on the best of pasture. It will be well for you to experiment with this for a while, which you will be certain whether or not it is profitable to feed this grain to your cattle.

Getting Rid of Ants

Would you kindly tell me how I can get rid of the common black ant—A. B. OXFORD, O.

There are several ways to rid one's premises of the black ant. Where they exist in colonies or hills, break the mound open with a spade and apply a liberal amount of common salt to the spot. This will discourage the ants and will be soon gone no more in that locality. Boiling water applied either alone or in connection with the salt is a more effective remedy as it will exterminate them on the spot, whereas the salt treatment simply causes them to migrate. There are several ways of combating these pests when they exist in the house or in the pantry. As fumigating would not be permissible where food was stored, a good way is to set out a dish of honey into which the ants will climb, then one can destroy the whole catch. Small twigs of cedar strewn about seems to discourage them about as well as anything.

Trimming Evergreens

Could you inform me through the columns of your paper what is the best time to trim my evergreen hedges? I have trimmed them at different seasons but fancy the spring pruning is the best.—F. H. GREY, G.

As to what is the best time for trimming evergreens is a disputed question. Some claim they get the best results from the spring pruning. Others say the fall trimming is the most satisfactory. With the average farmer, however, it is generally a case of trim your hedges when you have the time. If one has the choice of time, it would be best to trim them in August. By trimming them at this season, your hedge will retain its shape for several months of the year or until the new growth commences the following spring. Thus you have the most presentable hedge for the greatest part of the year from the one trimming. When trimmed in the spring, although it gives satisfaction in many cases, the hedge immediately starts to grow and is more or less ragged throughout the year or until trimmed again. The hedges should not be trimmed too closely, not closer than within an inch of what it was the previous year, so that each year a new wood is left on which buds form.

Harrowing Corn.

The practice of harrowing corn before and after it has come up is by no means common throughout the country. Some are afraid of tearing the corn out and doing more harm than good should they try the harrow. It is not so after the corn is sown. In no way can we cultivate quicker or to better advantage than by the constant use of the harrows on to the corn fields early, soon till it attains the height of three or four inches.

The harrowing should be done during the centre of the day. The sun will then have wilted the corn so that it will be tough and will not break off readily when struck by the harrow, besides, the small weeds will meet their finish when disturbed during the bright sunlight. Get the harrows on to the corn fields early and keep them there until the corn becomes too high. It is one of the best and one of the easiest methods of cultivation.

An Effective Remedy for Crows

Each year as the season advances corn growers are put to their wits end to stop the depredations caused by the crows, upon their corn. There are many ways of combating these destructive young crows. Some keep them in check by means of scarecrows of different kinds, ranging from string strung around the field, to bright colored flags, shining tin and dummy representatives of man. These are more or less effective depending upon the individuality of the crows and their past associations.

An effective remedy, however, that will meet all cases alike is the following: Procure from your druggist, a few grains of strychnine. With the point of a small knife, break open the small end of a few fresh hens eggs, place a portion of the strychnine in and mix up the contents of the eggs with the strychnine by means of a toothpick or other suitable instrument. Carefully seal up the opening with poison wax, or paste pieces of white paper over the holes. Before you retire at night, place these eggs in the corn field, staking them in order that they may be able to find their way to them. Before you have arisen the next morning, the crows will be on hand in the corn fields and will readily partake of the dainty that you have provided. Make an early trip to the field and you will find your enemies, the crows, stark and stiff upon the cornfield, or not far from it. Gather up the eggs that remain in order that stock may not be poisoned. The farmer has tried this remedy and knows whereof he speaks. It is an effective one, besides it is a great satisfaction to be able to walk out in the fields and quietly pick up the crows that before were so expasperating.

Selecting Gravel

As the season for performing statute labor is drawing near, and as many of our readers will be called upon to draw gravel, as their work in connection with this system, a few words upon the selection of gravel, taken from a recent bulletin of the Ontario Department entitled "Highway Improvement," may not be out of place.

"The best gravel pit for roadwork is clean, free from any excess of sand and clay, composed of stones of varying size up to and one-half inches in diameter, but just enough fine stuff to fill the voids, and make a compact mass. The appearance in the face of a pit is that of an almost solid mass of pebbles, from the size of marbles up to one and one-half inches in diameter. Gravel of the above description which stands upright in the pit, after the spring thaw, with no traces of slipping, is

Imp. Clydesdales (Stallions and Fillies) Hackney's, Welsh Ponies

I have now on hand Clydesdale Stallions and Fillies—Scotland prize-winners and champions; Hackney Fillies and Hackney Pony; also Welsh Ponies. There are no better animals, nor no better blood, than I can show. Will be sold cheap and on favorable terms.

A. AITCHISON, Guelph P.O. and Station 0-12-15

A Few Good Clydesdales and Hackneys

A very choice lot of Imported Clydesdale Stallions and Fillies, sired by such noted getters as Barston, Baron Mitchell, and Marcellus. In Hackney's I have to offer two big trappy handsome Stallions and two medium sized and, exceptually broody ones from three to five years of age. All show high straight action and combine the choicest bloodings. In Fillies I have a number of prize winners at Canada's leading shows, as well as a number of coming show ringers to offer. Prices will be right for the goods and suitable terms can be arranged. Come and see them.

W. E. BUTLER, Ingersoll, Ont. 0-12-15

JOHN CHAMBERS & SONS HOLDENBY, NORTHAMPTON, ENG.

We are shipping to our American branch another consignment of Shire Stallions. Mares and Fillies by Clydesdale sires recorded in Canada. All are of the best quality. We have Over 60 head in all. This lot includes several 4 and 5-year-olds, as well as a number of heavy mature Stallions, and a number of Mares and Fillies, in foal. Horses shown or imported by us were at the O. Far. Horse Breeds' Show, Toronto, Feb. 1908, 1st on a year old Stallion, and aged Stallion, and 4th and 5th aged Mares, 1st, 2nd and 4th year-old Fillies. We import good ones and all them worth the cost on a favorable basis. Let our waste be known to you.

C. K. GEARY, Can. Agent, St. Thomas, Ont.

REGISTER YOUR CLYDESDALES

To be eligible for registration, a graded Clydesdale filly must have four crosses by Clydesdale sires recorded in Canada. Stallions require five crosses. It will save trouble and expense to attend to this matter early. For application forms, etc., apply to Accountant, National Live Stock Records, Ottawa.

REGISTRAR, JOHN BRIGHT, Myrtle Station. SECRETARY-TREASURER, J. W. SANGSTER, Weekly Sun Office, 18 King St. West, Toronto 0-5-27

YORKSHIRES of Choicest Type and Breeding

I have on hand 75 broad sows of Princess Fane, Olanderella, Clara, Minnie, Lily Frost and Queen Bess strains. My stock boars are true to type and of richest breeding. For sale are a large number of sows bred and ready to breed, boars fit for service, and younger ones of both sexes. Pairs and trios not akin. 0-5-20

J. W. BOYLE, WOODSTOCK, ONT.

suitable for use on the road without any treatment.

River gravel is frequently better than pit gravel from the fact that an excess of clay or sand is washed out, and it is less water worn than lake gravel. Lake gravel, if not too coarse or shaly, makes a very good surface, but packs slowly.

The sound made by metal tires in passing over a gravel road should be continuously smooth and gritty. If the gritty sound is absent, the gravel contains too much earthy material. An interrupted, intermittent sound indicates too many large stones.

Dirty gravel is the chief thing to avoid. Gravel containing much clay or sand, or earthy materials, packs quickly, and makes a good dry weather road. But in the wet weather, or of spring and fall, it turns to mud and slush, and ruts readily. It wears out quickly. Avoid very fine gravel, and gravel that packs quickly. It lacks strength, and is usually dirty. It is the stone that is needed on the roads. There is enough clay and earth on the roads without hauling and paying for more. A road surface of stony material will wear, and keep its shape. But fine material becomes slushy, flattens out under traffic and the crown of the road is lost."

Road Making in Dundas Co.

Thos. A. Bailey, Reeve, Mountain Township

About a year ago our township purchased a grader and year later a crusher. Since then we have been working on our leading roads, across the Township. In constructing a road the first thing required is the draining of the road bed. The side drains should be opened so as to give the water a free flow to a good outlet. This is absolutely necessary, as no road can remain in good shape

if the water is allowed to stand and soak into the road-bed. The water will cause the road to spread and cut up in ruts and wheel tracks.

The next thing to be properly grade and crown the road, giving it sufficient crown to shed all water freely to the side drains. The grader is an excellent machine, and when in the competent hands of those who can be done with it. We use three teams on the grader and have never tried hauling it with a traction engine. We open a light track in the centre of the road to receive the broken stone. After the metal is put on we go up one side and down the other with the grader showing a small amount of earth up against it so as to keep the stone in place until it becomes consolidated by traffic. We have no road roller. Much better work can be done, however, with the aid of a good roller, as it crushes and consolidates the metal so that traffic does not move or push it out of place. We aim to crush all stone fine enough to pass through a two inch ring. Our wagons hold one yard and we drop a load in a place.

MAPLE CLIFF FARM

BREEDERS OF Clydesdale Horses and Teamwork Higs, Three Imported Stallions and one Hackney for Sale And a number of Young Boars fit for service.

R. REID & CO., Hintonburg Farm adjacent Ottawa. 0-17

LAND PLASTER

Ground extra fine and of the highest grade. Car lots or less. Write for prices.

TORONTO SALT WORKS TORONTO 6-20-07

The Canadian Dairyman AND Farming World

Published by The Rural Publishing Company, Limited.

1. THE CANADIAN DAIRYMAN AND FARMING WORLD is published every Wednesday. It is the official organ of the British Columbia, Manitoba, Eastern and Western Ontario and Bedford Districts (Quebec Dairyman's) Associations, of the Canadian Holstein Ayrshire, and Jersey Cattle Breeders' Associations.

2. SUBSCRIPTION PRICE, \$1.00 a year, strictly in advance. Great Britain, \$1.25 a year. For all countries except Canada and Great Britain, add 50c. for postage. A year's subscription free for a club of two new subscribers.

3. REMITTANCES should be made by Post Office or Money Order, or Longland's Letter. Postage stamps accepted for amounts less than \$1.00. On all checks add 25 cents for exchange if required at the bank.

4. CHANGE OF ADDRESS—when a change of address is ordered, both the old and the new addresses must be given.

5. ADVERTISING RATES quoted on application. Only orders up to the Friday preceding the following week's issue.

6. WE INVITE FARMERS to write us of any agricultural topic. We are always pleased to receive practical articles.

CIRCULATION STATEMENT

The paid-instances of subscriptions to The Canadian Dairyman and Farming World exceed 11,000. The actual circulation of each issue, including the circulation of paper sent subscribers who are but slightly in arrears, and sample copies, exceeds 10,000.

Secure detailed statements of the circulation of the paper, showing its distribution by countries and provinces, will be mailed free on request.

OUR PROTECTIVE POLICY

We want the readers of The Canadian Dairyman and Farming World to feel that they can deal with our advertisers with our assurance of the advertiser's reliability. We try to admit to our columns only the most reliable advertisers. Should any subscriber have cause to be dissatisfied with the treatment he receives from any of our advertisers, we will investigate the circumstances fully. Should we find reason to believe that any of our advertisers is dishonest, even in the slightest degree, we will discontinue immediately the advertising arrangements. Should the circumstances warrant, we will expose them through the columns of the paper. Thus we will not only protect our readers, but our reputable advertisers as well. It is unnecessary to entitle you to the benefits of this Protective Policy is that you include in all your letters to advertisers the words "I saw your ad. in The Canadian Dairyman and Farming World." Complaints should be sent to us as soon as possible after reason for dissatisfaction has been found.

THE CANADIAN DAIRYMAN AND FARMING WORLD
PETERBORO, ONT.

TORONTO OFFICE:
Room 308 Manning Chambers, 72 Queen
St. West, Toronto.

AN EFFICIENT WATER SUPPLY FOR THE FARM

Farmers are realizing more and more, the value of an adequate water supply. A few years ago, water obtained from any source, and by any method, no matter how laborious, had to suffice. Things have changed since then, however, and now the up-to-date farmer demands the best that can be had in regard to water and its distribution in the several departments of his farm.

It is a difficult matter to estimate the value of a good supply of water to the average farmer, particularly the man engaged in dairying. But more difficult is it to calculate the loss which one entails by doing without a proper water supply. Great as this loss is in many cases, farmers are blind to it. They would rather suffer this loss than undergo the outlay necessary to install a system which would give them every satisfaction.

Various systems of water supply

have their advocates throughout the country. In some instances it is a cistern that supplies the necessary water. Rams are used in other cases to force the water from a nearby spring to the places where it is required on the premises. Again, wells are made use of, and are very efficient where good ones can be located. Probably the most satisfactory solution of all to this question, and one that can be obtained in practically all localities, is the artesian well. The great drawback to this, however, is the uncertainty and risk that one must undertake in installing it. Instances are known where overflowing artesian wells have been obtained from drilling but a comparatively short distance. Others have been sunk hundreds of feet with little success, or, at best, an inadequate supply of water, and one that was difficult to pump to the desired elevation. Again, difficulty is often experienced in sinking the well to the necessary depth, owing to the interference of boulders and quick sand. Notwithstanding these several drawbacks, however, there are to-day hundreds of satisfied owners of artesian wells, many of the wells overflowing and requiring no outlay to pump the water.

Granted that we have the water at our disposal, the next problem is to put it in the several places about the farm where we would have it. Windmills are largely used as a means of raising the water to an elevation, from which the water can be drawn off to any desired spot. Where one has a gasoline engine, the pumping generally can be done at such times as the machinery is in use for other purposes. Where power is installed for running the cream separator, the water can often be pumped at the same time, with practically no added expense. But the details of elevating the water usually have to be worked out to suit the conditions of the particular case to be dealt with.

Where water systems are being overhauled, or new ones installed, the question of placing the water into the house, as well as the barn, should be considered. In years gone by we have been inclined to save expense on all things that we could possibly do without. As a result of this, we find but few farm houses in which the water used is taken into the house by means of mechanical power. This should not be. While putting in a system to supply our barns, we can, in many cases, have the same system supply our houses as well, with but little added expense. Once we have the water installed in our houses, it is a never-ending saver of labor and one that we would not do without for many times the cost of installation. Money invested in an adequate water supply for both our houses and our barns, will pay large dividends,—much larger than can be obtained from investing it in stocks, or placing it in the savings bank. Besides, one has the satisfaction of directing his own investments as well as enjoying the fruits that come therefrom.

MONEY LOST IN IMPLEMENTS

Notwithstanding all that has been said and is said about the usefulness and benefit of farm machinery, no part of the farm equipment suffers more from neglect. It is the exception to find a farm with proper and adequate accommodation for housing implements. Farmers will not plow a field and leave it in the farmer's till it is needed elsewhere, which may be the next spring or fall. In the meantime the plow has been exposed to all kinds of weather and its value depreciated. The same thing applies to other implements, and to a greater degree. There is not so much about a plow that will spoil as there is about a binder, a mower, a sulky rake, etc. And yet these latter are often left standing in the field from one season to another or stored in some leaky shed, where conditions are little better.

It is safe to say that the life of the average farm implement is not half what it should be. It would be ten years instead of five if proper care were exercised. The money-making farmer of to-day is the one who looks after his farm machinery and gets full value out of his investment in this line. A little figuring will show this. In 1908 Tom Smith and James Brown buy self-binders at \$125 each. Tom Smith is, a careless fellow. Nuts get loose and are not tightened, and canvas gets wet from exposure to bad weather; after harvest, because of more urgent matters, the machine is left in the field awaiting a convenient time to take it in. In five years his binder will not do the work and another \$125 has to be invested in a new one. James Brown is more careful. Every part of the binder is looked over after, and when not in use is carefully housed in the machine barn. His machine lasts five years longer. It has cost little time or expense to do this and what he has saved is clear gain. The treatment of the two as applied to the binder applies to all the machinery on the farm and the loss of the one and the gain of the other are increased in proportion.

How long should a well-made farm implement last? Everything depends upon the man who owns it. Ten years should be the minimum. There are farmers in Canada to-day using implements that have been in continuous use for a quarter of a century. The possibilities for saving in this direction are almost unlimited. Often an implement is sacrificed to a better and more up-to-date one not that it no longer does the work for which it was intended. Barring accident the average farm implement should do duty many years longer than it is now doing. A trip to some farm yards we know of will prove this. Cultivators, harrows, plows, rakes and all kinds of implements are scattered about in confusion, a prey to the weather and the winds. Had they been placed in a building constructed for the pur-

pose their life would have been at least doubled and the farmer's annual expenditures correspondingly increased.

The lack of care of farm machinery is said to be good for the manufacturer and increases trade. No doubt the manufacturer profits by it, but that he rejoices in the conditions that bring it about is doubtful. A manufacturer's goods are often condemned as of no use because some neglectful farmer has not given them a proper chance. In this way a manufacturer often loses as much as he gains by this increased demand for machinery. It would be better for all concerned if each implement were given proper care and the farmer's gain would be increased manifold.

It is as a time and labor saver that the modern farm implement is of the greatest value. Many farmers fail to realize this when buying an implement. The initial outlay may seem large. But if the time and labor saved by its intelligent use are taken into account, the investment can always be figured out as a profitable one. A good man on a farm to-day will cost, wages and board included, upwards of \$300 a year. This will pay the interest on a large outlay for farm implements. Of course a certain amount of help is required no matter how well supplied a farm may be with implements. But take away the implements and the cost of labor would be greatly increased. Such is the power of the modern farm implement to save valuable time and to lessen expensive labor.

Now, that summer has come, and the season of growth is here, the everlasting fight against weeds must be resumed in earnest. The scarcity of labor adds considerable to the difficulty of solving this vexatious problem. Where the weeds were allowed to seed last fall, there is a luxuriant growth this spring to remind us of neglected work last season. Now, that we have entered upon another season, it would be well to take steps to prevent the increase of these enemies of agriculture. If we cannot nip them in the younger stage, then by all means see that they are not allowed to go to seed. It does not take much time to nip the tall weeds off with the scythe ere they have had time to ripen. A little time judiciously spent in this way will do much towards keeping the weeds in check, and as most weeds seed profusely, time spent in destroying the parent weed will save many of the hours of labor that will be required to accomplish the same result later on.

The joke is on us, and we do not like it. We have been telling our readers lately that we exclude from our columns all forms of objectionable advertising. Among such we included advertisements of tobacco. For some time we have been trying to break a contract to publish a tobacco advertisement in The Dairy-

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man and Farming World that had been accepted before the present management took control. We have been unsuccessful. The advertiser insists upon the contract being fulfilled. This is published in order that our readers may know why this advertisement appears elsewhere in our columns.

OUR FREE RURAL DELIVERY DEBATING SOCIETY

Interested in Free Delivery

Editor.—The Dairyman and Farming World—I have been much interested in the Free Rural Mail Delivery articles that have appeared in your paper and hope that you will keep at it until we have the system in Canada. I think that Postmaster General Lemieux has given the rate of one cent on letters to be delivered in cities, where they now have free delivery once and twice a day. This one cent reduction is a case of legislation in favor of the cities as against the country, and I, for one, protest against such legislation. If we are going to have the one cent rate on drop letters in cities, why not have it in all parts of Canada? This, however, is in keeping with the bungling of papers and magazines between Canada and the United States.—F. Van de Bogert, Lennox and Addington Co., Ont.

Bound to Come

The Dairyman and Farming World is to be commended on the stand it has taken with regard to the Free Rural Mail Delivery question. Free Rural Mail Delivery is something that the farmers of this district are demanding and it is something that we are bound to have before long. It is a convenience in towns and cities, where people are within a few blocks of a post office. It is an absolute necessity with the farmer.

The farmer is not a man who works for wages. He is a man who buys and sells, or in other words, a business man. To make his business a success, he must keep in close touch with the outside world, and be able to tell at any time what demand there is for his produce, and what prices they will bring on the market. The city business man receives his mail from three to six times a day. Why should the country business man have to be content with his mail once or twice a week, and then have to drive from two to five miles for it?

It will no doubt cost a little more were we to have Rural Free Delivery, but it will prove a profitable investment in the end. Not only will there be an actual money saving, in the time formerly occupied in going for the mail every few days, and in many ways in which it means money to a farmer through knowing the condition of the market, but it is worth something when one comes in at night, tired from the day's work, to be able to sit down and read the morning paper, or possibly a letter from a distant friend, instead of having either to go without, or spend an hour going for it.

In our neighborhood, it would be a simple matter to lay out a route of about 20 miles, which would reach from 75 to 100 farmers. The majority of these farmers now receive their mail only once or twice a week, and have to drive from two to five miles to get it. A great saving would be effected were we to have the mail delivered right to our doors. The rural telephone is an established fact. The farmers have recognized

the need of it, and have set about securing it for themselves. With the Rural Free Delivery, however, it is different. This is something which must be secured from the government, and the sooner the government realizes that we want it, the sooner we will get it. I am glad to see The Canadian Dairyman and Farming World has taken hold of this matter so vigorously, and wish you every success.—C. H. Frederick, Victoria Co., Ont.

Making Extra Money

It is easy to make a little extra money if spare moments are used to good advantage. Many of our readers have found this to be true, and are making money easily by obtaining new subscriptions to The Canadian Dairyman and Farming World. Mr. E. J. Duff, Northumberland County, sent us thirty-six new subscriptions this week.

Mr. Duff says: "Enclosed find 36 new subscriptions, with money order to cover same. I intend to send 14 more subscriptions, and thereby win the cash prize of \$35."

Even if Mr. Duff does not send the remaining subscriptions, he has made \$18.

This is not the first prize Mr. Duff has won by working for The Canadian Dairyman and Farming World. He certainly is a "hustler." Mr. A. Sweet, Huntingdon County, Quebec, has this week won a Yorkshire boar by sending us eight new subscriptions.

Don't you think that it would pay you to do a little hustling, and turn your spare time into cash?

A very encouraging letter reached us this week from Mr. Walter Bowron, Wentworth County. Mr. Bowron says: "I have been reading your journal but one month, and have noticed with much satisfaction that it is directed with intelligence and ability and that it strenuously defends the rights of the farmer, and, at the same time, endeavors to promote the best interests of the country. I believe that it will continue to do much good."

Mr. Charles Lackington, Peterboro County, says: "I read your paper and it is fine. I like very much to be reading it. I think that I will be able to send you some new subscriptions."

Mr. William J. Bald, Perth County, says: "I am now receiving The Canadian Dairyman and Farming World, and consider it to be a valuable paper."

Mr. T. Smith, Alberta, says: "Please send me a copy of your paper. We are looking for one which will be helpful to the patrons of our creamery. Your paper was recommended to me."

Mr. Amos Watson, Middlesex County, says: "It is only about two weeks since I first saw a copy of your paper, and I think it is one which every farmer should take."

Mr. R. A. Foley, Rockfield, Ont., who recently won a setting of eggs, says: "I received the eggs from the party named in your letter. Everything O. K."

Mr. George Preston, York County, says: "Enclosed find my renewal to The Canadian Dairyman and Farming World. I cannot afford to lose one copy of your paper. Since the change it has been much improved. I consider it one of the cheapest and best farm papers in Canada."

I live six miles east of Hamilton, on the lake shore, and we have not even a post office, the farmers here not having been able to get one. The rural delivery service would be just the thing we want. If some more of the leading papers would also take up the good work, it would be some.—Walter Bowron, Wentworth Co., Ont.



HELD BY THE ENEMY

Old foggy ways are the enemy of progress and thrift. Old cans and pans and inferior skimming methods keep a tight hold of the smaller butter-fat globules. . . . You lose that way.

De Laval Cream Separators

FORCE TO FREEDOM ALL THE BUTTER-FAT PARTICLES AND ROUT THE ENEMY

—The—
De Laval Separator Co.
173-177 William St. MONTREAL

Money or Pure Bred Stock

Premiums Offered by The Canadian Dairyman and Farming World

Many energetic persons during the past year have obtained one or more of the following premiums:

Do you not think that a little hustling on your part would well repay you?

Why not commence work now—to-day?

READ THIS OFFER CAREFULLY:

- PURE BRED STOCK**
- We will give a setting of eggs, of any of the standard varieties of fowl, for only two new subscribers.
 - A pure bred pig, of any of the standard breeds, from six to eight weeks old, with pedigree for registration, for only seven new subscribers, at one dollar a year.
 - A pure bred Ayrshire, or Jersey bull or heifer calf, with pedigree for registration, for only thirty new subscribers, at one dollar a year.
 - A pure-bred Holstein heifer calf for forty-five new subscribers.
- CASH PRIZES**
- If you do not desire to take advantage of any of the foregoing offers, we will give the following cash prizes:
 - \$1,500 for only 1,000 new subscribers secured within a year from the time you start work, at only one dollar a year.
 - \$1,200 for 850 new subscribers.
 - \$1,000 for 750 new subscribers.
 - \$900 for 700 new subscribers.
 - \$700 for 550 new subscribers.
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The Dairyman and Farming World
PETERBORO, ONT.

Creamery Department

Butter Makers are invited to send contributions to this department, to ask questions on matters relating to butter making and to suggest subjects for discussion. Address your letters to the Creamery Department.

Valuable Experimental Work

(Concluded from last week.)

It readily deteriorated in flavor. Of course the milk, and frequently the whey, was old and this may have had much to do with the keeping quality of the butter. However, it suggests the necessity for a thorough investigation of the whole subject and this we purpose doing during the season of 1908, under regular factory conditions. It would be wisdom on the part of factorymen to await these results.

Another thing we learned during our experiments was that by increasing the speed of the separator slightly you can separate, and separate efficiently, fully 60 per cent. more of whey than the machine is rated to separate of milk, that is, a machine with a rated capacity of 3,000 lbs. will readily separate 5,000 lbs. of whey. Of course, this calls for a cover with a larger inlet tube.

MAKING OF CHEESE FROM RICH AND POOR MILK

During the session just closed we were afforded a splendid opportunity of investigating this point, as we were able to obtain milks varying in fat content from 3 to 4 per cent. On several occasions we put like quantities of different grades of milk into different vats and made them up separately. When the cheese were made the yields differed so much that when they were placed side by side they resembled a flight of stairs. Let us give an example, which could be multiplied many times if space afforded:

Lbs. Milk	Fat	Lbs. Cheese	Fat in Whey
125	3.0	27.0	2
125	3.4	29.5	2
125	3.8	35.5	2

Furthermore, there was a marked difference in quality, the cheese from the richer milk being quite superior to that from the poorer. The lesson is obvious. We should certainly pay in cheese factories according to quality and not by the peeling system.

This work was conducted by an instructor in cheese making, Mr. G. G. Puhlow and, needless to say, was carefully and skillfully done.

A COMMON AND UNSUSPECTED CAUSE OF CREAM TESTING LOW IN THE FALL WHEN THE MILK IS RICH

One other investigation of considerable interest to creamery-men.

While it is well known that changing the cream screw or the speed of feed, or a difference in the richness of the milk, will alter the richness of the cream, these do not furnish a reason for the cream supplied to our cream-gathering creameries so commonly testing lower during the fall of the year than during the summer, despite the fact that the milk has increased in richness.

Under the direction of our instructor in butter-making, Mr. Stonehouse, we made an investigation of this subject, with the result that we fully satisfied ourselves that this apparent anomaly is really due to the partial cooling of the milk, during the

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cool weather of this season of the year, before it is put through the hand separator. The following data will serve to illustrate this point:

Machine	Temp.	Milk	Cream	Sk. Milk	Test of
A.	80	27	.10		
B.	95	31	.10		
	80	35	.08		
C.	95	48	.06		
	85	40	.025		
	95	43	.025		

The different tests represent different makes of machines.

In all cases we took the same milk and divided it, separating one portion at the lower temperature and one at the higher temperature, as indicated.

The explanation of the foregoing no doubt lies in the fact that as the milk cools it becomes more viscous or syrupy and its consistency and as a result does not flow out the skim milk tubes so readily, thus causing a larger percentage to be taken as cream.

Considerable other work was done which may be taken up a little later date.—J. W. Mitchell, Supt.

Butter Scoring Contest

The Pennsylvania State College has established a butter scoring contest. The first contest this season, held in April last shows an improvement over a year ago. The score ranged from 70 to 94 points. One lot of dairy butter scored 93. The average per cent. of moisture was 12.57 ranging from 10 to 15 per cent.

The most common faults were old milk and cream. Some samples had a decided butter color flavor, others were a little defective in body, soft and lacking the proper grain, due mostly to high churning temperatures. Some garlic flavor was noticeable.

Twenty-two tubs were entered in the contest, which is starting this season with increasing interest.

The World's First Creamery Butter Maker

To Mr. M. VanDeusen belongs the honor of being the first creamery butter maker in the world. In a recent issue of Hoard's Dairyman is given an interesting sketch of his career. He is now eighty-six years old and was born at Kinderhook, New York. His earlier years were spent in acquiring an education and in familiarizing himself with the details of successful dairying on his father's farm.

In 1868 he went to Manchester, Iowa, where he engaged in buying and selling butter on the market. In 1872 he returned east but was shortly afterwards engaged as butter-maker for a company that was formed at Manchester, to manufacture butter from cream brought in by farmers in the surrounding district.

This first creamery building in the world was erected at Spring Branch three and one-half miles from Manchester, Iowa, and was ready for business on April 1st, 1872. It contained only two rooms, one of which was utilized for the storing of milk in cans, the other contained a churn and Bennett's butter worker.

In this building Mr. VanDeusen made a superior article of butter, which commanded the highest price on the New York market. Success crowned his efforts and through his influence creameries were organized in all the surrounding states. During the Centennial Exposition in 1876, butter from the Spring Branch Creamery took the highest award and was known on the New York and Chicago markets as "Premium." Such is the beginning of an in-

EMPIRE

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Easily and Thoroughly Cleaned Skimming Devices

To keep the skimming devices perfectly clean is of first importance, otherwise the quality of the cream suffers—profits diminish.

The majority of skimming devices are hard to clean. Some next to impossible to clean perfectly. But the Empire cones are easier than any others to keep clean and sweet.

They are of sheet steel, six in number, pressed into shape after fourteen distinct operations. They are accurate to a fraction, fit to a nicety—and it's utterly impossible to put them together wrong.

Light and nice to handle. The surfaces are smooth as china, with no cracks, joint, seam or rivet to catch the albumen and impurities of the milk which stick like glue if given a chance.

Nothing could be simpler than to take our brush and wash out these cones, as shown in picture. Inside and outside, every part readily accessible—easier to clean the Empire cones thoroughly than

to half-clean any other skimming devices. Yes! We will gladly send you this Frictionless Empire, with its easiest cleaned skimming devices, its lighter bowl, its simpler and smoother running mechanism, its frictionless bearings, and guaranteed to skim as close as any other Separator made, for free trial in your own dairy.

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overcomes every opposition that can be raised against the use of a Check Whey Pump. It is guaranteed to work perfectly under all conditions, cannot clog. Check does not come in contact with the whey or any part of the mechanism of the Pump, which is very simple and cannot get out of order.

These Pumps have been in constant use since 1905, giving perfect satisfaction although subjected to most severe tests.

WILLIAM LOUVER, Pres. Prince of Wales Cheese Factory, Campbellford, Ont., writes us July 1, 1907:—"The Whey Pump that you ordered from me is giving good satisfaction. You will find enclosed check to balance one and one half of bill for Pump."

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PETERBOROUGH, ONT.

dusty that is as important a factor in dairying in the United States as the cheese factory is in Canada.

A creamery association in Alberta declared a dividend of 5 per cent. on last year's operations.

Few are made rich and many poor in a mining country. In a dairying country few are made poor and many rich.

At the recent National Creamery Butter Makers' Convention at St. Pauls, Minn., gathered cream butter scored 96 points strictly on its merits from a commercial standpoint. It is needless to say that this butter was not made from cream kept a week on the farm and taken from a separator or twice a week. If properly managed, from the man who milks the cows, and cares for the cream, from the driver who takes it to the creamery, to the butter-maker, as good butter should be made from gathered cream from whole milk delivered to a creamery. Dairy men are gradually learning this.

Cheese

Makers are invited to send contributions to this department, to ask questions on matters relating to cheese making and to suggest subjects for discussion. Address your letters to the Cheese Department.

The Action

Keep

In the 24' consist valuable work the effect of the action effect of ru as follows:

Milk kept or may require to coagulate the same temperature of time in 8 hours at to coagulate acid, while same temperature of time in a later in 19 ml of acid.

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The Dairy made war (sanitary stan to keep their paragraph gei son why they In taking tion of past writer felt th the means to to some ext coming rusty ed properly a it should go paratively so will not take quickly as wh unheated and that all the in milk cans

It gives that smooth, firm, richness and good colour, only possible with full-flavoured It dissolves e and is not in the whey. By bag or b at all grocers

Cheese Department

Makers are invited to send contributions to this department, to ask questions on matters relating to cheesemaking and to suggest subjects for discussion. Address your letters to The Cheese Maker's Department.

The Action of Rennet on Milk Kept in Rusty Cans

In the 24th Annual Report of Wisconsin Experimental Station some valuable work has been done regarding the effect of different metals on the action of rennet in milk. The effect of rusty cans is summed up as follows:

Milk kept over night in very rusty cans may require from 1 to 40 minutes longer to coagulate than milk that is kept at the same temperature, the same length of time in cans free from rust. It was shown that milk placed in a rusty can for 8 hours at 88 F. required 25 minutes to coagulate and contained .71 per cent of acid, while the same milk kept at the same temperature for the same length of time in a vessel free from rust coagulated in 15 minutes and had .36 per cent of acid.

The reason for a slow or retarded action of rennet which cheese-makers often experience may possibly be attributed to some extent at least upon the action of acid on iron in rusty cans, and not entirely to the amount of acid salts present in the milk as was formerly supposed. Milk with more than 2 per cent of acid is considered unfit to be made into cheese. At the same time it may be quite possible to accept from patrons, milk which really has developed more than 2 per cent acidity but which cannot be rejected by the acidimeter because the acid is partly neutralized by the iron of the can.

This is an important matter. To make the highest quality of cheese and butter it is necessary to have all dairy utensils in good condition and free from rust. The quality of the milk depends a great deal more than is generally supposed on the condition of the cans in which it is stored and brought to the factory. The amount of influence of the rusty iron of the can on the milk will depend largely on the temperature, the length of time kept in the can, and the amount of rusty surface of the can to which the milk is exposed.

The Dairy Instructors have always made war on rusty cans from a sanitary standpoint. It is impossible to keep them clean and the above paragraph gives another strong reason why they should be discarded.

In taking up last year the question of pasteurizing the whey the writer felt that this would be one of the means to the end of preventing to some extent at least of cans becoming rusty. When whey is heated properly and the tanks kept clean it should go home in the cans comparatively sweet, and in that case will not take the tin off nearly so quickly as when the whey is returned unheated and sour. I still maintain that all the whey which is returned in milk cans should be from tanks

which are kept perfectly clean and the whey pasteurized in order to keep it sweet. The pasteurizing the whey, however, does not mean that the tanks do not require any further cleaning. They will require cleaning just the same, but will be found very much easier to clean and keep clean.

It is hoped that the large number of factories that have adopted this year the system of pasteurizing the whey will do the work properly so that a fair trial may be given the system. Heating to temperature below 160 or 165 degrees and heating two or three days a week will not give proper results. The heating must be done at the proper temperature 160 to 165 degrees and done every day at the proper time and that is before the whey has started to take on any more acid than what it had at dipping and the tanks must be kept clean.—Frank Herras, Chief Dairy Instructor, Western Ontario.

Criticism of Director's Report Provincial Laboratory, Quebec

(Continued from last week.)

We must remember that rennet serves as an excellent food for bacteria, and experiments have shown that in preserved rennet the bacteria increased in 48 hours from 11,000 to 111 million under favorable conditions. The salt in the rennet has a very weak antiseptic action and is by no means used with the intention of preserving the rennet, but is used on account of its extractive action.

On page 311 the Director says: "The nature and the quantity of the preservatives used may have an influence on the manner in which the rennet acts and the curd it produces."

The preservatives used, however, such as boric acid, are so much diluted, as soon as they are placed into the milk that their influence is of no account. Should rennet contain 5 per cent boric acid it would have no effect on the strength of the rennet, when used in the usual dilution of 3 ounces rennet to 1,000 lbs of milk.

Should rennet contain 5 per cent boric acid (a more than saturated solution) then 3 ounces of this rennet will contain 15 grammes of boric acid, or about 1-10 lbs., and this small quantity is brought in 1,000 lbs. of milk, so that the boric acid is diluted to .001 per cent.

Let us now direct our attention to the bacteriological results dealt with in this report. On page 311 is the following statement:

"The membranes left exposed to the air, sun, wind, become covered with dust, and germs of all kinds and even with mould."

"The membranes, however, are so quickly dried out that bacteria and moulds cannot grow on them; but if the condition of affairs existed as stated by the Director in the above sentence, then the putrifying bacteria would very quickly change the stomachs into a decomposing mass.

On page 312 the Director, referring to Table V, writes:

"As a result of this examination (bacteriological) I deemed it right to condemn six of these Rennets as containing the germs of mould in hurtful quantity. After the above statement, no one will be surprised at the fact that rennet holds germs of mould and other micro-organisms."

If we presume that the Director means by "germs" of mould, spores of mould, because the term germs is usually synonymous with bacteria.

Table V, page 311 gives the detail of the samples of rennet in detail, and next to them long lines of figures, sufficient to scare every reader. According to the Director



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The mine owner gets his gold mixed with rock and combined with other metals. He gets out all the gold and then makes in addition what he can from the lead and silver, the "by-products."

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Windsor Cheese Salt

It gives that smooth, firm, rich, absolutely pure, good colour to cheese, only possible with pure full-flavoured salt. It dissolves evenly—and it is not carried off in the whey. By bag or barrel—at all grocers'. 119

the worst sample is No. 7 from Gillmore Bros., containing 2,240,000 bacteria per c.c. and moulds too numerous to be counted. It is not really clear how it is possible to count the bacteria on a plate, when on the same plate the moulds are uncountable. If the plate was overgrown with mould it does not necessarily mean that the original number of spores in the plate was very large, for every bacteriologist knows that a few mould spores can easily grow over a whole plate in a few days. In the second place it makes a strange impression to find reported the number of colonies of bacteria per c. c. of the original rennet and the number of mould colonies on the whole plate, of which the area is not given, nor the dilution of the rennet used.

There were 2 million bacteria per c. c. of rennet, and it would have been interesting to know what species were present, as no information is given, how far they were injurious.

But why does the Director condemn these samples of rennet on account of the presence of moulds? He writes down himself the following statement, page 312: "I deem it right to condemn six of these Rennets as containing the germs of moulds in hurtful quantity" and on page 313: "The spores of mould should not exist in rennet intended for Cheddar. I am not yet in a position from the standpoint of the manufacturing practice to state to what extent their bad effect influences the making, keeping, ripening and taste of Cheddar (Bitterness, fruity, or fishy taste etc)," and on page 323: "After making cheese with rennet containing

mould germs and sound Rennets, it will be seen, whether it is prudent to accept, these Rennets with mould spores."

These statements are more or less contradictory, and surely when he confesses ignorance of the effect of mould in rennet used for making Cheddar cheese, it is pertinent to ask why he condemns the rennet? and again he evidently thinks that bitterness, fruity and fishy tastes are produced by moulds.

Every maker of Cheddar cheese knows that it is very difficult for mould to grow in the interior of hard cheeses. They develop especially on the outside surface, are caused by aerial contamination, and the ensuing growth is favored by a moist atmosphere. That their influence is without any result is best shown in the Dutch Gouda Cheese, where the number of moulds growing on the surface is so enormous that every other day, this layer must be scraped off with a knife; yet in the Gouda Cheese had smells and tastes produced by moulds, are unknown. The conclusion is that the bacterial content of rennet is of slight or no influence on the character of the cheese. Further, that nobody has the right to condemn a product on such weak experimental evidence as the Director has done in his report, and which gives the public an absolutely wrong view of the real situation, and may injure the reputation of the manufacturers of the condensed rennet.

(Continued next week.)

Clean up the cheese factory yard.

Our Farm Homes

THE importance of a home it is impossible to exaggerate. What is liberty without it? What is education in schools without it? The greatness of no nation can be secure that is not based upon a pure home life.—Arnold Toynbee.

The Major's Daughter

The blue waves lashed musically along the beach at Hull, leaving the long stretches of white sands gemed with sparkling shells in a sinuous sloping roadway as far as the eye could reach. The boats were coming in from Boston, their upper decks covered with striped awnings and crowded with humanity anxious to escape the city's heat for the night in the hotels and cottages at Hull or at Nantasket Beach.

The verandas of the hotel Pemberton at Hull held a gay assemblage of summer pleasure seekers. Some of them were engaged in playing games and others strolled to and fro on the verandas, listening to the strains of the orchestra through the open windows of the ballroom.

"Only another day of it," sighed Harold Robertson, "and then I go back to my dingy office for another year. I shan't see you any more, for I know your father would forbid me to visit you."

"Papa is not so hard-hearted," said the girl to whom the young man was speaking, and she swung her broad-brimmed sailor hat back and forth by its ribbons. "He was once poor himself and ought not to dislike you for being a—beginner in your profession."

"Perhaps he ought not, but such men—successful, rich men like he is always want their daughters to marry well-to-do men."

The girl's pretty face held a pouting expression and her large blue eyes filled. "Well, if you don't love me any more than to be afraid of me any more than to be afraid to go to him manfully and—ask him for me, then your love isn't worth much."

"Don't talk that way, Dorothea," burst out the young man, and for an instant his handsome face was clouded. "You know you are sure of my love. You know, moreover, that even when you do go and marry the man your mother seems to favor so much, because of his gigantic prospects, I shall be just as true to you as ever; I have never loved before and I shall never love again."

"I know it, dear," the girl answered huskily. "Let's go down to the beach, Mamma will be here in a minute and whisk me away to meet him. I hate him; I detest him. Do you suppose I shall ever marry him when—when my whole heart is yours? The poorer you are the more I care for you. The face of the young man shone with joy as he led her down the steps to the beach. For a long time they walked on the sands without speaking. He broke the silence as he took her slender, white hand to

help her over a piece of driftwood. "Yes, I am sure of defeat," he said, "but I shall go to him to-morrow and tell him the truth. He cannot blame me for loving you, and even if he kicks me out of the house—"

"Papa will treat you like a gentleman," interrupted the girl. "You need not be afraid of that. He has never treated any human being rudely. He—he may refuse; I do hope he won't—but he will not make you feel bad. He was a soldier, you know, and reached the rank of Major."

"But he was on the Union side while my father fought on the other."

"That will make no difference," replied the girl; "he always admired the courage of the southern soldiers. Did I ever tell you? He has the portrait of a southern soldier in our library at home. It was a man who dragged him away from the track of an exploding shell when my father lay wounded, almost unconscious, on the field at Chickamauga. They did not exchange any words, for papa fainted immediately after he was taken to a place of safety. His rescuer dropped the photograph near him and the men, thinking that it belonged to Papa, put it into his pocket before taking him to the hospital. My father came across it one day while he was convalescing and recognized it as the picture of his rescuer. He carried it with him through the rest of the war hoping to identify the man by it and express his gratitude to him. But he never heard of him and since the war he has had the picture made in oil, and it has become one of Papa's treasures. It is the first of our paintings which he shows to visitors, and he always relates the story with emotion; so you see my father is not without a heart, and has no prejudice against the south."

"I am glad to hear what you have told me," said Robertson, "for I can approach him more easily."

"Ah, there is Mamma on the veranda, and she is signalling to me," cried the girl in a tone of disappointment. "Now, it will be supper, and then I shall have to listen to that fellow's forced compliments through the evening."

"I don't wish any harm to him, but I can't help being glad of your dislike to him," said her companion, with a dry laugh. "I suppose it is natural. But can't I get a word with you to-night in the ball-room?"

"No," if you did, then Mamma would not let me see you in the morning before you go, and I should die of disappointment if I did not have that opportunity."

"All right, then; your mother is

coming to meet us. I presume I shall have to talk to the old maid sister of my employer. He told me to look out for her. That's what it is to be poor."

Mrs. Huntington was now within a few yards of them.

"I believe Mamma knows I—I care for you," said Dorothea, in a low tone.

"Why do you think so?"

"From the way she talks about you. Then, a woman can always read another woman's heart. She would favor more than Papa, for she once had an unhappy love affair herself."

"Where have you young people been?" asked the old lady. "I have been all around the house looking for you. I had no idea, Dorothea, that you would come on the beach in those thin shoes so late in the afternoon. Can't you feel how chilly it has become?"

"I have only been here a few minutes, Mamma," said the girl. "Mr. Robertson and I have been for the greater part of the afternoon on the veranda, listening to the music."

"Well, I'm glad of it; it doesn't look well for couples to seem to be anxious to be alone together, unless they are known to be engaged."

"We can let them know it then," said Dorothea, suddenly, "for we are. It amounts to the same thing."

"Oh!" cried Mrs. Huntington, drawing back, and stopping in sheer astonishment. Even the young man was surprised at the girl's unexpected announcement, and her pale, determined face, as she turned abruptly on her mother.

"Yes, we have promised to love each other for all time, Mamma, and I am tired of keeping it from you, and having you thrust me on that Mr. Stempel. This is the last night I—"

Harold Robertson can spend at Hull this season, and I want to talk to him this evening undisturbed by anyone else."

"Well, I never," gasped Mrs. Huntington, dropping into a coloumalism, in her astonishment.

"Don't forget what you once told me about how you never forgave your parents for interfering in your heart affair, and remember that I am now placed as you were then. I love Harold, and I never shall care for anyone else. I'd rather be dead than marry a man that I don't love."

Mrs. Huntington was speechless. She got out her handkerchief, and began to wipe her eyes.

"I hope you won't be hard on us, Mrs. Huntington," began the young man, but he went no further, for Mrs. Huntington had begun to speak.

"It is your father, Dorothea," she whispered, "the seen so anxious for you to like Mr. Stempel. I can't say I would oppose Mr. Robertson, for I have liked him from the first, and—I and I have suspected that you were beginning to love each other. But Mr. Robertson would never give his consent. He believes in fortune playing a part in such matters."

"There is nothing left for me to do, but to go to him like a man, and propose for Dorothea's hand. If he refuses, I shall have done all that there was to do," said the young man, hesitatingly.

Mrs. Huntington was still wiping her eyes. "When will you see him?" she asked.

"To-morrow, as soon as I can reach him after driving in the city."

"You had better go to our house about ten in the morning, then," suggested Mrs. Huntington. "I don't like to think of him refusing you, and he will be in a better humor then; he usually is in the morning."

"Mamma, you might write him a note; it would serve to introduce Harold, and pave the way for what he has to say. You know it will be an awfully hard thing to do. Papa is so serious and gruff-looking."

"I—I never could do that," replied Mrs. Huntington, "but if you wish, Mr. Robertson, you may tell him I have no serious objections."

"Thank you, you are very kind," said the young man, and the trio went up the steps to the veranda, which was thronged with promenaders.

"Am I to see him to-night, Mamma?" asked the girl in a whisper.

"I suppose so, darling," replied Mrs. Huntington; "I may be doing very wrong, but I can't help myself; I was young myself once."

So that night chaperoned by good Mrs. Huntington, Harold Robertson sat on the veranda in the moonlight, with Dorothea, while Mr. Richard Stempel, and his aunt, Mr. Wilson, passed dolefully, even angrily to and fro in their vicinity. And it was ten o'clock before Mrs. Huntington proposed retiring.

The next morning after bidding Dorothea good-bye on the wharf, Harold Robertson took the boat for Boston. Somehow the kindness of Dorothea's mother had made him look forward to a meeting with Major Huntington more courageously than he had expected, so taking a cab when the city was reached, he drove direct to his house on Beacon street.

"Is Major Huntington at home?" he asked the servant in livery.

"Yes," replied the man.

Harold sat down in the library. "Presumption, presumption," he said to himself, as he looked about the room at the exquisite furniture, rare paintings and bric-a-brac. "He will think I have lost my mind; well, I have, and my heart, also; so here goes."

There was a step in the carpeted hall. Harold's heart sank like a plummet. It was only the servant returning to ask: "Is the business very important, sir?"

"Very important," replied Harold. In a moment the Major entered.

"Pardon me for keeping you waiting, sir," he said, as he grasped Harold's hand with the cordiality of a man of the world, desiring to make a visitor feel at home under his roof. "My servant informs me that your business is urgent. I was just starting in to dictate a letter to my stenographer, but she can wait."

"I am very sorry to disturb you," stammered the young man. "The fact is that my call is on such a—delicate, personal matter, and I shall have to depend so much on your indulgence, that perhaps it would be better to wait till you can give me more of your time."

"Oh, no, let it out, now that you are here," said Major Huntington, genially. "I've got the day before me."

"I think I may say that I come to you, with the approval of your wife," began Harold. "She said that I might say to you that she had no objections to your granting my request. The truth is, I had the honor of meeting your daughter, Miss Huntington, at Hull last year, and again this season. We have seen a good deal of each other, and—" The young man could go no further.

"You have fallen in love with her," suggested the Major.

"Yes, and she assures me that my regard is reciprocated. I have come to beg your permission to allow me to marry her."

The face of the major had flushed with vexation.

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you, Mr. —," the old gentleman stammered, as he glanced at Harold's card, which he held in his hand. "Mr. Robertson."

"There is not much to tell," went on the young man, gaining courage, as he faced his task. "I belong to a respectable Virginian family. My father died in battling for the lost cause, and left my mother to struggle against the world. I am poor, but I hold a trustworthy position in the Columbian bank, and am able to take care of a wife in a moderate way."

"The major was frowning more than ever. "What is your position there? I happen to know the president." "Assistant cashier, on a salary of two thousand a year. It is very little, I know, but I have reasons to hope for a promotion before long."

"I think I have heard your president speak well of you," said the major, "and I have no doubt that you are socially all right, or my wife would not have allowed my daughter to meet you," but," said the old man, as he put his hand on Harold's arm and drew him to a seat near by. "But I can not feel willing to let my daughter marry a man who has nothing to depend on but his salary, which would be taken away if you were to be disabled in any way. I shall leave her considerable money, but, nevertheless, I want her husband to be able to—manage her affairs, and to be a man of means. I know," (as Robertson started to speak) "that you both no doubt fancy that you will lead wretched lives if you are parted, but it is often worse for parents to step in, and decide for their children in such matters. I have known many young people marry to marry the other—the earliest choice, and be happy. There is not a more contented woman in Boston than my wife (I am speaking very confidentially, because I don't want to hurt your feelings), and yet at the time I married her she thought she was in love with a young man of her acquaintance. She even confessed it to me at the time, and yet, look at her now. It would surprise me if she even remembers his name. You must look at it, my dear boy, in a sensible manner, and I believe that you would be an honest, honorable husband for my daughter, but she is too young to think of such a thing now; and well, I do not wish her to meet you again; that's all there is about it."

Harold rose. He had grown very white, and a hopeless, drawn look was about his sensitive mouth. He had lost. There was nothing left for him to do, except to get away from the stern matter-of-fact business man before him. He turned toward the door, and as he did so, he stopped in bewilderment. Standing out from the semi-darkness of a corner, was a face he knew well. Was it a reality? No, it was only a portrait on an easel, and yet so life-like was it that he had for an instant believed the dead to have risen. "What is the matter?" asked Major Huntington, noticing the steady stare of his visitor at the picture. "That—that portrait," he gasped; "how did it come here?" "What do you know about it?" asked the old man. "It is my father's," said Harold. "It is exactly like a photograph my mother had of him taken in the war." "Your father?" asked the major, in a slow surprise. "Surely—" "It is no one else," replied Harold. "I know it was my father's." "Was he in the battle of Chickamauga?" "He was killed there. He had just stepped out of a place of safety to drag a wounded Union officer out

of danger, and fell himself within twenty steps of a safe retreat."

For a few minutes the young man and the major stared into each other's questioning eyes.

"That man is your father," said the major. "I was the man he died for, though I did not know till now how he fell. God forgive me, I have just insulted you by refusing you my daughter's hand because you have no fortune, when but for him I should have had only the poverty of the grave. Mr. Robertson, you can now honor me and my name by becoming a member of my family." And with moist eyes the old man abruptly left the room. Ten minutes later, Harold Robertson telegraphed Dorothea as follows: "Have full consent. The portrait did it."

Dorothea ran down to the beach to her mother, waving the dispatch. "It is all right, Mama. Papa has consented," she cried, "see, here is Harold's telegram. But what does he mean by 'The portrait did it'?" Mrs. Huntington could not explain, though she puzzled her brains all day over it, and Dorothea did not understand until the afternoon mail brought a letter to her from Harold.

The Pest of Flies

It is not too early in the season now to install preparations for the exclusion of the ever dreaded pest—the fly.

The Chicago Health Department has made a declaration of war against the house fly as a disseminator of disease and a purveyor of filth. A fly will waste about in the germs of an infectious disease, and then swim in milk, or walk over jelly, ice cream, sugar, meat, or butter, with its mouth and legs smeared with filth. Not long ago the department traced an out-break of typhoid to milk brought from a farm near Chicago. The water used at the farm was pure, and the dairy clean. There was, however, a case of typhoid on the next farm, and flies had carried the germs to the milk.

Here are some of the suggestions for fighting the pest: Screen all food, and keep flies away from it. Cover up food quickly after a meal, and bury or burn all table refuse. Allow no rubbish to accumulate near a dwelling. Keep manure in a vault pit, or screened enclosure, and sprinkle its surface with chloride of lime. The Chicago experts also advise the burning of pyrethrum in the house, flies and stun the rest, so that they may be swept up and destroyed. Some of these suggestions may be carried out by householders, but for stable manure and garbage in lanes some additional public regulation may be required. It would be a grand thing for health and comfort if we could get rid of the house fly.

TANGLEFOOT FOR FLIES

Mrs. M. G., who requests a receipt for sticky fly-paper, may take her choice of the following, which are all good. Several are given, for it sometimes happens that the cupboard may hold some of the simpler ingredients while others are missing. For No. 1, mix equal parts of resin and castor oil with a dash of sugar to tempt the flies. Spread on heavy paper and leave a margin for handling. For No. 2, 1/2 lb glue and a cup of molasses, mix well together and spread on paper as above. No. 3, brush heavy glazed paper with a thin coating of glue. When it has dried spread over it a mixture of an ounce of castor oil, three ounces of resin and a tablespoonful of molasses.

POISON FLY PAPER Pour 1/4 gallon of water over 1 lb of

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quassa wood; allow it to stand over night and then boil the strained fluid down to one qt. The same wood must be boiled with one quart of water until it is reduced to one pint, when the two infusions should be mixed and from 8 to 12 ounces of brown sugar dissolved in it. The paper should be passed through the fluid, drained, and hung up to dry. Blotting paper of any color may be used, and a small piece of it thus prepared, placed in water in a saucer will prove a very effective fly destroyer.

For Washing Machine

The constant removing and replacing of the plug in the outlet of my washing machine had so enlarged the hole that it was very uncertain whether or not the plug would "stay put." By enlarging the hole a trifle, a common wooden or metal faucet was put in, and proved a great success. The kind used in vinegar barrels costs about fifteen cents, but a brass water faucet is better.

Another labor saver is a hose about five feet long with a coupling upon one end and the other end enlarged. The coupling fits the cold-water faucet, and the enlarged end fits the hot-water faucet, if such is at hand. By this means we fill the machine quickly and easily.—A Subscriber.

Little Helps

If a bedstead creaks at each movement of the sleeper, remove the slats, and wrap the ends of each in newspaper before replacing it. This will prove a complete silencer. If you scorch a garment while ironing it, rub a lump of dry starch on the mark, then sponge it off. Re-

peat till the yellow disappears. A strip of tin about two inches wide and a foot long, will be found a great help when washing the wainscoting of a room. It should be held just above the wainscoting and will protect the paper during the washing.



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Rhubarb the Year Round

After the first enthusiastic welcome given it in early spring, rhubarb suffers a waning of popularity with the average housewife. This, doubtless, is partly due to the coming of other fruits, and partly also to a limited knowledge as to the possibilities of this humble member of the plant kingdom. With many, rhubarb means merely a pie, a sauce, and possibly a brown betty; while a few have learned that a very clear and delicate jelly may be made from it. Beyond this, however, few have cared to penetrate, with the result that they have missed one of the most delightful additions to their preserve closets.

Rhubarb may, and should be, enjoyed the year round, not only because of its acknowledged tonic properties, but because of the many ways in which it may be used to lend variety to the menu. Plainly canned, by the simple cold water process, it will keep indefinitely, and may be used in various desserts exactly as though it were the fresh variety, which it greatly resembles. Besides this, there are many varieties of jam and marmalade, which are delicious in themselves, as an accompaniment to the breakfast toast, and which also may be used in steamed cup puddings, in tart shells, or as an ever-ready filling for layer cakes. The formulas given below are some of the best, and deserve to be better known among up-to-date housewives.

MARMALADE

To 4 qts rhubarb cut up without peeling, allow 4 lbs sugar and 2 oranges sliced, with peel, also 1 lb raisins, seeded and cut in two. Cook all together slowly for 3 hours, taking care that it does not scorch.

ALMOND MARMALADE

Peel and cut up rhubarb and boil with a very little water until soft. To every pint of pulp allow 1 oz sweet almonds (blanched and chopped), 1 lb sugar, and half a lemon, cut in thin slices. Boil slowly for 1 hour, then seal in jars.

RHUBARB-CURRANT JAM

Use equal quantities of black currants and prepared rhubarb. To every lb fruit allow 1 lb sugar, and boil together slowly until done. This is particularly beneficial in case of fevers, or illness of any kind.

FIG RHUBARB

Extract the juice from 6 lbs rhubarb, exactly as for jelly. To this allow 1 lb figs and $\frac{1}{2}$ lb candied lemon peel, both cut in small pieces. Cover with 5 lbs sugar and cook slowly together 1 hour. Especially nice for cake fillings.

RHUBARB JAM

To each qt cut rhubarb allow $\frac{1}{2}$ lbs sugar. Remove the white rinds and pips from 6 oranges, and slice peel and pulp into the preserving kettle with the rhubarb and sugar. Cook all slowly until thick as desired.

RHUBARB AND PINEAPPLE

When preserving your winter's supply of pineapple (especially if you are limited as to quantity), try combining rhubarb with it. One part of rhubarb to three or even two of pineapple will give you a delicious preserve. The pineapple should be shredded, and rhubarb peeled and diced as usual, with sugar in the usual proportions. When cooked you will be unable to tell which portion is pineapple and which rhubarb, so well do the flavors blend, which is something of an advantage when pineapples are scarce at 1 dear.—M. E. S. Wyers, Welland Co., Ont.

GRAHAM PUDDING

To 1 cup sour milk or buttermilk add $\frac{1}{2}$ cup molasses, 1 teaspoonful soda, $\frac{1}{2}$ cup sugar, 2 cups Graham flour with salt and spice to taste and 1 cup seeded raisins dredged with flour. Steam 2 hours and serve with cream or any sweet sauce.—Mrs. K. St. J., York Co., Ont.

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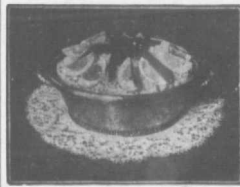
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Using the Left Overs

While some young housekeepers are sure that they are planning carefully and using every available portion of food, there are many others who have not given the matter much thought and do not realize that much good material is thrown away in many households that with wiser management, might serve some other purpose.

Perhaps the worst waste occurs where a young wife keeps one maid and does not plan her own meals entirely; but if, as you read these words you realize that you do not know what becomes of yesterday's remnant of steak; if you have not made provision for the bread that was left over on the bread plate, resolve that it will not happen again, for you can lessen your bills in a wonderful way by looking out for these tiny leaks. If, however, your household is entirely in your own keeping and you are anxious to utilize everything, these few suggestions may prove helpful.

Perhaps there is just one piece of steak left—as long as a finger and twice as wide—and a little of the gravy. It will make an addition to a supper dish. Run through the meat grinder with a wee bit of onion, it may be sprinkled over half of an omelet before it is turned. Fingers of toast may be made and moistened with the heated gravy, a very little stewed tomato (thickened) placed on top and the meat sprinkled over all. With a little chopped potato it will make enough hash for two or three persons, particularly if spread thinly on rounds of toast or halves of biscuits and a poached egg dropped on



Left-over bread utilized in a tasty pudding and garnished with sliced oranges and sugar.

each round. Or, drop spoonfuls of mashed potato on a platter; make a depression on the top of each mound, moisten with egg-yolk and when browned pour a little of the hash in each depression.

Small pieces of steak left over have the same relation to the family's bank account as do the pennies and half-pennies in adding up a Sunday total. In themselves trivial—insignificant—with some others added to them they possess a value surprising in the aggregate.

Realize that meat will combine in many a tasty dish with potatoes, tomatoes, onions, macaroni, rice, turnips, cabbage, etc., and with lettuce or cress will make a pretty salad out of what might be carelessly thrown away. Salad dressing is not only delicious but is very healthful, and salads of all sorts cannot come upon the table too often. If a bit of meat or fish cannot be used in any other way, it can be ground and moistened with a little mustard and some piquant sauce, and spread on rounds of toast or biscuits will make tasty morsels to eat with some other favorite dish.

SAVE ALL PIECES OF BREAD

Bread forms a large element of waste in countless families, and this is as inexcusable as it is extravagant, for every crumb of good bread should

be used, and if it is allowed to grow mouldy then too much is baked at one time or it is not kept in a proper place.

Left-over pieces of bread may be served as toast. Smaller broken pieces may be cut in squares and fried in butter to serve as croutons with soup. Then there are bread puddings. Bread stuffing with a little onion, an egg, and poultry seasoning will make a new dish out of steak, or will stuff the Sunday chicken. It will thicken soup satisfactorily, and when there is no other use the odd bits should be broken

small, spread out in a pan in a hot oven and browned crisp, when they can be run through the meat-grinder to make bread crumbs in which to roll croquettes, cod-fish balls, etc., and to use for thickening stewed tomatoes and other dishes requiring bread-crumbs. In glass jars these crumbs will keep indefinitely.

Spanish toast is also called "Nun's Toast," and may be served in a variety of ways. Dipped in a batter and fried in butter it may be served with powdered sugar, or may be spread with quince or other marmalade and made a delicious luncheon dish.



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COLD EGGS

Boiled eggs left over, may be boiled hard and used to garnish meat dishes, or may be cut up in a cream sauce. This makes a popular supper dish alone or may be used as a sauce for fish.

Scrambled eggs may be re-heated with a little milk; and fried eggs can be ground into croquettes with meat, adding bulk and moisture. Left over cereals may be packed in small moulds to serve cold, or may be cut and fried for supper and served

with maple syrup, or wheat cereal served with preserves make a dessert. A little bit will do for a slice of cake or a few tips of peas being added to them whites last. Nothing loses so entirely as bread. Blend in a tr beat the yolk add to them whites last. Nothing loses so entirely as bread. Blend in a tr beat the yolk add to them whites last. Nothing loses so entirely as bread. Blend in a tr beat the yolk add to them whites last.

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with maple syrup. Some of the heat covered, slightly softened and served with a custard or with preserves make a dainty luncheon dessert.

A little bit of fruit jelly left over will decorate a dessert prettily, or when the custard has dropped on the top of fried rice cakes, spread on slices of cake or as filling for a sweet omelet.

A few left-over peas in a cream sauce will make an acceptable sauce to eat with fish or croquettes, and many of the other vegetables will make good salads—beets, potatoes, beans, peas, and corn—or blended with a cream sauce and baked in the oven will make a satisfactory reappearance on the table.

Mashed potatoes can be made into potato cakes; creamed potatoes left over with the addition of a little cheese will make Delmonico potatoes, and fried potatoes may be fried browner for the second serving. A couple of almost any left-over vegetable will make a good luncheon or supper dish in the shape of a soufflé, a few tips of asparagus, a little corn or peas being particularly delicious.

Blend in a rather thick cream sauce, beat the yolk of two eggs light and whites last. Bake and serve hot. Nothing loses its delicious quality so entirely as a cold soufflé.

Left-over bits of fish will make a Chowder with potatoes or fish-cakes. Baked fish will make rice cakes, pancakes, pudding and rice moulds, which may be served in countless ways with meat or a dessert.

A few raisins, a little sugar, and milk or cream will make the most wonderful dessert of left over rice for children.

LEFT OVER TEA AND COFFEE
Coffee remaining in the pot may be poured off and iced for further use in hot weather, or can be made into jelly for dessert. One does not wish to have coffee jelly too often, however, and if it happens that there is a good bit in the pot every day to throw away, it is wisest to make a smaller quantity until one reduces the waste to a minimum. True economy lies in making just enough—nothing too much. Often an over-abundance destroys a delicate appetite while a little, daintily served, makes each dish appetizing.

Tea has little value as a left-over, but the damp leaves are a help in sweeping up the dust on a rug or carpet, and an occasional drink of cold tea is excellent for potted ferns. Pour off the tea, if any is left, into another pot. Never let it stand on the leaves any length of time. This when cold with ice, and a slice of lemon added, can be quickly served in hot weather.

If a recipe calls for the yolk of an egg and you have no immediate use for the white, beat it up and add powdered sugar to make into frosting. Covered in a glass jar this will keep

until the next time you wish to make frosted cakes.

Egg shell will clear coffee, and when eggs are costly this method will be found satisfactory: Beat one egg entire and pour enough granulated sugar with it to render it neither too moist nor too dry. A spoonful of this mix will clear coffee as well as the egg itself, and one egg will last a long time.

GENERAL HINTS

Never allow a left-over to look like this. This is one secret in having variety upon the table and in keeping everything dainty and tasteful. If a few chops are left over at a meal, dip them in egg batter and bread them and serve in this way for the second time. If part of a pudding is left over, do not put it on the table in its half-empty dish. Blend with a little fresh milk, put in a smaller baking dish or in individual dishes to reheat in the oven. If you have the white of an egg left over, it may have a meringue on top, or cold pudding may be cut in slices and steamed and served with a wine sauce or custard.

Stale cake will make a cabinet pudding, or may be freshened in the oven by being cut in slices and reheated—only if part of a pudding in a pile will be crisp, the others will be softened and moist and the same is true of bread slices. In this way the cake can reappear with a sauce as a cottage pudding.

The economical housewife will find that a generous supply of pretty ramekins, blue baking-dishes and moulds for pressed meat, fish desserts, etc., will make the reappearance of left-overs an easy problem; and while some of her neighbors may think she is extravagant with her side-dishes and extra courses, she can rest assured that her bills are lower than theirs while her garbage can holds almost nothing.

Fat should be fried out for drippings and the rest thrown away. Some housewives make soap out of extra fat; but in these days of modern conveniences when soap is as cheap as it is, I do not think it pays, when one considers the expenditure of labor and time—for it is disagreeable work at best.

Sour milk can make muffins, ginger-bread and numerous dishes, or cottage cheese is made with little trouble. Pour the sour milk in a granite pan, and set at the back of the stove until the whey and curds are separated. Pump cold water on the whole and pour through a fine strainer. The curds will all remain, and after being thoroughly washed, a little cream and salt and butter are rubbed into them and they are pressed into ball shape with the hands.

With numerous salads and fancy dishes tiny balls of cottage cheese are most effective. If wished they may be tinted slightly with green vegetable coloring. I gray is left over keep it at hand for use for another stew, to moisten croquettes or to use with a baked dish, or, as a last resort, the soup pot.

A cup of cocoa left over will keep for a day or so, and heated over will be just what the housewife needs with a wafer or a slice of cake.

Have I forgotten anything? If I have not thrown it away, but see what you can evolve out of it, and I am sure you will enjoy the result. It is an interesting task to utilize all available material, and as the most skillful dressmaker evolves wonderful results out of scraps, so it also proves the skillful housewife, for the originality nor the cleverness required to recognize possibilities where they exist.

Our Girls and Boys

New Premiums for All

We have some fine premiums to offer to the young folks who are desirous of working for us this summer, in securing new subscriptions for us. They are worth working for any boy or girl who secures five or over subscriptions for us at \$1 each, will have their photograph published in the paper. We would be glad to publish all the photographs we can get under these conditions. Write to the Household Editor for further information regarding our premiums. They will please you.

Wonder Who They're For

My ma's been working very hard
And also very shy,
And keeps her sewing out of sight
Whenever I am nigh.
I asked her once what made her stop
Her work when I came in;
She said she's only stopped to get
A needle, thread or pin.

The bureau drawer next to mine
Is locked both night and day,
And when ma wants it open
She sends me off to play.

I stole a peep one afternoon,
Although it was not right;
But oh! the little things I saw
Were such a pretty sight.

The cutest, nicest little clothes—
Just big enough for doll;
But then I know they're not for her—
She needs them more at all.
I know they're for ma or pa,
For me not brother 's sake;
For we can't wear such little clothes;
I wonder who they're for.

What Jackey Did

"Tommy," said mamma (who had noticed severe bruises on his face),
"you've been fighting again." "Yes, mamma." "And didn't you promise me that when you wanted to hit anyone you would always stand still and count a hundred?" "So I did, mamma, and this is what Jackey Jones did while I was counting."

A Good Wife

A good wife to my notion,
Should help work in the fields—
Not all the livelong day, of course,
But spare hours 'tween the meals.
The woman surely do not think
I've small jobs to slip along.
Or else they'd hurry to the fields
And hoe or plow the corn.
Some women are so dainty, though,
They won't help men at all;
And all they do is household work
And on their neighbors call.
Now if I ever marry,
She'll be the kind I'll choose,
That I may surely labor gain
A Farmer's Boy.

Satan Terrified

There is as great genius displayed in advertising as in the higher branches of literature. No problem dazes the modern advertising man. In the window of a little book store in one of our larger cities, was recently heaped a great pile of Bibles, marked very low—never before were bibles offered at such a bargain; and above them all, in big letters, was the inscription:
"Satan trembles when he sees Bibles sold as low as these."

Always laugh when you can. It is a cheap way of getting rid of a philosophy not well understood. It is the sunny side of existence.

The Sewing Room

Patterns 10 cents each. Order by number, and state for whom. Give age; for adults, give bust measure for waists, and waist measure for skirts. Address all orders to Pattern Department.

CHILD'S DRAWERS 3864



Here are drawers that allow of a finish of three sorts and which are adapted to every material in use for such garments. In any case they are closed at the sides and are finished with bands by means of which they are buttoned to the underwaist.

The drawers are made with the two leg portions and with the front and back bands. The quantity of material required for the medium size (6 yrs) is 1 1/2 yds 27 or 1 yd 3/8 in wide. The pattern is in sizes for children of 2, 4, 6, 8 and 10 yrs, and will be mailed for 10 cts.

MISSES' FIVE GORED PETTICOAT 3853



There is no petticoat more satisfactory than the simple five gored one. This one is designed for young girls and is made with a simple Lounce of embroidery, the material being English crepe. The petticoat is cut in five gores, and is finished with a hem at the lower edge; the lounce is arranged over it. The quantity of material required for the medium size (14 yrs) 3/4 yds 21 or 2 1/2 yds 36 in wide with 3/4 yds of embroidery; 7 in wide and 2 1/2 yds of insertion; or 1 1/2 yds of additional material 21, 3/4 yd 36 in wide if flossine is made to match skirt. The pattern is in sizes of 12, 14 and 16 yrs, and will be mailed for 10 cts.

CIRCULAR SKIRT 3854



The latest circular skirts are a bit less voluminous than has been the case and are fitted at the hips by means of gathers or darts. The one is among the newest and best and can be treated that it becomes in so many ways adapted to all seasonable materials. It can be made either with or without the seam at the centre front. The skirt can be cut in either one of two pieces as it is made with or without a seam at the centre front. Material required for medium size is 5 1/2 yds 27, 4 yds 44 or 3 1/2 yds 36. The pattern is cut in sizes 22, 24, 26, 28, 30 and 32 in waist measure, and will be mailed for 10 cts.

CHILD'S NIGHT DRAWERS 3354



The comfort and the general satisfaction to be obtained from night clothing that cannot slip up and down is appreciated by every mother. Here is an exceedingly simple little pattern for night drawers that renders the small folk ideally comfortable and which can be made from cambric or muslin for the warm weather, from flannel or flannellette for the cooler nights. As shown it includes feet and these are in every way to be commended for everything except muslin for medium size (6 yrs) is 4 yds 27 or 3 yds 36 in wide. The pattern is cut in sizes for children of 2, 4, 6, 8 yrs, of age and will be mailed for 10 cts.

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Please Write may be addressed to these addresses: **SAML. PEACH & SONS, The Looms, Box 667 NOTTINGHAM, Eng. (Est. 1857)**

The Canadian Apple Situation

Two sources of loss to the apple trade have been reviewed, namely the packing of inferior fruit and the lack of co-operation between buyers and growers.

A third source of loss and a most serious one, is the damage done to the fruit in transit. Improper packing, delay in reaching markets, rough handling, too high or too low temperatures, are the commonest causes. Barrels damaged in this way arrive "slacked," "slightly wet," or "wet," and are catalogued accordingly in the selling list. The damage done is seldom less than 35 cents a barrel, and is sometimes so great as to render the fruit quite worthless. A barrel is "wet" when its contents are so far gone in decay that the juice exudes. If left standing any length of time, a pool collects under the barrel. How to place our apples on the British market in a "tight" condition is an all important matter. Thirty-five cents a barrel cuts off the whole margin of profit even when all other conditions of a prudent deal are satisfied.

In the first place, there are varieties that do not carry well under the most favorable circumstances. These should be avoided. In fact, unless a variety has positively good shipping qualities, it should not be exported at all. For winter shipment, only strictly winter varieties such as spies, greenings, russets, baldwins and ben davis should be put into store. All late fall and early winter apples should be shipped from the orchard. It only increases expenses to put them into store. They will be ripe enough when they reach the consumer.

In the second place, no one but an expert should be entrusted with the finishing of a barrel. It requires long skill and knowledge of varieties, to press a barrel properly, so that the pressure may be neither too great nor too little, and at the same time evenly distributed. Much of the damage done to apples is due to over-pressing. On the other hand, if a barrel is not pressed tightly enough, it will become slack through the natural subsidence of its contents. All slack barrels look alike to the foreign buyer.

OUR APPLES NOT FAIRLY TREATED

The rough handling of apples is bad at any stage. Apples that are worth anything are worth taking care of, and our apples are too good for the treatment they actually receive. They should be pulled gently from the trees, placed carefully in the baskets, not tossed, the baskets should be lowered into the barrel, not emptied from the top; and the barrels should not be rolled over a rough surface, or dropped with a jolt. There is a sure loss of money, and little if any, gain in time, in the hasty and rough handling of apples.

Our apples as a rule do not look well in the fruit shops of Great Britain. Placed alongside the carefully packed apples of California and Oregon they suffer greatly in the comparison. Their surfaces are not bright and clean as they might be, and they are covered with little dents and bruise spots. When one considers how much the market value of all kinds of fruit is enhanced by an attractive appearance, one can readily understand why our apples sell for less than half the price of their handsome rivals. Nor is it because ours are barreled and theirs are boxed. It is quite possible, by careful methods of packing to put barreled stock on the British markets without these surface blemishes. But most of our apples are not treated fairly from the beginning. They are

The second of a series of articles written for the week by E. J. McIntyre.

plucked roughly from the trees, tossed into baskets or rattled and bruised in picking-bags, dumped on dirty sod, exposed for days to all kinds of weather, tossed and dumped again, racked violently in the barrel, and over-pressed. What can one expect of them in the British markets? The wonder is that they sell so well.

SHIPPING EARLY APPLES

Unavoidable conditions of temperature are also responsible for much loss. Too high a temperature affects the early shipments, and too low, the winter shipments. In either case the fruit arrives in an unsound condition, more or less advanced in decay.

So far as early shipments and hot weather are concerned, the remedy lies in having as little as possible to do with either. If, however, shipments of early fall fruit to British markets are decided upon, let nothing be sent but No. 1 stock, carefully handled, and packed under cool conditions. Do not let the barrels lie any length of time about the station; and choose the best and quickest boats. There is generally an excellent demand for good fall apples that arrive in a sound condition. If lost results, the fault may be sure to be with the apples, not with the demand.

GUARDING AGAINST FROST

But frost is the apple-buyer's nightmare. It begins to disturb his dreams about the third week in October; and not till the season is over, is he free from the dread of it. There is no exaggeration in the statement that from the 20th of November to the close of the season, one-third of the barrels exported are damaged by frost. When an apple freezes it shrinks in size and a barrel becomes slack, even though only a few apples in it are affected.

It is when frost attacks an apple that the evils of rough handling are most clearly seen. In the case of an apple frozen on the tree, if the frost is gradually drawn out, the apple is but little hurt, and though it never tastes quite so well, and ought to be shipped without delay, very little damage is done. But if an apple that has received rough handling, freezes, or if an apple on the tree is handled while frozen, all the bruises, dents, and finger marks appear as rotten spots when the frost comes out and the apple is practically ruined. Apples that are badly frosted on the way to the British market present a ghastly sight when the barrels are opened. No frost is visible, but the shrunken, corrupt mass tells the tale. With the danger of frost removed, the apple trade would be placed on a comparatively secure basis.

It is surprising, too, how much cold weather apples can actually stand without injury. Unprotected, they begin to freeze at four degrees below freezing point of water. In a barrel they can resist over night ten degrees of frost, if no wind blows on them; while in a tight box car a zero temperature outside does not seem to affect them for many hours.

REPACKING AT SEABOARD

One of the great problems, therefore in the apple trade, is how to prevent shipments getting frosted on the way to market. An obvious suggestion is to store them at the seaboard, that is, at St. John, early in November, for shipment throughout the winter. Nor is only the danger of frost almost entirely removed, but a stopping-off freight charge is avoided. Apples re-packed in St. John reach the English market in a fresher condition than the apples shipped from points in Ontario; and the service that the Canadian Pacific and the Allans give from St. John to Liverpool leaves absolutely nothing to be desired. Those who have stored apples in St. John find the number of slack barrels in

their consignments to Liverpool reduced to the vanishing point. On the other hand, St. John is far away from the base of operations; and storage and freight must be paid on the shrinkage as well as on the fruit forwarded. Still the movement to store Ontario apples in St. John deserves all encouragement. But shippers ought to be free in their choice of consignees; and it is doubtful whether the trade can stand a higher storage charge than ten cents a barrel.

Most of our winter shipments are made from Portland. The railway service to that point is rapid, and upon the whole, gives good satisfaction. If sufficient care is taken in preparing the refrigerators, there is little danger of frost, though sometimes the cold becomes so intense that all precautions are unavailing.

A DANGER SPOT

Occasionally something occurs at the wharf sheds to cause an unforeseen delay in loading the apples. The car is emptied, the barrels are checked, ready to be slung aboard; but perhaps the gangway needs fixing, or another hatch must be got ready, or something else, and then if the weather is very cold, and a wind is blowing through the sheds the mischief is done. It does not take long. Only a few apples may be affected in each barrel but the shipment does not arrive in good condition. It is important that the unloading of the cars and the loading of the boat should be concurrent.

Much more frequently, however, the damage is done in the car. Refrigerators not properly prepared, or box cars used too late in the season, are responsible. The trouble with refrigerators is that they are designed, as the name implies, for protection against heat, rather than against cold. They are awkward to load with apples. The ice boxes, vents and ventilators are all sources of danger, and the floor and roof are not always air-tight. A car designed in the manner of a simple, frost-proof chamber, with double walls, ends, floor and roof, one would think, might be constructed so as to afford, with suitable preparation, sufficient protection for apples during the severest weather; long enough, at least, to reach the boat, and particularly if the apples are not too cold at the outset.—E. J. McIntyre.

Old Road Work System Abolished

Wm. Widdon, reeve Malden Township

Statute labor was abolished in our township about 15 years ago. It was abolished because it was an unfair tax. It did not fall on rich and poor alike. The farmer who owned 100 acres had about 8 days work while the hired man had 2 days. The one

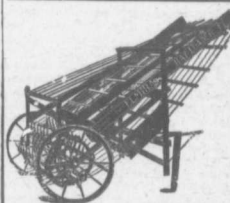
worked for wages and the other was worth, say, \$8,000.

There were 20 divisions under the old system, which meant 20 pathmasters. These did no work and were usually those who had the most statute labor to do. There was great dissatisfaction with it and the council voted to abolish it. This was done and there has never been a kick over the new way. If a person went to the ratepayers to seek election, by doing away with the new method, it would not get a man to nominate, him, let alone vote for him.

By the new plan the council oversees the expenditure of all moneys on roads. The members drive over to the township in the spring to see what work is needed. Each councillor looks after the work in his section. The people believe they get better service this way than by the old way.

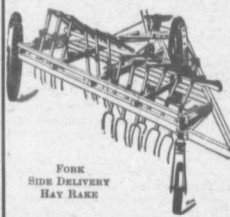
There is no commutation of statute labor at so much a day. Statute labor was simply abolished and a tax quired for all purposes, road improvement included. The plan works well.

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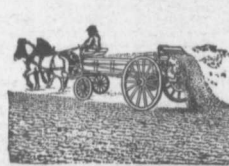


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SAMUEL LEM

MARKET REVIEW AND FORECAST

Toronto, May 27d, 1908. — Although spring is well advanced, business does not appear to get on its feet as quickly as was expected a couple of months ago.

The growing crop is the dominant factor in the wheat situation just now. Through the visible supply of wheat, both in the United States and Canada, has decreased materially of late, it has not strengthened the market.

WHEAT The growing crop is the dominant factor in the wheat situation just now. Through the visible supply of wheat, both in the United States and Canada, has decreased materially of late, it has not strengthened the market.

H. E. GEORGE CRAWFORD, ONT. Putnam Stn., 1 1/2 miles—C.P.R. E-4

BROOKLAND HOLSTEINS FOR SALE—1 bull 20 months old, Calamity Korndyke Wayne, No. 5669, vol. 11, C.H.B. He is well grown and an excellent individual, nicely marked. His sire is Manor Korndyke Wayne (Imp.) with 71 half sisters in official record; also from officially tested dams. Prices right. A. D. FORSTER, Bloomfont, Ont.

NEIL SANGSTER OREMSTOWN, QUE. Breeders of Holstein-Friesian cattle of high-class merit. Young stock of both sexes for sale. Write for prices. o-4-29-9

SUNNYDALE HOLSTEINS Keyes Count DeKoi (5620), also bull calves by such noted sires as Keyes Count DeKoi (dams record 1944 lbs. milk, 15c one year, 26 1/2 lbs. butter in 7 days), and Dutchland Sir Hengerveld Maplecroft, with 71 half sisters in official record; also from officially tested dams. Prices right. A. D. FORSTER, Bloomfont, Ont.

ELM SHADE STOCK FARM "The Home of De Kol Holsteins." FOR SALE Holstein-Friesian cattle of all ages. Write for what you want or come and see visitors welcome. JOHN CRUISE, Lachute, Que. o-4-15

SPRING BROOK HOLSTEIN AND TAMWORTH—3 young sires in farrow to Imp. "Knowle King David," 2 boars ready for service, Spring litter by Imp. King. Offerings in farrow, 1 bull, 12 male bull calves, and a few females. My Motto, "Quality." A. HALLMAN, Breslau, Ont. E-5-1-9 Waterloo Co., Ont.

HOLSTEIN CALVES ENTIRE CROP ABOUT 25 Sired by Imported Ykims Sir Posh and Johan as Rue Narcosette; April and May delivery. Also Ohio Importers of White Star, 1 1/2 year, largest strain, and oldest established registered herd in Canada; pairs and tries not skin. Registered prepaid. Pedigrees and safe delivery guaranteed. E. D. GEORGE, Putnam, Ont. o-4-15

HOLSTEIN BULL FOR SALE, 8 years old, 2 cows and 2 calves in milk. One Tamworth sow. Write for particulars. SAMUEL LEMON, Lynden, Ont. o-4-0

80c., or down to what it was before the advance. Lower cables, more liberal offerings, and the bright prospects for the crops, have had this depressing effect. There is some improvement in the doubt- ing farmers, who have been holding wheat, to bring it to market. If the 1908 crop is likely to be a big one, it will not pay to hold wheat. Locally, there is no material change in prices, which rule at 93 to 95 cents outside for Ontario winter wheat. There is no goose wheat offering. Buyers and sellers are far apart, which is usually a sign of lower values coming; 97c to 98c a bushel is being paid on Toronto farmers' market for wheat, and 93 to 94c for goose. Manitoba wheat is easier with little change in quotations.

COARSE GRAINS The oat market keeps firm at about last week's prices. Dealers here are paying 47 1/2 to 50c as to quality at outside points. On the farmers' market, the best sell at 54c to 55c a bushel. Wholesale quotations at Montreal range from 46 to 52c, the former being for Manitoba receipts. There is a "country" on barley at Chicago, and the local dealers here are keeping out of the market until it is over. Barley is quoted here nominally at 60c a bushel. At Montreal mixing barley is quoted at 65 to 66c, and Manitoba feed barley at 58c to 59c. Peas are quoted here at 92c to 93c outside.

FEEDS There is nothing doing in feed corn, as prices are too high. No. 3 yellow is quoted here at 80c. At Montreal quotations range from 73c to 78c in store. Feed wheat is also in demand, and prices rule firm at last week's quotations. There is little buying ahead, as lower prices are looked for as soon as the feed demand slackens.

SEEDS The trade in seeds is about over for this season excepting in corn and root seeds. Prices for seed corn rule high, and good seed is very scarce.

HAY AND STRAW The crop outlook is having considerable effect on the hay market. Crop prospects in Quebec, where the hay crop is one of the staples, are very bright. In Ontario the situation is the same. This is causing farmers who have hay to sell, to market it, especially now that the rush with seeding is over. No. 2 baled hay is quoted at Montreal at \$13 to \$14, and No. 1 at \$15 to \$16.50. The market here is very dull. Baled timothy is quoted at \$2 to \$4 for car lots on track, Toronto. Farmers are closely sold out, and prices rule firm at last week's quotations. There is little buying ahead, as lower prices are looked for as soon as the feed demand slackens.

EGGS AND POULTRY There has been competition among packers at all points, for eggs during the week. At some western Ontario points as high as 15c was paid, with 15c ruling figure. East of Toronto the ruling price was 14c a dozen for eggs for packing. At Montreal receipts are reported heavy, though owing to the strong local demand prices have been well maintained at 12c to 13c in a jobbing way. New-laid are quoted here by the trade at 17c to 18c, with a slightly higher price for stock strictly new-laid onto farmers' market. On Toronto market, the best strictly new-laid sell at 19c to 20c a dozen. Dressed chickens are at 18c to 20c, fowls at 15c to 16c, and turkeys at 24c to 26c a lb., and spring chickens at 50c to 60c each a lb., and spring

APPLES From all accounts the season's wind-up of the apple crop has been more or less disastrous. There seem to be plenty of apples on hand, and dealers are beginning to wonder what is to be done with them. A shipment of 10,000 bbls. was made from Montreal recently to Great Britain as there was no demand for them on this side. The shipment will likely lose a lot of money to the shipper. At

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The Dominion Agricultural Offices of the Potash Syndicate

1102-1105 TEMPLE BUILDING, TORONTO, CANADA

Montreal a few days ago some apples sold at 35c a bushel that cost \$3.50 last fall. The apple crop both in Canada and the United States last year was larger than was figured on. On Toronto farmers' market apples sold at \$2.50 to \$3.00 a bushel.

DAIRY PRODUCTS The butter market continues on the downgrade, prices have dropped a cent or two during the week and further declines are expected during this week. A good demand is reported; Montreal, at the decline, which makes quotations there at 22 1/2c in large lots, and 22c to 23c in a jobbing way for creamery. The make of butter is increasing. Prices are yet too high for export. A year ago Montreal prints were from 30c to 25c and two quotations were from 30c to 25c and one 19c to 20c. Supplies are increasing here and prices are lower. Creamery prints are quoted at 25c to 26c and solids at 23c to 24c, dairy prints at 22c to 23c a lb. On Toronto farmers' market dairy butter sells at 25c to 26c a lb.

UNIT STOCK YARDS HORSE EXCHANGE The arrivals of horses last week at the West Toronto Horse Exchange were below

SPRING BROOK AYRSHIRES, are noted for being large producers of milk testing high in butter fat. A few bull calves of 1908 for sale. Also the stock bull, Crown Prince of Leamsmock (1908) Imp., for delivery July 1st. Write for prices—W. F. STEPHEN Huntington, Ont. o-4-15

NEIDPATH AYRSHIR 55 Bull Calves dropped this spring. By imported Bull, 1st prize Toronto, Ottawa, and Halifax. Long distance Phone, W. W. BALLANTYNE, Stratford, Ont. o-4-9

HUME FARM AYRSHIRES Our 1908 importation has landed, consisting in females of 3 year olds, 2 year olds, yearlings and calves. In bulls, yearlings, and calves, dams record up to 1,100 lbs. milk in Scotland. We also have calves from our own Record of Merit cows and others. Females, as desired, age, either (imp. or home-bred). Come and see our herd. Phone in residence, Hordsa Station, G.T.R. o-4-15 ALEX HUME & CO., Menis P.O.

THE SUNNY SIDE HEREFORDS FOR SALE—A choice herd of 10 heifers and 10 cows from 18 to 24 months old, at bargain prices; also a few cows with calf by side, and bred again, can be spared. o-4-23

M. H. O'NEIL, Southgate P.O. THE HOMESTEAD HERD OF ABERDEEN ANGUS CATTLE. Present offerings: 4 months old bull, sire a Toronto champion, also cows and heifers of the choicest breeding. Must be sold to make room, at prices that will surprise you. Wm. ISCHER, Progressor, Sibirynville, Ont. E-4

THE Salem Herd of Shorthorns is headed by the champion Gilt Victor (Imp.). Cattle of all ages for sale. J. A. WATT o-4-15 ELORA STA., G.T.R. & C.P.R. SALEM P.O.

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the average. Somewhere near 100 head were sold. There is a brisk demand for general purpose, wagon horses and drivers. Good young and sound general purpose horses sold at \$150 to \$200, and serviceably sound ones at \$95 to \$125 each. The offerings of wagon horses were not of the best, and purchasers had to take what they could get. They sold fairly well, however, bringing from \$160 to \$195 each. Some fine drivers and cobs were sold at prices ranging from \$100 each to \$275 a pair. Serviceably sound horses of all kinds brought from \$40 to \$75 each.

The present demand for horses is likely to keep for a month or six weeks yet. The summer season is always more or less dull in the horse business. Several lots sold last week went to Eastern Ontario points.

A number of consignments of horses are expected this week. Monday being a holiday, the regular sale will be held on Tuesday.

LIVE STOCK

Toronto, May 25th, 1908.—The high prices of the past few weeks have induced larger arrivals at the cattle markets here. The run last week was large, beginning with 49 cars at the Union Stock Yards on Monday, and continuing during the week at the city market. The quality of the fat cattle offered rules about the same, with a falling off in some cases. The high prices are bringing out a lot of unfinished stuff, which is bought up for butchers' purposes instead of being sent to the feeders lot. Notwithstanding the large run, trade has ruled fair, with stronger quotations reported for good cattle, towards the end of the week. There were several dozens on the market last week from outside points and bidding for some lots was brisk, with prices 15c to 20c a cwt. advance on some grades of cattle towards the end of the week.

The export demand keeps good. Cable reports are steady at 13c to 14½ a lb. dressed weight. The best export steers sold last week at Toronto market at \$5.75 to \$6.15, and export bulls at \$4.25 to \$5.25 a cwt.

Prime picked lots of butchers' cattle are worth \$5.50 to \$5.80; loads of good cattle, \$5.40 to \$5.60; medium, \$5.10 to \$5.30; common, \$4.75 to \$4.90; cows, \$3.75 to \$4.75. \$5 being paid for a few choice cows; and canned at \$3.00 each.

There is a strong market for good milkers and springers, though a fairly liberal supply was forward last week. For the bulk of the best, prices ranged from \$45 to \$50 each. Some of the very choice ones sold at \$65 and \$70 each, and one extra choice cow at \$75. Common to medium cows sold at \$30 to \$40 each.

The sheep and lamb market rules steady at firm prices. It is expected, however, that from this on receipts will increase, and lower prices may be looked for, especially for lambs. Last week ewes sold at \$5 to \$5.75, rams at \$4 to \$4.50, and yearlings at \$6.50 to \$7.50 a cwt. Spring lambs sold at \$2.50 to \$2.75 each. At East Buffalo handy lambs sold at \$5 to \$6.50, and a few at \$6.65 a cwt.

The hog market held steady last week at \$6 for select and \$5.75 for lighter, fed and watered. Prices at country points ruled at \$5.75 a cwt. The supply of hogs in the country is not large. But this has little effect on the bacon market, which is governed entirely by supplies in Great Britain. Denmark still keeps up her steady killings to a high level, and practically dominates the market.

Quotations at Buffalo are as follows:—Heavy and mixed, \$6 to \$6.95; Yorkers, \$5.75 to \$6.65; pigs, \$4.50 to \$5.35; roughs, \$4.75 to \$5; stage \$3.75 to \$4.25, and dairies \$5.75 to \$6 a cwt.

THIS WEEK'S HOG PRICES

The Wm. Davies Company, Toronto, reports quotations for hogs this week as unchanged at \$5.75 f.o.b., at country points. This means \$5 fed and watered, Toronto.

The bacon market does not improve any, and higher prices for hogs are not in sight. The Danish killings last week totalled 46,000 hogs, and the indications now are that Denmark will have a much larger supply of hogs during June than usual. The Danes last week produced bacon to sell at a profit at 47a, while the bacon made in Canada cost 52a a cwt. The Trade Bulletin's London cable quoted Canadian bacon last week at 46s to 49s per cwt.

MONTREAL PRODUCE TRADE

Montreal, Saturday, May 23.—BUTTER.—The butter market opened fairly firm this week with prices to the retailers ruling at from 25c to 26c a lb., according to quality, but towards the end of the week prices eased off considerably in anticipation of lower rates at the country markets at the end of the week, and today sales to grocers were made as low as 22½c a lb.

EGG.—The market for eggs continues firm with fairly heavy receipts, and a good demand for all grades from all sources, including a few for cold storage purposes. To date selected stock is quoted at from 18c to 19½c a dozen.

CHEESE.—There is no change to note in the local trade for cheese which is steady at unchanged quotations.

MONTREAL EXPORT BUTTER AND CHEESE

Montreal, Saturday, May 23.—There has been a decided improvement in the demand for cheese from the other side during the past week, and as a consequence the week is closing with a decided firm tone and country markets are ruling somewhat higher than they did a week ago. At Brockville on Thursday the cheese offered were sold at 11c to 11½ a lb., other markets in the neighborhood at the same price. On Friday the cheese offered at Napanee were all sold at 11½c, at which price most buyers were inclined to take a few. One cause of the strong market was the reported total loss of the steamer "Latona," of the Thompson Line, which carried upwards of 18,000 boxes of cheese, a large shipment for the early period of the season, and as the available stocks of old cheese are being steadily reduced on the other side,

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Sole Agents for the United States and Canada. The Lawrence-Williams Co. TORONTO, ONT. CLEVELAND, OHIO.

he demand for new cheese is improving daily. This demand was more than equal to the small quantity available in Montreal, and the market is closing this week with practically every available box in store sold, and ready for shipment.

Butter is closing easier again, and everyone in the trade is looking for lower prices at the country boards to-morrow. The few odd lots that were offered around the market here to-day were bought up at prices ranging from 20½c to 21½c. Prices in the country to-morrow should rule at about these rates.

MONTREAL HOG MARKET

Montreal, Saturday, May 23.—The Montreal market for live hogs was easy this week, and prices again marked a reduction from the previous week, selected lots selling at from 16c to 15c a 100 lbs. lower than the week before. There was a fair demand at the decline, and the bulk of the offerings soon disappeared.

Dressed hogs have been marked down 25 cents a 100 lbs. on account of the easier market for live hogs, and prices to-day were quoted at from \$9.25 to \$9.75 a 100 lbs. for fresh kills, about 100 lbs.

PETERBORO FARMERS' MARKET
Peterboro, Ont., May 23.—The market this morning was not very large. Farmers are taking advantage of the fine weather that has prevailed during the past week, and are busy resuming seeding operations. Farmers are turning their cattle out to grass, and hay is being offered very freely.
Poultry.—Chickens, \$1 a pair; turkeys, \$1.50 each.
Eggs.—New laid eggs, 17c a dozen.
Butter.—Good dairy butter, 28c to 30c a lb.
Potatoes.—85c to 90c; seed potatoes 75c
Hay and straw.—Hay, 11c to 11¼ a ton; straw, \$6.50 a load.
Pork.—Hind quarters, 11c a lb.; fore-quarters, 10c.; young pigs, \$4.50 to \$5 a pair.

The question of which separator is the best is often a difficult problem for those who know very little of separator construction, to solve. The arguments backing up the good qualities of each machine are almost irresistible. To assist the prospective purchaser to arrive at a solution of the question, most separator companies are now issuing booklets to illustrate the different parts of the machine, and descriptive matter of their good qualities. One of the best booklets of this nature that has come to our notice is that sent out by the DeLaval Separator Company of Montreal. The cover is printed in colors by the new three color process. Inside the cover are sixty-four pages of beautiful illustrations, and reading matter printed on highly colored standard stock. The illustrations show the different sizes of machines both complete and in sections. To a person interested in cream separators, this book is well worth writing for. Copies will be mailed free upon request by intimating that the request comes from a reader of this paper.

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COUNTRY NOTES AND PRICES

GRENVILLE COUNTY

Forecast.—The weather is very showery and very little plowing has been done. Milch cows, \$20 each; calves, \$10 to \$12...

ELGIN COUNTY

Corinth.—Pastures are a little backward but look well. New seed clover and fall wheat continue to come on splendidly...

NORFOLK COUNTY

Centland.—Pastures are very much better than they were a week ago. The weather the last few days has been warm...

WENTWORTH COUNTY

Troy.—The weather keeps cold. The season is fully as late as last year. Some of the best corn in this section are pretty badly killed...

HASTINGS COUNTY

Sidney Crossing.—Pastures are very good but soft as yet. On high lands, crops are fine but very little has been sown on the low land...

LINCOLN COUNTY

We have had an excess of rain lately. In favored locations the oats are up nicely but where land is naturally wet...

berries wintered well, but will be late in ripening. The last two springs show the value of underdrained land for fruit and garden truck...

WELLAND COUNTY

In this locality spring seeding is very late this year. Land that had been fall plowed or sown reasonably early and the grain on same is through the ground...

YORK COUNTY

Seeding is pretty well over, still on low lands there is yet a considerable area to seed. The late spring and late frosts have damaged the seed but more especially the goods and even the old meadows that a good deal will yet have to be plowed...

DURHAM COUNTY

Seeding in general in this locality is fairly well advanced. Many of the farmers have finished but others have wet spots on their farms that they have been unable to work...

SENIOR COUNTY

Seeding in general in this locality is fairly well advanced. Many of the farmers have finished but others have wet spots on their farms that they have been unable to work...

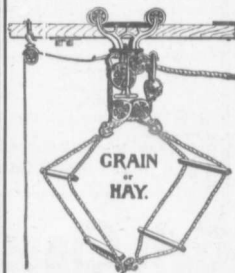
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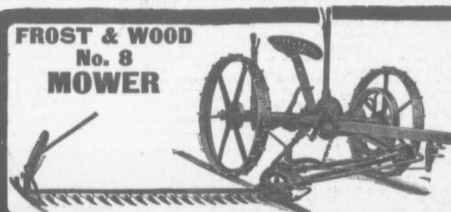
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