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Cheese and Butter Maker.

No. 1. Vol. 1.

WILLIAMSTOWN, & KINGSTON ONT., CAN. JULY, 1898.

50c. Per Year.

SNAP SHOTS

All along the Line.

REFRIGERATOR SERVICE.

Ottawa, June 2. — Refrigerator car service, arranged for by the Department of Agriculture, on the several routes of railway leading to Montreal, began on Monday, June 6.

On the Grand Trunk Railway there began a weekly service from Sarula to Montreal, leaving Sarula on Monday, June 6, via London and Hamilton to Toronto. A weekly service from Kincaidine to Palmerston via Guelph and Toronto, to Montreal. A weekly service from Meaford via Alandale to Toronto, for Montreal. A weekly service from Orilla via Belleville to Brockville, for Montreal. A weekly service from Chaudiere Junction and the I. C. R. to Montreal. A weekly service from Fort Covington to Montreal. A fortnightly service on alternate weeks from Megantic on the Quebec Central, and from Coaticook on the Grand Trunk, to Sherbrooke, continuing as a weekly service from Sherbrooke to Montreal. A weekly service from Port Perry to Montreal, via Wilby.

Arrangements have been made for refrigerator car service on the C. P. R. as follows: A weekly service from Bedford, Sherbrooke, Megantic, Mansonville, Warden, Quebec City and St. Gabriel (all in P.Q.), to Montreal; a fortnightly service from Pembroke, Ont., via Ottawa, to Montreal; a weekly service from Windsor, Ont., via Toronto, to Montreal; a service alternate weeks from Tecumseh and Owen Sound, via Toronto, to Montreal.

A refrigerator car service will be given on the Canada Atlantic Railway to Montreal.

Intending shippers may obtain definite information later on from the local railway agent as to when the cars will pass their station.

A circular sent out from the Agricultural Experiment Station at Geneva, N.Y., warns the farmers of that State to be on their guard against a class of swindlers who have succeeded in victimizing many a rustic community. These fellows go to a village and dazzle the inhabitants with stories of the profits that can be made out of an up-to-date creamery. The next step is to organize a stock company, with all the neighboring farmers as shareholders. Then a third or a half of the capital is used in the erection of a building and the purchase of machinery, and the rest of the money is gobbled up by the swindlers.

Bacteria are the little fiends that spoil and putrefy milk and cream. They are microscopic vegetable organisms. Just as fungi appear upon wood, so these minute growths appear in flesh, liquids, fruits and everywhere they can get foothold. The bacillus is a bacterium that grows in the shape of a stick. It is an influential stick, often jointed, like a cane or ocrustalk.

Because it is summer and dairymen are busy they can ill afford to stop perusing daily literature. All work and no reading makes those who own cows dull dairymen.

REMOVED OLEOMARGARINE BRANDS.

Wilkins and Butler Found Guilty in the United States Court.

The trial of the case of Joseph Wilkins and Howard Butler yesterday resulted in a verdict of guilty before Judge Butler in the United States District Court, on such of the counts of the indictment under which the removing of labels and brands from oleomargarine packages was charged. There was testimony for the United States that in December, 1896, the defendants removed labels and brands from oleomargarine packages lying at the Baltimore & Ohio wharf. There were no witnesses called for the defense, it being merely contended that the Government had not made out its case.

After the verdict the defendants' counsel gave notice for a motion in arrest of judgment and for a new trial, and asked that the defendants, both of whom are Washingtonians, be allowed to go on bail until such time as the question of a new trial shall be passed upon. The Court refused the request, stating that defendants are not allowed to remain at liberty under bail unless extraordinary circumstances are shown.

The fast Atlantic service seems to be steady, if somewhat slowly, maturing. The latest announcement that five steamships have been ordered will be welcomed as a long step toward the realization of the scheme upon its present very economical basis. Five vessels are a very adequate and even liberal allowance for the work. An agent of one steamship company which tendered for the contract said that by close work three fast steamships might be sufficient. It has generally been supposed that four would be sufficient. It is not improbable that the extraordinary prosperity of Canada at the present time, the increase by leaps and bounds of its export and import trade, the actual and prospective Yukon trade, have emboldened the company to increase the capacity of its line beyond its actual contract needs.

The U. S. Supreme Court has decided the anti-oleomargarine laws of Pennsylvania and New Hampshire to be unconstitutional. The dairymen in these States will have to depend on the quality of their butter as a defence against imitation, and it should be defence enough. Oleomargarine will not be preferred by anyone accustomed to eating good butter.

CANADIAN VERSUS UNITED STATES CHEESE.

A Candid Admission.

Lecturing before the Massachusetts State Board of Agriculture, Major Henry Alford, chief of the dairy division of the United States Department of Agriculture, said:—"Our foreign cheese trade is in a bad plight; having once been in a flourishing condition, it has almost been destroyed by senseless and shameful practices. Manufacturers and merchants from avaricious motives have sent abroad during the past few years large quantities of low grade and counterfeit cheese, which has disgusted British

buyers, and ruined the former excellent reputation of our cheese. . . . This is practically stimulating, because

Canada Has Gained All We Have Lost.

"By confining her manufacture to strictly honest, full cream cheese, constantly improving in quality, Canada has won the place formerly held in the British markets by cheese from the United States. She now exports annually as much as this country ever did, and our exports of cheese are less than those of Canada were sixteen or seventeen years ago. At the same time, our domestic markets in many parts of the country have been flooded with fraudulent cheese to such an extent that consumption has greatly decreased, and our home cheese trade has been generally demoralized."

The above is a frank and candid admission of the extent to which United States cheese has been injured by the manufacture of filled cheese, but we believe, remarks the Montreal Trade Bulletin, that last season comparatively little of this bogus cheese was made in the United States, and furthermore, that the quality of genuine United States cheese improved vastly last season, so much so that some of our dealers pronounced them almost equal to Canadian, so that our factorymen should still strive to excel in cheese making. There is this, however, to be said in their favor, namely, that they have never turned out a box of filled cheese.

What is the thermometer? How is the thermometer? What does the thermometer say? There is probably no inquiry which is daily the cause of more awkwardness of expression, for it seems to admit of no convenient form. The same difficulty, no doubt, existed in the early days of clocks, resulting, doubtless after many twistings and torturings of the then English tongue, into what's o'clock? or what o'clock is it? In spite, however, of all, it must then have cost to get a form of words for easy use, that form does not prove transferable, and cannot be used for the thermometer. Of the time we can say, what time is it? But although the thermometer purports by its name to be a measure of heat, we cannot well say, how hot is it? or, how cold is it? For one thing the cold that the thermometer measures is not the equivalent of the cold that the body feels, as we need much more clothing in Britain, with the thermometer at forty, than in Canada with it at twenty. In China, they measure the cold. It is a two coat day or a six coat day. Probably the most elegant expression within reach is, what is the temperature? That is, however, too learned and abstract a phrase to trip easily on the common tongue.

WHY?

Can any of the factorymen explain why the following clipping appeared in the market reports of a Montreal daily, date June 2, 1898: "As a matter of fact, the bulk of the offerings lately have been of undesirable kind, and the factorymen either are getting careless or they are selling their make too green. Reference has been made to this before, and unless attention is paid to it, it will have

ill effects of a far reaching nature to Canadian cheese."

It has been shown by analysts that a young person weighing 154 pounds is composed of ninety-six pounds of water, three pounds of white of egg, a little less than one pound of pure glue, 34 1-2 pounds of fat, 8 1-2 pounds of phosphate of lime, one pound of carbonate of lime, three ounces of sugar and starch, seven ounces of phosphate of magnesia, and a little ordinary table salt. Think of it, young man! That beautiful young lady whom you worship as a pillar of unadulterated sweetness, doesn't contain three ounces of sugar.

IT'S ICE THAT WILL DO IT.

In all the efforts that are to be made to attain this result we shall have to look to the utilization of an article, the abundance of which has been from all time a matter of reproach to Canada. The profitable sale of Canadian butter in England depends upon the use of ice. Nobody is going to dispute that we have plenty of it. Experts conceded that we cannot work up a big butter business without it, and that there is practically no limit to the volume of the business that can be done if we make the best use of what we have. —Montreal Herald.

The Iowa Dairy Mutual Fire Insurance Company has issued a circular containing the following on spontaneous combustion:—"Sawdust in ice-houses is self-ignitable, caused by spontaneous combustion in hot weather. In order to avoid a fire from above cause, the sawdust should not be allowed to pile over four or five inches on top of the ice. The surplus should be removed and kept out of the icehouse. Where the sawdust is allowed to accumulate on the top of your ice, it will consume the ice. It should have daily care through the hot weather."

ASPIRATION.

We have received a wonderful number of letters expressing the conviction that 1898 has better things in store for all of us. A twentieth century spirit of hopefulness prevails among the people. That's among the people. That's right. Grumbling, fault-finding, pessimism—these don't make things better. Sensible criticism may be effective when backed up by sensible effort toward improvement. A determination to make the most of one's opportunities is the secret of real success. To aspire for higher things is always helpful, if combined with a reasonable amount of contentment. The gospel of hope never hurt anybody.

CHEESE AN ARMY RATION.

Washington, D.C., June 23. — Congressman Chickering had a consultation with the Secretary of War and the Secretary of Agriculture yesterday on his bill, making cheese an army ration, and afterwards appeared before the Committee on Military Affairs.

The committee reported the bill to the House favorably.

The amendment adding "full cream" was adopted; also tri-weekly ration instead of daily.

The Canadian Cheese and Butter Maker.

Devoted to milk, and its manufactured product.

PUBLISHED MONTHLY BY
GEO. F. BROWN & CO.,

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JULY.

SPECIAL TO CHEESE AND BUTTER
MAKERS.

Gentlemen:

This is your own paper!

The editors and publishers are practical Canadian cheese and butter makers. We have had the aid of study and practice at the Kingston, Ont., Experimental Station and Dairy School, and for years have turned out on the market, top price export cheese, from the very best factories in our fair Dominion.

We have access to the best Library on dairy subjects that exists.

We scan the hundreds of dairy notes, as they appear in home and foreign publications.

We report dairy conventions and lectures.

We have noted the need of an "up-to-date" newspaper filled with bright ideas, for your benefit.

We have now put three thousand dollars into your paper, and hope to be appreciated.

The very nature of your business, compels you to work apart, one from the other, and therefore you do not have the chance to profit by one another's experiments, or, experiences.

In different parts of the country, and of the world, men are devoting their whole time and large sums of money to experiments in our line of work.

Legislative bodies are appropriating plenty of money, and are busy sending out reports, bulletins, and pamphlets, describing and defining the simplest and best plans to turn out the best quality cheese and butter, the best plans to keep it in good condition, and to market it.

At the scores of stations throughout the world, experiments are being tried daily for your benefit.

Many men seldom take more than one subject, and often devote their whole life to it.

Some are workers in the factories or creameries; others are teachers in worthy universities, or dairy colleges.

Schools are conducted solely for this kind of experimental and practical work. If these men were your neighbors, or, fellow workmen, so that you could profit by the result of their practical experiences, it would help you in your work.

When for years a man studies how to cure a cheese, or, turn out nice flavored butter, and during those years actually succeeds in turning out nothing but the best article. Why he should be able to give us valuable pointers about the work, to assist others.

You cannot afford the time to hunt these men up for yourself alone.

We can.

We get what they learn of practical value, and our readers get the first benefits.

We practically make them your neighbors, or visitors to your work-room.

Surely there is no "book," or, "newspaper," cheese or butter making about this!

It is not the hollow theory of scientific minds, or jumbled ideas of "hack" writers.

It is what practical men have worked out.

We give with pen and picture just what you most want to know.

We send the best information to thousands.

Remember, we are working for you, and that it is your own paper.

We don't know everything.

We couldn't shoe a horse any more than a woman can sharpen a lead pencil, but we know when a razor hurts, and can tell when we have been rung on a bad cigar.

Being practical cheese and butter makers with some newspaper experience, we know what the factory man needs, and you can depend on it, we will give it to you.

We hope you will be pleased with our work.

Will you sustain us?

We want subscribers!

We want no man's money, unless we can give him more than his money value in return.

Send us fifty cents for a year's subscription; and if you are not satisfied in three months that you get more than the value of your money, let us know, and we will return your money.

Do you wish anything fairer?

You know Canada has a large territory; it would take us "some length of time to travel over it, and make a personal visit to you all, however much we desire so to do.

So give us your hand and consider this a visit, and let us hear from you.

If you wish us to make a grand suc-

cess, let us hear from you at once.

Faithfully yours,

GEORGE F. BROWN & CO.

TO PREPARE BUTTER TUBS.

In preparing butter tubs to be filled with butter:

1. Scald inside.
2. Rinse with cold water.
3. Fill with cold salt water, and let remain all night.
4. Rinse in morning.
5. Never let any water get on outside of the tub during process.

There is no sight more pleasing to gods, man or angels than a shining clean creamery or dairy without any slop, dust, spider webs, mold, rust, rottenness, bad smells or filth anywhere to be seen.

VITRIOL SOLUTION.

The New York Experiment Station recommends soaking parchment paper in a solution of blue vitriol, one pound of vitriol to 15 gallons of water, as a preventive of mold on butter wrapped in such paper. The copper prevents the growth of the mold. Allow the parchment to lie in the vitriol solution a few minutes, then take it out and dry it. It is then used in the ordinary way.

W. J. SPILLMAN.

TO HELPERS AND ASSISTANTS.

Can you afford to be without our paper, in learning to become a first-class workman? Just think! only fifty cents for a year, which makes a book of 576 columns of useful information in your business.

TWICE A MONTH.

It is our intention to issue this paper twice a month in a short time. No extra charge for subscription price to those who subscribe within the next 30 days.

CANADIAN CHEESE ON TOP.

Our Goods the Admiration of Visitors to the Islington Fair.

At the annual dairy show which was held this season at Islington, the Colonial department was the admiration of all visitors. The importers of Canadian cheese seem to have taken a great interest in trying to secure the first prize, as all available space was occupied and the competition most keen. The firm who carried off first prize is one of the largest importers of both cheese and butter from Canada, viz., Messrs. Crew, Widgery & Co., whose head office is in Bristol. The London Times of October 21st, says:—"Colonial dairy produce, the prize is won by Messrs. Crew, Widgery & Co., of 36, Snow Hill, West Smithfield. The handsome Gilt Edge Canadian Cheddars shown on this stand would be as creditable to Somerset or Wiltshire as they are to the enterprising dairy farmers of the Dominion." It is only fair to the manufacturers to say that the mammoth cheese, weighing 1,000 pounds, each, were manufactured by Mr. D. M. Macpherson, M.L.A., of Glengarry, and the Canadian cheddars by Mr. Wm. Eager, of Morrisburg. The selection of these cheese was left to Messrs. D. A. McPherson, & Co., Montreal, and it is evident they displayed good judgment. The 1,000 lbs. cheese spoken in the above article, were made by Geo. F. Brown, one of the publishers of this paper.

OUR "PATRONS' BULLETINS."

Knowing, that to make good cheese or butter, the maker must have good

milk to start with, and that to get good milk that the maker should assist the producer, we have, at quite a cost of time and money, prepared a series of "Patrons' Bulletins." Number one appears in another page of this issue, it is on the care of milk. Nos. 2 and 3 will be on that all absorbing subject and necessary adjunct to the dairy farmer. The Hog, and how every man who keeps cows to sell milk from can add from ten to five hundred dollars to his profits each year, it tells it all, boiled down in plain language, the latest information in regard to bacon, pork, and the best plan to produce it cheap, and at a big profit.

Number 4 will tell all about "Ensilage and the Silo."

Number 5 all about the "Call, and How to Make the Good Milk Cow." Each number will occupy one page, in one paper and will be followed by other subjects in the following issues.

If our friends the cheese and butter-makers, will call the especial attention of their patrons, to this benefit and money profit, that can be made from following the advice, which will be given in bulletins, Nos. 2 and 3 on the Hog, and raising bacon, pork, they can get up a club of nearly all their patrons by the mere asking. It was done by a cheese maker in Glengarry county, only last week. Numbers 2 and 3 will be actually worth the price of our subscription for fifty years to every farmer who reads it, and profits by the advice.

THIS SAMPLE COPY.

Of our paper is sent to you free, and we invite you to read and enjoy its contents. After so doing we invite you to send us at once your subscription together with as many of your friends as you can.

Of course, we cannot afford to distribute papers free and keep it up. So if you wish it kindly subscribe for it, as only one free copy will be sent to each person.

We have made the price so low that everybody can afford to subscribe and not miss it.

PART PRINTED IN FRENCH.

In a few weeks we intend to issue with this paper 16 columns each issue, printed in the French language, for the benefit of the French reading citizens of Quebec Province.

OUR FIELD.

We are aware that the many worthy "farm" and "dairy" papers, and departments in rural newspapers now in circulation, are filling their needed places to advantage.

Our publication is not intended to interfere in the least with them.

We propose to fill our columns with "up-to-date," bright results and thoughts, intended to interest cheese and butter makers everywhere.

In doing that and doing it in our best manner, we will, first of all, cover an especial ground: that of Canadian Cheddar cheese, and Canadian gilt edge butter making.

The care of the milk from the cow to the product.

The different stages of manufacture.

The curing and keeping processes.

The boxing.

The shipping, by team, rail and boat.

The refrigeration and cold storage.

The home and foreign markets.

The cheese boards, etc., etc.

We think the subjects in view are enough to interest all those in any way connected with this vast business and growing industry.

And we are proud to know that we are giving you the only paper in the world published on the subjects.

IN ANOTHER MONTH.

We will have over one hundred contributors to the Cheese and Butter Maker. The writers are the best posted men in the world on their special subjects.

Subscribe for "The Canadian Cheese and Butter Maker." Only 50c. per annum.

NOTES.

Dairymen simply turn their pocket books wrong side out every time they take poor milk to the factory, and get it accepted.

Don't forget that milk can be kept on the farm overnight pure and sweet without the use of ice. All you have to do is to aerate it and aerate it and aerate it thoroughly. No half way business, remember.

By taking good care of your milk you are earning money just as fast as by making your cows yield more of it.

We often meet dairymen who profess to have no faith in the Babcock test. They are generally owners of poor cows, who patronize creameries where there is talk of paying for the milk according to the test. Their very argument against it proves that it is a good thing.

Any dairyman who had a fourth or third more cream in his milk than his neighbor does not like to divide it up with him by taking a common share from the factory returns. The Babcock test prevents unjust robbery, and no truly honest dairyman can find fault with it.

We often hear it advised, "Milk your cows regularly, or they will shrink in yield." That statement should be put a little more positively. You must milk them regularly or they will shrink every time.

Dairymen often imagine that it is optional with them to do thus and so. They should all understand that there is a right way and a wrong way, and that the first always means profit and the latter always means loss.

Did you ever think that when milk is once tainted or in any way spoiled you can no more make it good milk again than you can rotten apples sound? A chemical change takes place that ruins the milk forever. That is the reason why all intelligent butter and cheese makers lay such stress on its care.—Exchange.

AS TO ACIDITY.

Acidity is a natural change, and one necessary in certain parts of cheese and butter making. However, dairymen should not take it upon themselves to ripen milk for the manufacturer.

That is the last thing that the cheese and butter maker requires. Milk must be delivered sweet, and then the manufacturer can ripen it to just the degree necessary to produce the best results.

PURIFYING MILK.

Our personal practice for some years in preparing milk for bottling showed conclusively that the passing of a current of cold pure air, washed in the way suggested from every particle of dust or impurity, did have a good result, which was proved by the fact that milk is air washed, as we might say, kept sweet, in the equally well prepared for four days longer than the un-aerated milk. This practical evidence of the advantages of proper aeration and cooling, by pure, cold air, goes to show that if well done, in a scientific manner, the aeration of milk is useful for this purpose at least; and if so, it may well be believed that it will be found useful for the buttermaker.—Country Gentleman.

The cheesemaker can make a pound of cheese from one-half pound less milk if the milk is promptly aerated and cooled by the farmer. At least \$500 a year can be thus saved to a factory making up one million of pounds of milk, and such cheese is better flavored, longer keeping, and higher priced.

Above all, farmers must understand that good butter and cheese cannot be made from dirty or tainted or un-aerated milk. This is the law and the prophets.

"Prevention is better than cure." It is better to keep dirt out of the milk than to strain it out, however carefully done.

Points Most Needful of Care in Handling Milk for the Factory.

Canadian Dairy Commissioner in His Third Annual Report.

(By PROF. J. W. ROBERTSON.)

1. Only the milk from cows in good health and apparent contentment should be used.

2. Until after the eighth milking it should not be offered to a cheese factory.

3. An abundant supply of cheap, succulent, easily digestible, wholesome, nutritious food should be provided.

4. Pure cold water should be allowed, in quantities only limited by the cow's capacity and desire to drink.

5. A box, or trough, containing salt, to which the cows have access every day, is necessary for the keeping of cows profitably.

6. Cows should be prohibited from drinking stagnant, impure water, the responsibility for giving effect to that beneficial prohibition rests entirely with each individual farmer.

7. Cows should be treated with invariable kindness, and should not be driven fast.

8. All the vessels used in the handling of milk should be cleaned thoroughly immediately after their use. A washing in tepid or cold water, to which has been added a little soda, and a subsequent scalding with boiling water, will prepare them for airing, that they may remain perfectly sweet.

9. Cows should be milked with dry hands, and only after the udders have been washed, or brushed clean.

10. Tin pails only should be used.

11. All milk should be strained immediately after it is drawn.

12. Milking should be done, and the milk should be kept in a place where the surrounding air is pure, otherwise the presence of the tainting odours will injure the milk.

13. All milk should be aired immediately after it is strained.

The treatment is equally beneficial to the evening and morning messes of the milk.

Neglect to air it will increase the quantity of milk required to make a pound of fine cheese.

It has been found to be impracticable to make strictly first-class cheddar cheese, from milk that has not been aerated.

14. In warm weather all milk should be cooled to the temperature of the atmosphere after it has been aired, but, not before.

15. Milk is better by being kept in small quantities over night, rather than in a large quantity in one vessel.

16. Milk stands should be constructed to shade the cans or vessels containing milk, as well as to shelter them from the rain. Swine should not be fed near the milking stand.

17. Only pure, clean, honest milk should be offered, and it should be paid for according to its quality and quantity.

TURNIPS, RYE, RAPE, AND APPLES A CAUSE OF LOSS.

I now want to draw attention to some important features of our business in regard to which I think a great many improvements may be made upon our last season's work. I cannot for my life understand why patrons who are supplying milk to cheese factories and butter factories will persist in feeding improper food to their cows, knowing at the time they are doing so that the flavor of the butter or cheese made in the factories will be impaired thereby; and that with such food as turnips, rye, rape, apples, etc., etc., cheese will depreciate in value all the way from a 1-2 cent to 2 1-2 cents per pound. If our farmers may grow food such as turnips, rye, apples, or anything which will injure the flavor in milk, butter, or cheese, why not feed it to

the other stock on the farm and not to the milk cows? I think I am within the limit when I state that I know of at least forty factories at which cheese have been rejected, and then resold at a reduced price of all the way from 1-2 cent to 2 1-2 cents per pound because the patrons of those factories would persist in sending to the factory milk from cows which had been fed some of the above-named foods. All patrons of cheese factories are manufacturers, inasmuch as our factories are co-operative; and it should be to their interest to stop such practices, which injure our good reputation for fine cheese and reduce or lessen their profits.—A. F. McFarlane.

UNCLEANLY METHODS.

Many dairymen would feel greatly insulted if told that the strictest decency and cleanliness did not reign over their methods, but unfortunately filthy is a term which applies to the conditions under which milk is obtained in, I venture to say, over ninety cases out of a hundred. For the present we will draw attention to the sources of contamination which proceed from the cow herself and the person who milks her. The coat of the cow is filled with dust, to which quantities of bacteria are attached, and during the process of milking, the continual snaking of the udder dislodges particles of dust, filth, and hair, which fall into the pail. During the winter, when the cows pass a considerable portion of the day in stalls or yards, their under parts become considerably soiled with excrement. That a large amount of soiled matter falls into the milk can be easily proved by allowing the milk to remain for some few hours in the pail, when a deposit will be found at the bottom. Of course, all milk is generally passed through a strainer, and this process removes most of the solids, but the germs introduced with the solids into the milk are washed off by the fluid that cannot be retained by any strainer. Much can be done toward lessening this source of contamination, by keeping the udder, flanks and under part of the body generally well brushed, thus removing most of the loose hair and dirt, but this grooming alone is not sufficient. So long as the surface is dry, particles of dust are easily dislodged, and a continual shower of them falls into the milk pail. If, however, the udder is washed and the under parts of the body moistened, the misplacement of dirt and its accompanying germs will be reduced almost to a minimum from a riotous service, except by very violent movements.

EFFECT OF RUSTY TINWARE.

At the dairymen's meeting at Aarhus, Denmark, Dairy Counsellor Bogild told how he got a sample of milk from a creamery manager. It was not sour though three or four days old, but had a half rotten smell and a horrible, tallowy taste. He went to the creamery and examined the milk from the patron in question. The can was clean (indeed, the patron and his wife had a reputation for cleanliness), but very rusty inside and barely half full. As he had met a similar smell and taste at another creamery in milk which came in a rusty can, he induced the manager to buy a new can and send it to the patron, with the request to use it instead of the old one. The patron sent back the new can empty, but bought one himself (huffy, much like some of our American patrons), and sent half the milk in this and half in the old one. The

milk was perfect in the new can, and as bad as before in the old rusty one.

When the dairy counsellor wanted to borrow the old can for further experimenting he was refused, and had to buy it at the price of a new one. He then continued his experiments with milk from other farms, and got the same result—a beastly smell and a tallowy taste. Analysis showed the milk to contain considerable iron, and the trouble was worse when the can was half full than when full. Butter made from this milk was "tallowy."

The can had been cleaned in the usual manner on the farm, with boiling (?) water, and to prove that the trouble was not in "spores" left in the can—it was steamed and re-steamed before using, but the result was the same.

A city milkman in Copenhagen had similar trouble, and there can be no doubt that here is the danger which we must be on the lookout for. Many hundreds of rusty cans have we seen in use, and the demand for cheap cans has induced manufacturers to use poor tin. Will our readers heed the warning?

This is one of the most important "precepts" given to dairymen.

A FEW HINTS.

First of all banish the dog. He has no place in the dairy. He is a relic of brutal barbarism, and no civilized cow will tolerate his dogoned nonsense. For kindness must reign in the dairy, next the stables must be warm, well lighted and properly ventilated. For the cow must be comfortable at all times.

Then be regular in all things about the dairy, feel regular at the same time and in the same way. Milk regular and in the same order, for the dairy cow is a very orderly animal.

And the dairyman who takes an interest in his occupation and reads a good dairy paper and tries to improve himself, depend upon it, his herd will improve, and when you find a man of this sort you will find that he has

"Corn in the corn-crib,
Chickens in the yard,
Meat in the smoke-house,
A tub full of lard.

* Cream in the cream pitcher,
Molasses in the mug,
Honey on the buckwheats,
And cider in the jug."

Milk in the dairy,
Butter by the load,
Coffee in the box,
And sugar in the gourd."

E. O. Adee, in Monrad's Dairy Messenger.

Hauling the milk requires also some care. The cans should be full, and in warm weather they should be covered with a wet blanket, with a dry one on top. In cold weather cover them to prevent freezing. Promptness in delivering the milk is highly desirable, if it is done by a hired milk hauler. The milk producer should visit the creamery now and then to consult with the butter maker.

Fifteen or twenty minutes spent on taking the proper care of the milk may improve the butter or cheese to the tune of thousands of dollars at a factory during the year. Where the combined aerators and coolers are used the only time lost is in cleaning them.

The Butter Maker can do much toward improving the flavor of his butter by the prompt aeration and cooling of his milk. Aeration removes strong food odors, and the reduced temperature checks the growth of the common scouring bacteria, thus allowing the flavor making bacteria to develop, making perfect flavored high priced butter.

CHEESE MAKERS

Wishing some of these Bulletins on the care of milk, so give to their patrons, will be furnished them at the following rates: 10 for 10c.; 20 for 15c.; 30 for 20c.; 40 for 25c.; 100 for 40c.

Address The Canadian Cheese and Butter Maker, Williamstown, Ont.

"THE PROPER TEMPERATURE OF CHEESE ROOMS."

By James Williams.

Much has been said and written about the proper temperature of the cheese curing room and but little on the proper temperature of the making and press rooms. The temperature of these latter is quite as important as those of the former, for it is here that the quality of the make of the cheese may be said to begin, and if not properly begun and continued it is not likely that it will end right, even in the best regulated curing room, as it should.

The temperature has much to do with the quality of the cheese, therefore the necessity of buildings where the temperature can be regulated as much as possible. Why should there be so much indifference in reference to this matter with men whose milk, or the proceeds therefrom, is perhaps the backbone of their farms, I cannot understand.

When the business is controlled by stock companies, one would suppose they at least would supply proper buildings, even though the patrons of private factories do not allow a sufficient percentage to provide them. Many factories have no way to make them sufficiently warm or comfortable for the purpose of turning out the highest quality of product. Many of the rooms are so open in structure that a stove would have but little influence in producing a uniformity of temperature.

Making and press rooms should be so constructed that they can be easily kept at a temperature of about 75 or 80 degrees in the spring and fall, and they should also have plenty of ventilation. Particularly in summer every care should be taken to secure a pure atmosphere. The advantages of a proper temperature are many. In a cool room the temperature cannot be kept up even by covering the vat, as is generally done, without frequently applying the steam, in which case it must be stirred, and this stirring allows more butter to pass off in the whey than would if a higher temperature could be maintained in the room.

When the vat is set in a cool room it will not retain the heat as desired and does not coagulate properly. It becomes too cold even with covering, and when cut it will be soft and the whey white, showing that a considerable quantity of cheese is passing off with the whey.

After the curd is scalded, unless the temperature of the room is warm the steam may require to be applied repeatedly to avoid a whey soaked curd, which too often occurs in spite of every precaution taken when made in cold rooms. When the cheese thus made are cured they are off flavor, salve and soft.

Again, while dipping the curd from the vat to the sink, where it lies to mature, and that the whey may drain preparatory to grinding and salting, before putting to press it frequently becomes so cold while undergoing the necessary amount of handling in cold rooms that the whey will not leave it, and if you do not get a whey soaked curd in the vat, you probably will get it in the sink, and when put to press it has become so cold that it will not adhere properly, the whey will not leave it, and the result most probably will be a soft, spongy, rindless, unfinished mass of whey soaked curd, and after being kept in a curing room of the proper temperature for a few days the whey will in all probability start to run from the cheese to the floor and in time will be a soft, bitter, discolored and bad flavored cheese.

I have noticed during the past two seasons that some makers have made really fine cheese in the warm months. On visiting their factories after their October and November make was in the curing room some time, you would suppose by the appearance of the soft, spongy, luffy cheese, that you had made a mistake in the factory, or that a new maker had been employed. The principal cause was a cold making room and a cold press room. In a cold press room the work of pressing will be improperly done, the curd will not adhere properly, the bannage will not be on properly, nor will there be a proper rind.

I cannot see why with making and press rooms of the proper temperature, and the necessary attention on the part of the cheese-maker, that better cheese cannot be made in October than in any other month in the year, and in the first half of November quite equal to the first half of September.

The loss sustained every season by cold making and press rooms would go a long way in providing rooms where the temperature could be so regulated that the business could be carried on with much greater success and profit.

CHEAP BUTTER-MAKERS.

Another cheap buttermaker story was told to me last week. One of our dealers, who has a large trade for fancy butter, in speaking of butter-makers, said: "Some directors of creameries are about as able to conduct the affairs of a company as a lot of school children. We have been handling a fancy mark of Minnesota butter for a number of years. It has been so uniform in quality that it brought a fancy price every week. About two weeks ago the directors of the creamery changed butter-makers, in order to save a few dollars in salaries. I wrote to the company that they were making a mistake, but they knew better of course. The first lot of butter made by the new and cheaper man was way off in quality, as was also last week's make. In order for you to get a better idea of the foolishness of creameries hiring cheap, incompetent butter-makers, especially when they have a man who never has failed to turn out a fine article of butter, I will say that this company last nearly as much on the first two shipments made by the new man as they expected to save in hiring him. They wrote me that the new man had been unfortunate, but that his butter would be all right from now on. Perhaps it will, but I doubt it.

The butter-maker who was relieved is now turning out butter at another creamery, and it is as fine as you will find in this market. He wasn't unfortunate. I tell you creamery-men will find the high-priced butter-makers the cheapest in the long run."—N. Y. Produce Review.

THE ADVANCE IN PRICE OF CHEESE.

The recent advance of about one cent in the price of cheese, means thousands of dollars to factory-men.

From the opening of the season the prices have been under the level of a year ago, and with the production also behind last year, it was discouraging.

The outlook at present is good, and the farmers and factory-men will perhaps find that it is a good thing after all to have the markets open on a low but healthy basis.

But, we believe no dairyman can make any money in the business, in producing cheese, at any less than eight cents.

CHEESE IN ENGLAND.

Alfred J. Bryce, who recently returned from England, being interviewed, among other things, said:

"Yes, apart from the strikes, I may say that when bread is high in England, people look for lower prices in butter and cheese. For instance, when a man has to pay two pence more for his loaf of bread, he will most likely abstain from indulging in the luxury of cheese, although he could not very well do without butter. The buyers were caught last fall in their cheese purchases, and in fact I consider our farmers got fully \$500,000 more than they were entitled to, making the calculation on the basis of a legitimate price for the article."

"Does it appear that Canadian butter will reach the commanding position in the English market as that obtained by our cheese?"

"I do not think there is any doubt about it. As I stated just now, the quantities will be all right, but we will have to be satisfied with reduced prices for a time at least."

HOW TO FIND THE TOTAL AMOUNT OF BUTTER FAT IN MILK BY THE BABCOCK TEST.

Suppose 358 pounds of milk tests 4.5, how much fat does the milk contain? Answer: Multiply the amount of milk by the amount it tests, viz.:

358 lbs Milk tests

4.5

170.0

1432

1611.0 lbs.

Therefore, 358 lbs. of milk testing 4.5, contain sixteen and eleven one-hundredths lb. of fat.

Suppose you have 1,400 lbs. of milk testing three, decimal four.

Answer:

1400

3.4

4760

4200

47.000 lbs fat.

Etc., etc.

In our next issue we will give the whole process of dividing dividends, which every cheese and butter maker should learn.

Setting Up Farm Separators.

How It Can Be Done Correctly By Any Farmer.

The farm separator has made more headway in the past year in northern Iowa than in the five preceding years. One year ago the feeling was one of uncertainty, and while the farm separator had many warm friends it also had many strong enemies. This spring finds some of the most aggressive of last year's enemies using the farm separator every day, and the reason they give is that they cannot afford to be without one. There are still large numbers that do not use them and have no desire to use them, but when a change is made it is for the separator and not against it.

Some mistakes are made in setting up a separator by those with no experience in that line of machinery. One man belted the large band wheel of his tread power to the large pulley of the separator. Luckily the belt slipped and he was spared a "Maine" explosion. By observing a simple law of mechanics all trouble on this score can be averted. The number of revolutions of the pulley on the separator are always given by the manufacturer. The diameter of the pulley is known, or can be found by measuring. The diameter of the band wheel of the tread power and the number of revolutions per minute are easily ascertained. Now the number of revolutions of the driving pulley multiplied by the diameter of the pulley will equal the diameter of the driven pulley multiplied by its diameter. Suppose the diameter of the tread power pulley is four feet, and the revolutions sixty per minute. The product is 240. Now suppose the diameter of the separator pulley is one foot. The product of this diameter and the number of revolutions per minute must also equal 240, and as the pulley is but one foot in diameter it must make 240 revolutions per minute. This is nearly six times too great and would be disastrous. It is plain that the tread power pulley is too large. To find the size of pulley required on the tread power (or counter shaft) multiply the diameter of the separator pulley by its velocity, divide this by the number of revolutions per minute of the tread power or counter shaft pulley, and the quotient will be the diameter of the pulley required on the tread power or counter shaft—that is, it will give the diameter of the driving pulley.

Suppose the separator pulley should be speeded to 42 revolutions and its diameter is 12 inches. The product is 504. Count the number of revolutions made by the driving pulley or shaft. Suppose it is found to be 63 per minute. Divide 504 by 63 and we have the diameter required for the driving pulley, or eight inches.

OUR PATRON'S BULLETINS.

Knowing, that to make good cheese or butter, the maker must have good milk to start with, and that to get good milk that the maker should assist the producer, we have, at quite a cost of time and money, prepared a series of "Patrons Bulletins." Number one appears in another page of this issue, it is on the care of milk. Nos. 2 and 3 will be on that all absorbing subject and necessary adjunct to the dairy farmer. The Hog, and how every man who keeps cows to sell milk from can add from ten to five hundred dollars to his profits each year, it tells it all, boiled down in plain language, the latest information in regard to bacon, pork, and the best plan to produce it cheap, and at a big profit.

Number 4 will tell all about "Ensilage and the Silo."

Number 5 all about the "Call, and How to Make the Good Milk Cow." Each number will occupy one page, in one paper and will be followed by other subjects in the following issues.

If our friends the cheese and butter-makers, will call the special attention of their patrons, to the benefit and money profit, that can be made from following the advice, which will be given in bulletins, Nos. 2 and 3 on the Hog, and raising bacon, pork, they can get up a club of nearly all their patrons by the mere asking. It was done by a cheese maker in Gleanery county, only last week. Numbers 2 and 3 will be actually worth the price of our subscription for fifty years to every farmer who reads it, and profits by the advice.

At the regular Easterly Cheese Buyers' Supper, held at Ottawa on Dec. 12th, 1897, the following was the Bill of Fare.

Soups.

Peanut, Chipmunk, Dried Corn-cob, Angle Worm, Potato Bug, Plantain Salad, Beebe.

Roasts—

Bull Beef, Green Sauce, Kangaroo, Parsnip Jelly, Hog's Liver, Pumpkin, Sauce, Bare Legs, Plain, Hens Vintage of '64 Cut Nail Dressing.

Game—

Vulture, Garlic Stuffing, Fricassee Owl, Mud Hens, Gravel Sauce, Bull Pup Pie, Boned Rat, Squirrel Toes, Wild Cat, Turn Over Dressing, Sliced Crow, With Onions, Zebra, old Corset Sauce.

Entries—

Rat Giblets, Chicken Bones, Tallow-ed Toast, Wasp Pie, Calves, Latest Styles in Beans, Mice Rolled in Sawdust, Jack Ass Ears, Played Off as Mushrooms, Eagle's Eyes, Viper Sauce, Kittens Smothered in Crude Oil, Buzzards, Red Hair Lining, Horse Tongues in Vinegar, Tenderloin of Jack Ass in Molasses, Toads Eyes in Truffles.

Pastry—

Milk Weed Pie, Bean Pie, Onion Pie, Red Clover Pie, B. S. Pudding, Benzine Sauce, Tallow Blanche Mange, Bean Pulling Boiler in Stocking Leg, Sour Milk, Bark Tea, Bran Coffee, Bolts and Nuts, Rotten Apples.

Cheese—

Subscribe for "The Canadian Cheese and Butter Maker." Only 50c. per annum.

Madge—"I'm in an awful fix" Ethel—"What is it, dear?" Madge—"Jack insists that I shall return his engagement ring, and for the life of me I can't tell which one it is."

The Reid Improved Danish Cream Separator.

Capacity 2500 to 3200 lbs. per hour.



While it was in the front rank and was placed in 21 Creameries in Western Ontario last fall, the manufacturer being always on the lookout wherein he can improve, has recently perfected some improvements, that places it further in the front rank. It now has the largest skimming capacity of any separator on the market and can run a larger quantity through without having to stop to clear up. Can be run on an ordinary floor, requires very little power or oil. If interested send for Illustrated Circular and Testimonials.

Gold Medal Rennet Extract.

Cheese and Butter Color.

Is guaranteed to be the finest and strongest on the market and to give entire satisfaction or may be returned at my expense if found otherwise.

The above are two lines but I sell everything required in the manufacture of Butter and Cheese. When you have any requirements or know of any in connection with factory, write me in regard to same.

CHAS. D. CHOWN, 229 Princess Street,

KINGSTON, ONT.

HOW OUR CANADA GIRLS KISS.

The Ottawa girl, the pride of the country,
In her clinging and soulful way,
Absorbs it all with a yearning yearn
As big as a ton of hay.

The Frontenac girl bows her stately head,
And she fixes her stylish lips
In a firm, hard way, and lets them go
In spasmodic little snips.

The Toronto girl removeth her specs,
And freezeth her face with a smile;
Then sticks out her lips like an open book,
And cheweth her wax meanwhile.

The Cornwall girl says never a word,
And you'd think she was rather tame,
With her practical views of the matter in hand,
But she gets there just the same.

The Montreal girl gets a grip on herself,
As she carefully takes off her hat,
And she grabs the prize in a frightened way,
Like a terrier shaking a rat.

The Windsor girl, so gentle and sweet,
Lets her lips meet the coming kiss
With rapturous warmth — and the youthful souls
Float away on a sea of bliss.

The Brockville girl, a creature divine,
Whether wife, a widow, or miss,
Looks into your eyes with starlit orbs,
And puts her whole soul in her kiss.

The Kingston girl will first refuse,
Just to have you insist and plead;
But when she finally does consent,
Her kiss, you'll confess, takes the lead.

The Collego girls, close their dreamy eyes,
When asked to osculate,

And lets the vandal steal the kiss,
Which they really like first-rate.

The Quebec girl neither sighs nor pines,
Nor acts in a manner rude,
But she goes about kissing in a business-like way
That catches the average dude.

A PROBLEM IN MUTE LOVE-MAKING.

Paul Millken, who is quite an expert in the language of deaf mutes, says that one morning he was coming down on the Avondale car, when he became interested in a discussion between two mutes.

"Say, I want your advice," said one of them, using his hands as vocal organs.

"I shall be happy to oblige you," said the other.

"Are you up on the tricks of women?" inquired the first one.

The second man modestly admitted that he knew something of the gentler, although he disclaimed being an oracle.

"Well," resumed the one who wanted advice, "you know, I am in love with Mabel—that pretty little blond, you know. At last I made up my mind to propose to her. Last night I made the attempt."

"And she turned you down?" eagerly inquired his friend, his hands trembling so with excitement that he stammered badly.

"That is what I am coming to," said the first. "I don't know whether she did or not. You see, I was somewhat embarrassed, and the words seemed to stick on my hands. And there she sat, as demure as a dove. Finally my fingers clove together, and I could not say a word. Then Mabel got up and turned the gas down."

"Well?"
"Well, what is bothering me is this: Did she do that to encourage me and relieve my embarrassment, or did she do it so we could not see to talk in the dark, and so stop my proposal?"—Cincinnati Enquirer.

WASTED OPPORTUNITY.

She—How dare you kiss me, sir?
He—Because I love you.
She—How long have you loved me?
He—Months.
She—Oh, George, what a lot of time we've lost!—Towa Toples.

THE ATTAINMENT OF LONGEVITY.

The following rules have been drawn up by Sir James Sawyer, a physician of Birmingham, England, as embodying the secret of longevity. Sir James sees no reason why any one who will faithfully follow them should not live to the age of 100.

1. Eight hours' sleep.
2. Sleep on your right side.
3. Keep your bedroom window open all night.
4. Have a mat to your bedroom door.
5. Do not have your bedstead against the wall.
6. No cold tub in the morning, but a bath at the temperature of the body.
7. Exercise before breakfast.
8. Eat little meat and see that it is well cooked.
9. (For adults) drink no milk.
10. Eat plenty of fat, to feed the cells which destroy disease germs.
11. Avoid intoxicants, which destroy those cells.
12. Daily exercise in the open air.
13. Allow no pet animals in your living rooms. They are apt to carry about disease germs.
14. Live in the country if you can.
15. Watch the three D's—drinking water, damp, and drains.
16. Have a change of occupation.
17. Take frequent and short holidays.
18. Limit your ambition.
19. Keep your temper.

THE FARMER FEEDS THEM ALL.

Unknown.
We publish this poem by request, and we feel quite sure that the farmers will echo its sentiments. The king may rule o'er land and sea, The lord may live right royally;

The soldier ride in pomp and pride,
The sailor ride o'er oceans wide;
But this or that whate'er befall,
The farmer, he must feed them all.

The writer thinks, the poet sings,
The craftsmen fashion wondrous things,

The doctor heals, the lawyer pleads,
The miner follows precious leads;
But this or that whate'er befall,
The farmer, he must feed them all.

The merchant, he must buy or sell,
The teacher do his duty well;
The men may toil through busy days,
Or men may toil through pleasant ways;
Beggars or king, whate'er befall,
The farmer, he must feed them all.

The farmer's trade is one of worth;
He's partner with the sky and earth,
And partner with the sun and rain,
And no man loses by his gain,
And if men rise, or if men fall,
The farmer, he must feed them all.
The farmer dares his mind to speak;

He has no gift or place to seek,
To no man living need he bow,
For he who walks behind the plough
Is his own man, whate'er befall,
Beggars or king, he feeds them all.

TEMPERATURE OF CHEESE MAKING ROOMS DURING THE HOT WEATHER.

A great mistake is being made by many cheese makers, in keeping their work room closed so tightly during the hot weather; all our best authority says throw open the windows and doors, and let the air in. It is not only pleasanter working, but aids in securing a pure atmosphere, and thus turning out a better product.

Of course, it is not best to let too much draft strike the curd, the vat cover will obviate that.

One tiny morsel of humanity was intently watching the building of a wall. Presently she came running in, bubbling over with excitement. "Oh, daddy, do tum and see zo men buttering zo bricks!"

CARE AND CHURNING OF SEPARATOR CREAM

By T. C. Rogers, Instructor Dairy School, Guelph, Ont.

The cream being at a high temperature as it comes from the separator, it is very necessary that ample provision be made for cooling it to a proper ripening temperature immediately after separation. High ripening and churning temperature give the butter a soft, oily texture that diminishes its value. Plenty of ice should be securely stored at the proper time for use when needed and a cream cooler should be made to hold ice and water, over which the cream may flow from the separator to the cream vat. This vat should be deep and narrow with a seven or eight inch space around it for water and ice, so that, for ripening, the cream may be cooled to sixty degrees in warm weather.

In creameries where the cream cannot be quickly cooled to sixty degrees, the butter maker should persist in cooling until a temperature lower than sixty degrees is reached before when the lactic acid is already developing in the milk before separating.

If the cream is to be held for two days before churning, it should be cooled to fifty-two degrees in winter and to fifty degrees in summer. At these low ripening temperatures, the texture of the butter is better. Cream should be stirred frequently for the first six hours after separation and occasionally afterwards while ripening, to improve the flavor and ripen it more uniformly.

We think that the best results can be attained by using a starter to develop lactic acid in the cream, sufficient to cause it to thicken, or coagulate, about six hours before the time for churning. Our experience is that a good clean flavored starter used in this way improves the flavor and keeping quality of the butter and enables the butter maker to ripen the cream more uniformly from day to day. The cream should always be carefully examined before retiring at night, and the person in charge may arrange to have the temperature gradually lowering somewhat, especially in warm weather, so long as the ripening is not delayed too much.

A Starter.

Take one gallon of skim milk or fresh whole milk (having a good flavor) for each ten gallons of cream to be ripened, and warm it to ninety degrees; add to it about a gallon and a half of clean water for each ten gallons of milk used in making the starter and set in a clean, warm place for twenty to twenty-four hours. Then break up fine by pouring or stirring, and strain into the cream the amount necessary to ripen it properly in the desired time. When a good flavor is got in this way, it is advisable to propagate it by Pasteurizing the milk used in making the starter from day to day. Do this by setting the milk in boiling water and stirring constantly while it is heating to 160 degrees, then remove and let stand for twenty or thirty minutes. Afterwards place in cold water and stir till it cools to seventy-five or eighty degrees, then add about a quart of the old starter (having the good flavor) to each ten gallons of Pasteurized milk, with a gallon and a half of clean water at the same temperature. Mix and set in a clean, warm place. Do not stir again until it is wanted; then use from one to four quarts of the starter in each ten gallons of cream to be ripened, varying according to the condition of the cream, the season of the year, and the time allowed for the cream to ripen.

The starter should be put into the cream vat when the separating begins, to fix the flavor of the cream before any undesirable bacteria develop in it.

Churning.

Separator cream should contain about thirty per cent of butter fat, and be cooled to fifty-two de-

grees to fifty-four degrees in winter and fifty degrees to fifty-two degrees in summer, about two hours (and longer if the cream is ripened at high temperatures) before the time for churning. Cream containing a high percentage of butter fat gives less volume to cool and handle, and it can be churned at a lower temperature, which gives the butter a firmer texture. The churn should be first cleaned with hot water, and then cooled with cold water, before straining the cream into it. The churn should not be filled half full; one third is better. Add butter color to the cream before starting if required to give the butter the proper color to suit the market. It may be added at the rate of about half an ounce of coloring, to 1,000 pounds of milk. A smaller quantity of coloring is required in the spring; but in the fall, the amount may be gradually increased to the above figure. Cream containing a high percentage of butter fat will thicken in churning, and the desired concussion may then cease. At this stage, add to the cream about one gallon of water to each two gallons of cream being churned (at the same temperature), and continue churning until the butter is about half gathered; then add sufficient water at a lower temperature to keep the butter in the granular form until the cream is properly churned—till the granules are even in size, and not larger than grains of wheat. The churn should make from sixty to seventy revolutions per minute, and the time required to churn should be from forty-five to sixty minutes. The lower temperature at which cream can be churned in this length of time, the better will be the texture of the butter. If small specks of butter appear on the first buttermilk drawn off, then the churning should be continued a little longer, and more water should be added, if there is danger of the butter gathering too much by the additional churning. Always run the churn at a high speed when finishing the churning and when washing.

Washing.

The quantity of water used for washing the butter should be equal to the quantity of cream churned, and should be at a temperature of from 54 to 58 degrees in winter and 48 degrees in summer, if the butter is to be salted on the worker, and at 45 degrees, or lower, when it is to be salted in the churn. If the water which you have in summer is too warm, use about two quarts of salt in the water and let it stand for ten minutes before drawing off. Avoid using water at high and low temperatures on the same lot of butter, as it has a tendency to cause white specks, and an uneven body in the butter. When the butter is to be packed for export or held for time, wash it twice, but only once when it is going into consumption within about a month. Unwashed butter, from cream churned at a low temperature, gives good satisfaction, if it is put up in pound prints and forwarded to market as soon as it is made. This method works well in fall and winter, and where water is scarce. When not intending to wash the butter the maker will find it an advantage to add an extra quantity of very cold water to the contents of the churn when the granules are the proper size, and revolve the churn quickly for a few turns before drawing off the buttermilk. This will cause the buttermilk to run off the butter more freely and give less trouble when working the butter. It is also well to use a little water to wash the buttermilk from around the butter when near done working, but none on the butter.

Salting.

The butter should remain in the churn to dry for twenty or thirty minutes before salting. Salt for butter should have a fine, even grain, and be kept in a clean, cool place, free from bad odors. The salt should be fresh and clean. The proper time and place to salt butter is while in the churn. Use about one and one-eighth ounces of salt to each twenty-five pounds of milk separated, or to the number of pounds of milk required to make a

pound of butter. Sift on about half of the salt, then tip the churn gradually to turn the salted portion under. Sift on some more, and turn the churn the opposite way till the remainder of the unsalted portion is exposed, then sift on the remainder of the salt. Use a long, wooden fork or spade to mix the butter and salt evenly. If the work is done properly, it will not be necessary to revolve the churn. The butter should remain in the churn, if the room is cold enough, if not, it should be removed to the cold storage room for from two to four hours before working. Salting in the churn is the most perfect method of salting butter, as by that method a more even color is obtained and the texture of the butter is preserved in consequence of less working being necessary. When salting butter on the worker, use about one ounce of salt to one pound of washed butter, and one and a quarter ounces per pound of unwashed butter, varying the quantity to suit the taste of the market. About one-half to three quarters of an ounce per pound suits the English market when the butter is shipped fresh.

Working the Butter.

Work carefully and evenly all parts of the butter alike, turning in and out and doubling alternately on the revolving worker. When the butter is salted on the revolving worker, the worker should be turned twenty four times to finish the butter at one working. When the butter is to be worked twice, about eight turns the first time will be sufficient, and say ten turns, or just enough to make the color even, the second time. We prefer working butter twice when packing for export, as in this way we get less moisture, a closer body and a more even color. It is also preferable to the one-working method for the inexperienced butter maker.

When the butter is salted in the churn, ten to fourteen revolutions of the worker will be sufficient, the aim being to remove the excess of moisture and get an even color. This should be done in every case. The butter, when working, should in no case be colder in winter or warmer in summer than fifty-five degrees.

Packages.

Ash or spruce tubs should be soaked for twenty-four hours with a strong, hot brine, or for two days with a cold brine; then be washed clean and lined with parchment paper. Tubs or boxes lined with paraffin wax should also have parchment paper inside. Pack the butter in the tubs or boxes close around the sides and corners. Fill to within half an inch of the top of the tub and finish off level without giving the butter a greasy appearance. Cover the butter with parchment paper or butter cloth, and put on a paste made of salt and water. Then put into cold storage at fifty-six degrees, or as much lower as the temperature can be kept uniform. Changes in temperature have an injurious effect on the keeping of butter. Fresh brine should be added occasionally to keep the paste on the top of the tub in a moist condition.

Shipping.

The tubs or boxes should be clean and the lids fastened on properly; the weight of butter in all the tubs or boxes should be the same, and it should be plainly marked on the outside of each; about half to three-quarters of a pound extra should be added to each, when filling, to make the butter hold out in weight. When the butter is shipped in one-pound prints, it should be securely protected from the sun in warm weather by the use of ice in the shipping box. A piece of clean brown paper laid over the top of the butter will protect it from the sun and heat.

Cream Gathering Creameries.

Only competent, honest, courteous men should be employed in or about creameries. It would be of very great advantage to the patrons, if the cream gatherers had a good knowledge of cream-raising, so as to give instructions where needed. There is enough cream, or butter fat, lost in the skim milk through carelessness,

neglect and ignorance, to pay the entire cost of manufacturing the butter in most of these creameries. The cream gatherer should be accurate and just in measuring the cream, taking samples properly, and doing all in his power to promote harmony between the patrons and managers of the creamery.

The waggons should be covered to protect the tanks or cans from the sun, that the cream may be delivered at the creamery as cool as possible. After the cream is strained in to the cream vat, the butter-maker should examine its condition regarding temperature and lactic acid. A safe rule in warm weather is to cool the cream immediately to fifty-six or fifty-eight degrees, hold at this temperature over night, and churn at about fifty-eight degrees in the morning. When the cream is delivered cold and sweet in the fall, the temperature should be raised to sixty degrees to ripen. Some fresh buttermilk may be used to hasten the ripening process. The cream may be churned at sixty degrees in the fall. For hints on the effects of temperature in churning and washing, also on salting, working, packing, etc., see "Separator Creameries." Perfect cleanliness, and fresh air are extremely important factors in a creamery—so important that, without them, success is impossible.

A CHEESE MAKER'S ASSOCIATION.

At London during the convention of the Western Butter and Cheese Association, the cheese and butter-makers formed an organization for their own mutual benefit and protection. Mr. J. T. Henderson, Pine River, is president, and F. Brooks, Holbrook, secretary. During the past few years the makers have had to make good many losses for inferior cheese, for which they were not to blame. Many instances are reported where cheese sold on the local markets was rejected by the buyer at the factory because of some imaginary fault, and the maker rather than have the matter made public would agree to pay the buyer a certain sum of money and have the affair kept quiet. In quite a few instances makers are known to have been compelled to pay out the whole year's wages as 'silence' money to the buyer. To a certain extent the maker is to blame for this condition of things, as he very often submits too readily to the demands of the buyer. If the quality of the cheese is not up to the mark when inspected by the buyer and if the maker is to blame all well and good. But we know of one or two instances where the cheese was reported by persons competent to judge to be of good quality, and it would seem as if the buyer complained of the quality for the express purpose of getting an extra commission from the cheese-maker. If such a condition of things exists it is time that the makers were taking steps to protect themselves. The plan which the makers have adopted to protect their interests is a good one, and if the new organization is only managed along proper lines and within reason, it will do much to counteract the tendency to impose a little too much upon the maker. Aside from the question of protecting the rights of the maker, the organization should prove invaluable as a means of advancing the education of the maker in the best methods of cheese and butter-making which is indeed the important thing to be considered.

TO THE CHEESE AND BUTTER MAKER.

Keep yourself and everything in and about your factory clean and tidy, and always do your best to make a uniformly fine article.

OUR PERSONAL COLUMNS.

Tell us all the news, give us all the improvements, the successful new wrinkles; tell us how you like our paper, changes in location, increase of business, etc., etc., etc.

THE CHEESE FUTURES BILL.

Serious Penalties Against Persons Who Speculate in Cheese

Following are the provisions of Mr. Parmelee's bill to prohibit improper speculation in the sale of butter and cheese:

2. This act shall come into operation on the 1st day of January, 1899.

3. Every one who, by himself or through the agency of another person, (a) sells, or (b) offers to sell, or (c) agrees to sell, or (d) agrees to offer to sell, any butter or cheese which at the time such sale, offer or agreement is made, has not been manufactured and is not his property or the property of some person for whom he is duly authorized to act, is guilty of an offence, and liable on summary conviction, to the following penalties:

(a) For a first offence, to a fine not exceeding five hundred dollars or imprisonment, with or without hard labor, for not more than three months, or to both such fine and imprisonment;

(b) For a second, and any subsequent offence, to a fine not exceeding one thousand dollars, or to imprisonment, with or without hard labor, for not more than six months, or to both such fine and imprisonment.

4. Any pecuniary penalty hereby imposed shall, when recovered, be payable one-half to the informant, and the other half to Her Majesty.

5. The Governor-in-Council may make such regulations and appoint such officers as he considers necessary in order to secure the efficient operation of this act; and the regulations so made shall be in force from the date of their publication in the Canada Gazette or from such other date as is specified in the proclamation in that behalf.

6. Nothing herein shall be deemed to prohibit any person who is duly authorized to act for the person or persons who supply milk to any dairy or butter or cheese factory, from selling, or offering to sell, or agreeing to sell, any butter or cheese to be manufactured as such dairy or cheese factory or butter factory.

At Cowansville, Que., at the annual meeting of the Bedford dairymen, Professor Robertson introduced the matter of speculation in cheese. He explained that there was a lot of mistaken opinion in regard to this matter. A speculator was a man who bought cheese as low as he could and held them in the hope of selling them at a profit. His trading was quite as legitimate and quite as different from that of the man who offered to sell what he did not own, and which did not exist. Everything that the latter party could do to depress the market in order to fill his contracts at a wider margin he naturally did. This was selling short, and the only interest that this party actually had in the business was the price of his goods. He sat in his office and tried to take toll of the rest.

MR. GRANT'S VIEWS.

Mr. A. W. Grant, the well known cheese exporter, said that while he was strongly opposed to short selling, he did not believe that it could be regulated. The Professor did not explain in his remarks that in addition to the man who was short there was the man who was long on cheese, sometimes very very long, as the exporters who were carrying cheese in Montreal would say. The latter naturally did not let the shorts have a free hand, but when he started to buy forced the price upon him. This one evened up the other and he did not think that anything could be gained by legislation of this nature. He pointed out some of the difficulties of securing proof of the offence and passed on to the question of quality in cheese, giving some good practical advice about the necessity of clean well water as a great necessity to secure good flavored cheese. Mr. Grant concluded his remarks by urging the cheese and butter makers of the country to form a Dominion Association. There were 5,000 cheese and butter factories in the Dominion, and this meant that if every maker paid \$5 a year fee to such an association a fund of \$25,000 could be raised. A body of this kind, if united, would be in a position to deal with refractory

patrons who persist in bringing dirty milk to a factory.

Mr. Jas. Alexander, speaking of the question of legislating against future selling, took the same ground as Mr. Grant.

He did not believe that it could be enforced, and besides there was not really so much short selling as people not in touch with the great export trade thought. While he wished that the Government could devise some means to stop what there was he was just as certain that they could not. For instance, if such legislation was introduced, what would a shipper do. He would simply open an office across the lines, probably if he was forced to do so, deal in futures in Canadian cheese to his heart's content, and nobody could stop him. The only effect being the diverting of a lot of business to New York now done in Montreal. He made the assertion confidently that the history of short selling showed clearly that it was not profitable, and that the matter would regulate itself. In closing, he advised the Government to be very careful how they interfered in the channels of trade, as they might do harm instead of good. Considering the immense volume of the dairy produce business, there was less trouble and friction than in any other trade. The Montréal Butter & Cheese Association would be quite happy to discuss the matter with Professor Robertson more fully and intelligently than could be done out here.

Mr. D. Derbyshire, of Brockville, spoke on the subject on the same lines.

THE TROUBLE WITH MOULD.

Geo. A. Cochrane, of Boston, writes in the Country Gentleman: The appearance of mold this season has become painfully frequent. Much has been said on the subject of late, and if I have so strongly advocated the use of parchment paper, I have watched this mold matter with a great deal of care. I am glad to see that of the many who have written on the subject, or expressed opinions to the members of the press, nearly all admit that it is not the fault of the parchment paper, but from the negligence of creamerymen properly to prepare their tub or box before packing. I have seen a great many cases of mould recently and I can positively assert that I have yet to see a case where mold has risen from any cause of the paper itself. Every case that my attention has been called to has given the most positive proof that it was the fault of the wood in the tub or box where the mold first started, and that the paper, in most cases had prevented it reaching the butter; but in a great many the mold had penetrated the paper and affected the butter. I have yet to see a case of mold on paper where the package was thoroughly impregnated with brine, or thoroughly paraffined, although I have seen packages where the outward appearance of mold was plainly visible on the outside of staves, but had been kept from making its appearance on the inside of the tub, because it was so well saturated with brine, or else perfectly covered with paraffin.

The worst feature of this mold is that it has given our butter a bad reputation abroad. Many lots of butter that have not shown mold on leaving here have developed it in transit, and it is quite frequently the case that parties on the other side have had to strip the butter of its paper, scrape, and repaper. This is all a great nuisance as well as a serious expense, and all interested in the butter trade, this side, should use every effort to stamp the nuisance out. Every receiver of butter should keep dining at the creameryman to prepare his packages better, as well as to use heavier paper, more especially in the matter of boxes, so many are using paper for this package no heavier than they use for tubs.

There is no way you can awaken a person's intelligence so quickly as through his pocketbook, and I think if our different butter exchanges in every market would take the matter up and pass rules regarding it, it would help more than any other way to stamp this nuisance out. Let it

be given out that moldy, butter packages, no matter how fine the butter may be, should be graded, as seconds or thirds, and in markets where they score for points, let them take into consideration a number of points for butter with parchment paper or without. Where parchment paper is not used at all, and the tub not properly soaked, it should be fined at least eight to ten points, and when parchment paper is used, and the tub not properly treated with brine or paraffin it should be fined so many points.

One would hardly suppose there were so many creamerymen indifferent to the matter of using good packages as well treating them thoroughly before packing; but all must admit there are far too many. I have been closely observing those who paraffin their packages, and I must say I think this is going to be universally adopted instead of soaking.

To-day I inspected a large lot of boxes, consisting of twenty different creameries. The boxes were all northern spruce and paraffined and I did not see one solitary package that was tainted with mold. This was a lot of June goods. The boxes were all very nicely paraffined, and the papers were all moist with brine. These packages were all treated by one party, who sends them out to the creamerymen. These goods have been in cold storage, since June, in the West, and to-day was the eleventh day since they left the western refrigerator car since. This was a capital chance for me, because it gave me some idea of what would be the condition of a lot of butter shipped out of refrigeration from New York or Boston to England, so far as appearance went on arrival out.

All interested in the butter business in this country should work quickly and energetically in this matter. Let us see if we cannot stamp this nuisance out as quickly as the Danes did when they first commenced to use parchment paper, and we cannot do better than to follow their method in trying to eradicate the matter, and that is, to go direct to the creamerymen and the creamery supply companies. Creamerymen should inspect every package carefully and any that are tainted with mold they should refuse to accept from the supply companies.

THE COMBINED CHURN IN CANADA

I notice that Hodgson Bros., of Liverpool, England, wrote to a Canadian newspaper that "Canadian butter is coming more and more into favor in that country," and that "the outlook for the future is most promising." I am also told that the recent decided advance in butter making in Canada has been largely due to the aggressive work at the Government farm or dairy school at Guelph, and that one reason why they are having such good success with their butter is that there is not a single combined churn and butter worker in use in Canada. Is this a fact?—R. G. S., Michigan.

The Dairy World is unable to answer the question definitely for the reason that if we ask a question of those who manufacture such churns they simply "hold their peace" when they do not care to make answer that would be adverse to their machines. But we may state that we have yet to learn of any factory in the Canadian Dominion that has adopted them—Chicago Dairy World.

We will say for the benefit of the above inquirers, that, the "combined churn and butter workers" are in practical use, both at the Guelph and Kingston Dairy Schools, and they have been adopted in many of the creameries in Eastern Ontario. However, they are not in general use in Western Ontario.

I will add that the butter turned out was the top price kind, and no nicer was ever made anywhere.

These are facts, and is not intended as an advertisement for any churn.

SALT.

Salt is known to chemists by the name of Sodium Chloride; it is a combination of metal sodium and chloride gas.

Subscribe for "The Canadian Cheese and Butter Maker." Only 50c. per annum.

THE CHARM OF COURTESY.

If we could give our children any one temporal gift there is probably none which would be of greater value to them than the charm of courtesy. A kindly, affable manner is the natural indication of a kindly heart and a desire to do unto others as we would be done by. Many a timid, awkward boy or girl with the kindest intentions falls in courtesy because of shyness. This is something children should be taught to overcome like any other weakness.

It is quite possible for a woman to combine an affable manner with perfect dignity. The woman who is gifted with that tact and kindly intention that enable her to say the fitting word in season to all with whom she is brought in contact is a woman whose presence is always welcome. Too many people seem to feel that they will be demeaned by addressing a kindly, thoughtful word to the poor maid in the kitchen, or speaking to the shopgirl behind the counter in a friendly, agreeable manner. The working-woman has many weary hours and she is often living a life of noble sacrifice for others. A few considerate words of recognition such as a true woman should be able to speak are often a boon to her.

The charm of a few friendly words which are given in a simple, cordial manner and are without the least effect of gushing is felt by the most ignorant person. True women, without stooping in the least in dignity, are the friends of their servants and of every one with whom they come in contact.

It is equally necessary that our boys cultivate courtesy. The charm of an agreeable manner has more often won fortune for a young man than any other worldly gift. The young man who is thoughtful of the old and young, if he also is a man of sterling principles, intelligence and industry, is sure to win his way. Many an excellent young man has learned too soon that his brusque, independent manners had cost him the best opportunities of his life. It should be one of the first duties of the mother to train her children in courteous manners. Too often this is considered quite a secondary matter. Even the rough diamond must be polished before it becomes of practical value, and just in proportion as it takes polish does it increase in value.

ONE THOUSAND POUND CHEESE.

By Geo. F. Brown.

Cheese weighing 1,000 pounds, are made by the same process, as our Canadian export cheese.

I made twenty-five last season, in the "Glen" factory at Williamstown, Ont.

They are used mostly for exhibition purposes. After being displayed at fairs and in the large retail shop windows, they are cut and retailed in the regular way, and are of as good as the general run of cheese.

The hoop is made of steel. They are thirty-four by thirty-four inches in height and breadth.

The bandage used is a first-class cotton cloth, the proper size of the hoop, and fastened to the top of the hoop by clothes pins.

The cap cloth is placed in the bottom of hoop. When the curd is ready it is placed in the usual manner, as in making regular sized cheese.

Then press as tightly as possible. After pressing slide out on a platform of suitable height, lift off the hoop, pull up the bandage, trim off and grose with butter, then place on top cloth.

They are pressed one day. No bandaging to do until they are taken out ready to box.

They are turned every two days, by aid of simple hoisting machines, and leverage. When boxed they are rolled, instead of carried.

Some of these cheese took a medal prize at the Islington, England, exhibition last season.

WHO TOLD YOU SO?

It is a solemn hour with a rose lip-ped society and when she begins to wonder vaguely how a mustache feel on the face—Bingamton Republican.

BUTTER PRESERVATIVES, NOT USED IN CANADA

The Canadian exporters have taken up the question in earnest and it now seems probable that stringent laws will be passed prohibiting the use of foreign acids.

Alluding to this matter the Montreal Gazette in a recent issue says: "The Montreal Butter and Cheese Association held another session to-day at which the subject of the use of boracic acid in the preparation of butter for shipment was discussed. Reference has already been made in these columns to communications from the provincial authorities on this matter. At to-day's meeting those letters, which were from the Quebec and Ontario Provincial Commissioners of Agriculture were read. In both cases the commissioners stated that they had issued the necessary instructions to their inspectors to have the use of the preparation in question stopped."

In a recent editorial on boracic acid in butter the Montreal Trade Bulletin said:

"The repeated warnings against the use of boracic acid by Canadian buttermakers, which have been given in the columns of the Trade Bulletin, have now been supplemented by a petition addressed to the Hon. Sydney Fisher, Minister of Agriculture, and to the Ministers of Agriculture of the local Governments of Ontario and Quebec, by the Butter and Cheese Association of Montreal, asking the Ministers to warn buttermakers against the use of boracic acid, which is an adulterant under the English law, as demonstrated in these columns some weeks ago, by the prosecutions taken out against retailers in England, and the fines imposed in all cases where the analysis showed that the butter contained boracic acid. In view of this, exporters here have been requested by their English correspondents to give certificates guaranteeing that the butter they ship is absolutely pure and free from boracic acid. 'Preservative' is said to contain boracic acid, and consequently farmers are advised not to use it. All butter entering the United Kingdom will be examined by analysts appointed for that purpose, and any importations containing this adulterant will be heavily fined. Consequently, it behooves Canadian buttermakers to see that they use nothing but pure salt as a preservative."

One of the strong arguments used by the advocates of preservatives is that the Australasia colonies use them in practically all the butter they send to England, but however true this may have been in the past, it is quite certain that the sentiment in favor of their use is changing under some pressure from the English importers. The dairy commissioner of New Zealand in his last annual report took a very decided position on this matter. He said:

"The experience of the past season has strengthened the position I took up in my last annual report—that the use of preservatives is not only unnecessary, but injurious to the reputation of the purity of our butter. I would again respectfully urge the necessity for legislation prohibiting the use of any such (except common salt) by means of an amendment to the Dairy Industry Act. A number of factory managers who previously used preservatives have during the past year discontinued to do so, and in no case has the quality of their output suffered in consequence. On the contrary, reports have been received from some of the leading merchants in London to the effect that New Zealand butter has this year surpassed itself in quality. As only a small proportion of our butter is treated with preservatives, such statements may be taken as evidence that preservatives are not essential to its keeping quality. The presence of preservatives in butter is now regarded in England as an adulteration. We would do well to follow the lead of the Danish and French Governments in prohibiting their use altogether."

This ought to convince the buttermakers of this country of the necessity of guarding carefully the purity of their product, not only for home use but for export as well.

It is only fair to add, that salt is the

only preservative now used in Canada.—ED

IMPORTANT TO FARMERS.

Among those best acquainted with the produce trade of Great Britain, there seems to be a widespread impression that the production of cheese in Canada is now fully equal to the requirements of that market, and that any further increase will mean unremunerative prices to the Canadian farmer, and positive injury to a great industry. Of the twenty-five million dollars worth of cheese imported by Great Britain during the past season, Canada supplied fifteen million dollars worth, or three-fifths of the total imports, and it is held that any increase in these figures, with corresponding increases from other exporting countries, cannot fail to result in an over supply and a general and permanent depreciation of values. As a proof of this contention it is pointed out that even now stocks are very heavy both here and on the other side, and that this had a depressing effect upon the market the present low figures testify. One-fifth more boxes have gone forward already this season than during the corresponding period of 1896-97, or, to be explicit, 2,334,830, against 1,939,876. In view of these facts it is a very general opinion that if the farmer for some time to come would devote his energies rather to the improvement of quality than to the increase of output, the future prospects of the trade would be brighter for all concerned.

As other countries are likely to be over producing also, to restrict our output would be only to give place to them, unless we hold our own by progressive excellence, as we have done in the past.

If it is true that any considerable increase in the make of Canadian cheese will depress the market to an unremunerative level, the question naturally arises, what is the farmer to do with his milk and feed crops, which are subject to increase year by year? An answer to this question is found in the following astounding figures, which show the farmers where they can use their labor and talents in developing a veritable Klondike on their own farms. Great Britain last year imported from various countries the following enormous values in the four articles named, which can be readily and economically raised in great abundance in Canada: Butter, eighty million dollars; bacon, \$44,000,000; hams, \$18,000,000; eggs, \$20,000,000, altogether a total of \$162,000,000. Of these four articles Canada only supplied the following: Butter, \$2,200,000; bacon, \$2,500,000; hams, \$1,300,000; eggs, \$1,000,000, or a total of only \$7,000,000. So that, whereas the Canadian farmer supplied the British consumer, with three-fifths of all the cheese imported, he only supplied one twenty-sixth of the imports of butter, bacon, hams and eggs. If our farmers can only realize what the above great figures might mean to them, they would assuredly strive to reap a larger share of this rich commercial harvest. We must turn first to butter making as the natural relief to the present over production of cheese. Of this, we only supply Britain with less than one-thirty-sixth part of what she imports. As the greater part of the butter brought into the United Kingdom comes from Denmark, and as Danish butter is very much out of favor at the moment, while Canada, if not her butter, is just now very much in favor, the time is favorable to reverse the figures. There is room to increase our butter export twenty times. We can only do so, however, by not only making the best possible article, but by studying the whims of the British markets as to make and packing. As buttermilk is used to feed pigs, bacon and hams are by-products of the butter manufacture, and here, too, the way to success lies in excellence, both of the meat and of its curing and packing.—Witness.

Subscribe for "The Canadian Cheese and Butter Maker." Only 50c. per annum.

EXTRACTS from W. T. CRANDELL'S TALK ON CANADA'S EXPORT TRADE.

After Visiting England He Tells of What Great Britain Imports and of Canada's Share in the Exports—The Butter and Cheese.

The British markets are Canada's best markets, and on them must Canada largely depend. Britain's consuming capabilities are something enormous, and Canada must look for a share of the trade. The speaker then referred to the steps taken by the Canadian Government to encourage and increase the export of Canadian products to the mother land, one of the steps being the introduction of cold storage, a system which has proved an immense benefit to shippers. The exportation of beef will develop into a great industry. Canadian beef and American beef are often sold as English goods, by this means the sellers enhance the value of English goods, and injure the Canadian. As Canadians we should see that Canadian products are sold as such, and not allow the trade to be injured by imposition.

Referring to the cheese industry the speaker said that Great Britain imported last year £4,184,656 sterling, of which Canada exported £2,580,301 and the United States, £1,234,037. Canada has now an enviable reputation for her cheese in the English market, and her product brings from one-quarter to one-half cent a pound more than that of the United States.

Denmark supplies the British market with most of her butter, Canada furnishing the rest about £39,749 worth. Australia furnishes about the same as Canada, but has the reputation of making the best butter. Canada's creamery butter is gaining a good reputation, and brings about as high a price as Australia's, or that of the other countries. Our dealers in the past have not adopted a proper method of making. The agents of English commission merchants often misrepresent the brands of butter, and thus the good commodities often suffer and the market is spoiled by underselling. He advised that shippers of creamery butter place their goods in the hands of responsible firms in England. Touching the ham and bacon trade, he claimed that Canada was not getting credit for the quality of goods she was exporting. Britain has a bacon curers' association to protect her interest there, and he would suggest to the Canadian government that a law be passed protecting the Canadian export goods from fraud.

PARAFFINE TUBS WITHOUT PARCHMENT PAPER.

I have come across some other lots of paraffined tubs again this week and I want, if possible, to make the protest against their use without parchment lining still more positive. A receiver who had trouble with them last week, asked me to go down to the store, and see another lot that had just come in. The appearance on opening the tubs was against the butter. Instead of being full and flush up to the sides, the edges had been cut down until the butter was three-fourths of an inch below the top of the tub. This had evidently been done while the butter was soft, and it stuck to the paraffine on the tub in a very messy way. But the main trouble was experienced in stripping. This was accomplished with considerable difficulty, and when the tub was finally removed so much of the butter had stuck to the tub that the sides were rough and unsightly. Great chunks of butter had been torn from the bottom, some of which fell on the stone floor. In appearance alone the shipment was damaged at least 1c. per lb., and there would certainly be heavy shrinkage in weight, as the buyer would demand a liberal allowance over the test. In many places the white paraffine wax had pealed off the tub and was on the butter. This would take the butter out of the

channels of fine trade at once. One or two buyers who tried it last week reported an endless amount of trouble and positively refused to buy it again.

In calling attention to the matter it is in the hope that such packages will find no place in the creameries. Their use is discouraged from every commercial standpoint. It seems hardly probable that the buttermakers would be willing to use both parchment linings and paraffined tubs, and as the butter should never come in contact with the paraffine there is only one proper course open.

Buttermakers should never fail to soak their parchment paper in a light brine for a few hours before using. This should be done in order to prevent the paper from absorbing the moisture from the paper. When the paper is properly soaked before the tubs are lined, very little moisture from the butter is absorbed; it also does much toward protecting butter from mold.—N. Y. Produce Review.

MR. WALKER ON THE BUSINESS OUTLOOK.

Mr. B. E. Walker, general manager of the Bank of Commerce, who has a reputation for soundness as well as being one of the foremost members of the banking community, in his annual address devotes much attention to the improved outlook for agriculture in Canada, and the less hopeful prospect of the lumber business. Mr. Walker emphasizes the importance of agriculture, designating it "the substratum of our commercial well-being." It is encouraging to observe that as a result of extensive and reliable observations made in connection with the business of the bank, he is able to pronounce the prospects to be exceedingly bright, especially in Manitoba and the Northwest. Dairying and its associated interests are justly held to be susceptible of the greatest and most lasting improvement, a fact distinctly shown by the British trade returns for the five months of the present calendar year which indicate remarkable advances in shipments of Canadian bacon, hams and butter and a steady business in cheese. Mr. Walker points out that Canada has not taken her rightful place in the British butter market, only sending about two and a half per cent. of the total amount imported by England, but trade of this kind cannot be worked up in a day, and as it was only last year that adequate facilities for shipping in cold storage were provided there would be sufficient cause for satisfaction if any material advance whatever is noticeable. The fact is that up to June 16 there were 11,000 packages of butter shipped as against 2,700 in the same period last year, a gain of 300 per cent.

SELECTED RECIPES.

Cheese and Almonds—Cottage cheese sprinkled with salted almonds, and then heaped with whipped cream, forms a dainty dish.

Cheese with Macaroni—Break one-quarter of a pound of macaroni into small pieces, and cook it in one and one-third quarts of boiling, salted water, until tender, and then drain. Make a white sauce of milk, butter and flour. Have three layers in a baking dish, alternating, grated cheese macaroni, sauce, repeat. Finish the top with a few bread crumbs, small pieces of butter, highly seasoned with pepper.

Cheese, in a given quantity, contains more actual food than almost any article of food. It is healthiest when just fairly ripened. Use old or strong cheese only as a condiment.

A MEAN SWINDLE.

Mistress—"Did you ask for milk bread?"
Domestic—"Yes, mum."
"What a miserable little loaf they gave you."
"Yes, mum. It's my opinion, mum, that that baker is using condensed milk."

RIPENING CREAM.

(Paper read by Mr. A. W. Orner before the Kansas Dairy Association.)

Ripening cream is the most important and at the same time the most difficult step in the art of making good butter. Both the flavor of the butter and the thoroughness of churning depends upon the manner in which the cream is ripened.

Ripening is caused by the bacteria acting in many ways. They act upon the milk sugar, producing lactic acid, which in time curdles the casein. Bacteria act to generate and form volatile substances which impart odor and flavor to butter and butter-milk. Just what these flavor and odor imparting substances are we do not know definitely.

The number of bacteria in ripened cream is beyond comprehension; in specimens of cream which has ripened for two or three days, as many as 100,000 bacteria have been found in a single drop, even under conditions most unfavorable for their growth.

In cream the work of bacteria is slower than in milk, because there is only a small amount of sugar, casein and albumen left, and consequently the germs have less material to live on, and they cannot live on fat alone.

Three reasons are given for ripening cream. First, to get flavor in butter; second, to secure thorough churning; third, to improve the keeping quality. The first reason is sound. It is impossible to get the fine, nutty flavor except from ripened cream. Second reason is also sound and third reason is some doubt. Some experiments seem to show that sweet cream butter keeps best, while others indicate that ripened cream butter keeps the best; there is probable not much difference.

The ripened cream butter seems to keep best at a temperature of 32 degrees or less; but when the butter is kept at a temperature of 45 or 50 degrees, than the sweet cream butter seems to keep better.

The best temperature in which to ripen cream depends upon the season, temperature of room and condition of cream. High temperature causes more rapid ripening than low temperature, consequently is raised or lowered as rapid or slow ripening is desired. In the summer cream is usually ripened at lower temperature than in winter. In general it may be said that the best temperature at which to ripen cream in creameries is from 56 to 58 degrees in summer and 60 to 65 degrees in winter.

The cream should be stirred often while ripening, for two reasons: First, to keep an even temperature; second, to prevent the surface from thickening. If the temperature is not uniform the warmer parts ripen faster, and the result will be an extra loss of fat in the butter-milk. This loss occurs because the best temperature for churning ripe cream is not best for cream not ripe, and if cream is unevenly ripened it is impossible to secure a temperature that is best for all of it.

If the cream is allowed to stand without stirring, the richer parts rise to the surface, and the upper inch or two becomes thick, being exposed to air and moisture, evaporates, and clots of cream form. If it takes several days to get cream enough to churn, it should be kept sweet. Sometimes cream will not ripen of itself in time for next day's churning. Then it becomes necessary to use a starter.

The starter is simply ripened milk of some kind. When it is added to cream and well stirred in, the ripening germs begin to grow rapidly, and in this way begins to ripen. The starter most often used is butter-milk. This will do if butter of that churning was of good flavor. If the butter was off in flavor, butter-milk should not be used. A better method is to take skim-milk as soon as it is separated, set it in a can in a heating vat and raise temperature to 150 degrees.

Hold it at this for ten or fifteen minutes, then cool down and add to it 10 or 15 per cent. of butter-milk; keep in clean can, well covered, at a temperature of 60 to 65 degrees. This is used for next day's cream. The amount of starter depends upon condition of cream, temperature of cream and length of time cream has to stand; generally from eighteen to twenty

hours is required for cream to ripen. Ripened cream has a very fine, granular appearance, and a slightly acid taste.

NEW FACTS ABOUT CHEESE RIPENING.

Last summer, in the course of some experiments with milk to which ether had been added, we noticed that the milk curdled and underwent digestive changes without apparently increasing in acidity. This fact could only be explained by assuming that bacteria could live in this etherized milk, or that certain ferments of an unorganized nature was present in the milk, and that the digestion—the conversion of the casein into soluble peptones—was due to these agents. By further experiments we were able to exclude bacterial action, and show that there was naturally present in milk ferments comparable to those that are found in the alimentary tract, and that these ferments technically known as enzymes, were the cause of the spontaneous digestion of milk.

It was found that milk invariably underwent this decomposition if the bacterial fermentations were held in check by the addition of chemicals, that did not destroy the action of these organized or chemical ferments. Among the substances used were ether, chloroform and benzol. This change was of a progressive character. It was also immediately suspended, if the milk was boiled or treated with a strong chemical disinfectant. Attempts were then made to isolate the supposed enzymes, and by means of the usual physiological methods, it was possible to separate from centrifuge slime certain extracts that were relatively pure. Slime was taken for the reason that these enzymes are likely to attach themselves to solid matter held in suspension, and this being true, we expected to find that the slime thrown out of the milk during its separation would be relatively richer in these substances than the whole milk. A chemical analysis of slime and skim milk showed that the change was much more rapid in the slime, thus indicating that larger quantities of the ferments were present.

While every analogy showed that these changes were identical in character with those that occur in normal cheese, the point was not considered proven until cheese was made from milk that had been kept under chloroform. The same cheese was also kept in a saturated atmosphere of this anaesthetic for a long period of time. Under these conditions, bacterial growth was impossible, and yet such cheese ripened practically as fast as a normal cheese kept under favorable conditions. It was therefore, possible to break down the casein entirely without the aid of bacteria. Thus the proper texture of the curds is produced not by the action of the lactic acid organisms, or any other known form of living germ, but by digestion of the casein caused by the inherent enzymes that are naturally present in milk. Such a process kills or destroys the action of these ferments, just as a solution of rennet is stopped in its action when it is heated. By destroying the bacteria in milk by means of anaesthetics like ether, etc., the acidity of the enzymes remained unimpaired.

The flavor of cheese is an entirely independent problem, but so far as the conversion of the hard, green curds into soluble ripened cheese is concerned, there is no longer any doubt as to the cause of this change. The most important result of these investigations is the satisfactory explanation that can now be given for the breaking down of the green curd into cheese. Filled cheese is usually made from separator skim milk, to which neutral fats have been added. In removing the butter fat and centrifuge slime, a very considerable proportion of the inherent milk enzymes are taken out of the milk, and as the cheaper oils added to replace the butter fat do not contain these, the cheese is deficient in these ferments, and may undergo an entirely different curing process. The same may be said to be true, in part, concerning the retarded ripening of skim cheese.

It is possible that the better keeping quality of separator cream butter compared with the gravity product, may be due, in part, to the fact that it contains less of these ferments to act on the nitrogenous elements of the cream, and therefore, the production of all flavors is retarded in the separator product compared with ordinary dairy butter.—Drs. Babcock and Russell of Wis Exp Sta

MILKING.

The man who has not given much thought to the subject will be astonished to discover, on investigation, how much not only the quantity but the quality of milk depends upon the care and painstaking effort on the part of the man who does the milking. If he is heedless and careless he can practically destroy the value of the best cow in the herd. Both scientific experiments and the experience of practical men demonstrate this truth. Milking should be done rapidly and at the same hours each day. Each milker should have certain cows and he should always milk them. The cows should always be milked at the same place, and nothing should be permitted to distract their attention. The dairy cow likes regularly and resents any departure from it by giving less milk and poor or milk. If the cows are accustomed to quiet when being milked unusual noises will have a bad effect. Loud talking near the cows should not be permitted. Strangers, human and animal, should be kept away.

Milk with clean, dry hands. Milk rapidly, two teats at a time. Grasp the teat with the whole hand when possible, stripping is a bad habit to get into. Do your talking before and after milking. Milk thoroughly—the last part of the milk is the richest. Milk at the same hours every day.

Stock Breeders' Handy Reference Table.

Average period of gestation with horses, 337 days; cattle, 282 days; swine, 113 days; sheep, 148 days.

Date of Service.	Date on which animal is expected to give birth.			
	Mare.	Cow.	Sow.	Ewe.
Jan. 1.....	Dec. 2	Oct. 8	Apr. 22	May 27
5.....	7	13	27	June 1
11.....	12	18	May 2	5
16.....	17	24	7	11
21.....	22	29	12	16
26.....	27	Nov. 2	17	21
31.....	Jan. 1	7	22	26
Feb. 5.....	6	12	27	July 1
10.....	11	17	June 1	6
15.....	16	22	6	11
20.....	21	27	11	16
25.....	26	Dec. 2	16	21
Mar. 2.....	Feb. 1	5	22	27
7.....	6	13	27	Aug. 1
12.....	11	18	July 2	6
17.....	16	23	7	11
22.....	21	28	12	16
27.....	26	Jan. 2	17	21
Apr. 1.....	Mar. 3	7	22	26
6.....	5	12	27	31
11.....	10	17	Aug. 1	Sept. 5
16.....	15	22	6	10
21.....	20	27	11	15
26.....	25	Feb. 1	16	20
May 1.....	Apr. 2	6	21	25
6.....	5	11	26	30
11.....	10	16	31	Oct. 5
16.....	15	21	Sept. 5	10
21.....	20	26	10	15
26.....	25	Mar. 3	15	20
31.....	May 3	8	20	25
June 5.....	7	13	25	30

We print five months of the Handy Reference Table, and any Breeder can glean from it how to figure the balance of the year.

ON TIME AND AGENCY

to the first applicant in each locality

FAMOUS O. I. G. HOGS

two of which weighed 2806 lbs.

Description free. We ship to all States and foreign countries. Address The L. B. Silver Co., care The Canadian Cheese & Butter Maker, Williamstown, Ont.

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Advertisements under these headings 4 lines 25c. each insertion. More than 4 lines 5c. each line.

Stop Selling Milk—for little or nothing a .d Treble its value by making delicious quick selling Neufchatel Cheese. Anybody can make them by our formula. Beats a creamery; beats a cheese factory. Send for 25 cents. Money order or stamps. Danish Dairy Co., Care Canadian Cheese & Butter Maker, Williamstown, Ont.

Situations Wanted

Wanted—First class Cheese Maker at once. Address, "Cheese Buyer," care Kingston Branch, The Canadian Cheese & Butter Maker, 20 Market Sq. Kingston, Ont.

For Sale.

For Sale—A small Creamery and Cheese Factory in Quebec Province, low price to close estate. Address R. De Baule, care of Canadian Cheese & Butter Maker, Kingston Ont.

Help Wanted

THE "ACME" MILK TESTER

Hicks's Patent, London, Eng.

This Instrument has been expressly designed to provide any person with a simple but reliable test of the purity of the Milk supplied to them. The Ordinary Milk Tester (Lactometer) has an attached scale, and mistakes often occur in reading off the divisions upon it; the "Acme" Milk Tester has neither scale nor divisions, consequently no error can be made in using it.

Nothing can be simpler than the "Acme" Milk Tester, as you have only to watch the bead rising and falling. It is guaranteed as accurate and effective as the more expensive Instruments.

It cannot fail to prove a boon where Pure Milk is essential, whether for sickness, culinary or other purposes, as it provides a thoroughly reliable test, so easy to use that a child could apply it. No calculations or tables required.

PRICE 50c., or presented to any person sending us 5 new subscribers.

The Canadian Cheese and Butter Maker, Williamstown, Ont.

AS TO CHEESE.

Pinholes, Round Holes, Ragged Holes, Gassy Curd and Other Things.

A cheesemaker must know when his cheese is good. He must have a trier. He should not have to wait for some one else to try his cheese. It is not well, however, to try your cheeses too much and let the flies into them. I would find out every week how my cheeses were going.

A good cheese has certain qualities. (1) A firm body. No one wants a hard, dry, indigestible cheese, but you want a solid, firm cheese, and the plug should show no holes or weak spots. (2) It should be rich and meaty. (3) It should have a flinty break. (4) A nutty flavor, nice and clean.

In judging cheese, flavor is given 40 per cent., body and texture, 35 per cent., color 10 per cent., and finish 3 per cent.

In pulling a plug draw it so that the bare plug will not rub on the rim of the cheese.

The plug should look larger than the hole it came from. The judge will get the flavor by the odor.

There are three defects in cheese, which will be indicated by as many different kinds of holes.

First there is the ragged hole, penetrating the cheese irregularly, and of irregular size and shape. One cause of these ragged holes is failing to keep the curd while in the sink of an even heat and moisture, as heat aids the formation of acid and the curdling of the curd. By letting certain portions of the curd get cold there is an uneven development of the acid, and we will see this defect indicated by ragged holes in the cheese while curdling.

Then there are round holes. These indicate and are found in what is called sweet cheese. To cause this condition either the milk has not been matured to a proper point, or the salt has been added too soon.

Very small round holes, known as pinholes, also indicate defective cheese. They are due to gassy curd. This gas is caused by some taint in the milk. To avoid this defect, refuse all tainted milk, and if you have any of these pinholes in the curd, ascertain it by cutting the curd with a knife to see you get them flattened out before you salt the curd.

If curd is put to press at too high a temperature above 90 degrees, it will be likely to generate steam, and this will make the cheese puff and contain holes.

There is also what is called an acid cheese, indicated in two ways—first, by leaking whey on the shelves; second, by being dry, mealy and lumpy, the fat seeming to have disappeared.

The cause of this condition are either that some sour milk was put in the vat, or that the vat was allowed to get over ripe, or that the curd was not dipped soon enough, or again, that it was not stirred enough in the sink.

In short, the acid was allowed to develop too far before salting.

In close, smoggy weather, the cheesemaker must have everything ready to run the milk through all the processes without any delay.

Another defective cheese is the party cheese. It is weak in the body, the characteristic is that when you pull out the plug, you can't replace it again. It is generally found in the fall and is the result of cold making and curdling rooms.

There is no time of year when more care is needed in cheesemaking than in the autumn. The milk is rich, and to get a firm body, you should cut the curd finer (to get out more of the whey) and salt a little heavier.

To cure and keep your curd warm through all its stages. The party cheese is due to letting the curd get cold in the vat or the sink, consequently the acid does not work fast and the whey does not come away freely.

If the cheese does not ring on the outside, it is due to cold hoops. If your room is cold, warm your hoops in a tub of warm water, before filling them.

In filling your hoop have the center the fullest; you can get the whey out better. If you don't get the whey out before the curd gets cold, you will never get it out. Press your cheese well at night, especially in cold weather.

If you neglect to keep a fire in your curdling room in cold weather, in addition to having a pasty cheese you will get a spotted cheese that will grow strong and bitter.

Be sure to have a stove in your curdling room when September comes in. After a cheese is properly cured it does not require much heat. Put the newest cheeses where they will get the most heat.

Attend to turning your cheeses and so allow the dampness to escape from them. Red spots on cheese are often due to rough handling. Don't let your cheese stand too close together on the shelves. They must not touch each other or anything else. Have them in straight rows on the shelves.

Fix your press so it will work straight.

Take care of your utensils. Don't get your hoops all bruised up.

Have your cheese neatly bandaged, even sized and pressed straight.

If a cheese has become mouldy on the outside, wash it in very hot water into which you have first poured a little ammonia—Address of J. E. Hopkins.

MONEY TO BURN

Astonishing figures have been published of the expansion of United States exports during the last ten months. The excess over imports is stated at five hundred and fourteen million dollars. This enormous balance not only surpasses all previous records, but makes them appear comparatively insignificant. At the same time the imports of gold amounted to only seventy-five millions, which, though large, does not much reduce the commercial debt owed by foreign nations to the United States. European financial centres are reported as keenly feeling this sudden rise of a great creditor nation, whose claims are certain to be augmented by the scarcity of foodstuffs and the consequent necessity of drawing still further upon the surplus produced in America. The effect of these conditions is to be curiously illustrated in true American style by the display at the coming Panama Exposition of three carloads of cancelled farm mortgages. The picture here presented is the most gratifying proof of prosperity that could be desired. For years the condition of the western farmers was deplorable, it was even feared that they were passing away, to be succeeded by tenants of great financial concerns into whose hands the land was passing through the lapsing and foreclosure of mortgages. The economic results of the change must be incalculable for the present, and can hardly be seriously affected by the war. So long as Europe is in want of food and America has a surplus, these conditions must continue. And what is true of the United States is also true of Canada. Our farmers are also prospering, with the advantage of having no foreign war to maintain and with the prospect of a good harvest over a wider area than ever before. The outlook is indeed most cheering, for it is an old and true saying that when the farmers are prosperous everybody enjoys good times.

LAUGH-LINES.

Little wrinkles made by smiles—
Catch the marvellous wiles
Them as "crow's-feet," Time and tressure
Liggy lines all over his face!
He does not deserve a grain
Of your pity, it is plain.

In the faces of our friends
See how quickly humor sends
Up a signal to the eyes,
And those funny furrows rise.
By and by they grow so deep
That they smiles forever keep.

And I love to see them there,
For, no matter how much care
With his lines upon the brow
May keep pace with laughter now,
He can never overthrow
Smiles that deep as trouble go.
—Mary A. Mason.

QUALITY OF CANADIAN CHEESE.

A Leading Exporter Makes Some Observations of Great Interest to Factorymen.

Mr. A. W. Grant, the well known cheese exporter, who has just returned from Great Britain, in the course of a chat, gave some very interesting information to the Canadian factorymen. The trouble seems to be, according to Mr. Grant, that the factorymen market their cheese before they are ready for the market. Mr. Grant says:

"We seem to have reached a point in the making of cheese where the supply almost exceeds the demand, considering quality and price, but—and this is a most significant word—if our quality of cheese was as it ought to be, much superior to what it has been, the consumption of cheese would increase almost immediately twenty-five per cent., and this would mean considerably higher prices. There have been more complaints in England the past season on quality than I have heard in some years—and the complaint is well founded, so-called cheese are shipped from a great many factories in a curd state—not fit to eat or really merchantable. A large quantity of this green cheese is put into ice-houses here and elsewhere, and comes out clumpy, dry and hard—it never cures. The States cheese are improving so much that by many English buyers they are preferred to Canadians on this account. Apart from the green cheese—the flavor in a great many instances is very poor. Cows are allowed to eat and drink what they like, and are not milked in a clean way, and the milk is not aerated as it should be. It is a well-known fact that quite frequently cheese are shipped from the factories from three to six days old. If we wanted to run the industry, we could not do it better or quicker than by practicing such methods. Though I don't like the idea of the Government interfering with private trade, yet I am sure that a Dominion act of Parliament prohibiting the shipment of cheese from the factories under any 10 days old, at least, is the only way to safeguard this interest, and every well thinking factoryman, farmer and shipper would welcome such a law. Canada must look to its laurels. The low prices ruling today can be attributed to inferior quality, and if a decided change does not take place, we will have to accept not only very low and unprofitable prices, but other countries' cheese will substitute ours in the British market. Finest English Cheddars cheese were selling at equal to 15 and 16 per lb. wholesale, and very scarce and wanted, and our best Canadian cheese a drug at 8c to 10c per lb. at that time in England. This speaks for itself."

THE CLEAN BUTTER TUB.

Dropping into a commission merchant's butter cellar in Chicago, the other day, writes the editor of Hood's Dairyman, we were shown a fine lot of creamery butter, just received, which was stored at one side. The flavor of the butter was all that could be desired, but what we noticed most was the bright, clean look of the packages. They were of ash, and in every particular were as fresh and bright as if they had just come from the factory. At our request, one of the tubs was stripped, and we examined it on the inside. It was evident that the buttermaker took extra pains in soaking and handling the tub to preserve the fresh look and appearance. Now, did it pay? The commission merchant assured us that whenever a buyer comes into their store, he will make at once for that particular make of butter, if they have any on exhibition. The flavor, color and texture is always good, it is true, but no more so than the product of many other creameries that come to them. Yet they can get from a quarter to three-quarters of a cent a pound more for this particular butter than

for other butter of equal quality. The attractive appearance of the package is what tips the scale. In this we do not mean that poor butter will sell for more in an attractive package, but it is evident that good butter will. And there is good sound philosophy in this view of the case. We all know of housewives, whose butter always sold well, not alone because of its quality, but because of their reputation for neatness. Neat, cleanly, tasty people abhor filth, and a dirty appearance of things. Fine flavor in butter is the outcome of neatness. A neat butter maker will take pains to have a neat attractive package. And so it goes, one trait or characteristic backing up the other.

However, where the butter maker is overworked, and has sufficient help, he cannot be expected to succeed in neatness. Neat, skillful work takes time. A great many co-operative creameries, and creamery proprietors try to save in the expense of help, and lose four times as much as they gain, in the sale of their product.

These are days of sharp competition in everything. No man has a mortgage on the market. Butter is particularly the object of our best taste. We will pardon a fault in almost any other food quicker than in the butter. For this reason, only the neat, tasty maker will get the best prices, and, as a consequence, make the best profit for his patrons. It means a good deal of money in the course of the year, where a creamery is making from 50,000 to 100,000 lbs. of butter, to get even a quarter or three-quarters of a cent a pound more than the market price. Then, again, it means a good deal on a dull market to make butter that moves off briskly. It is the left over butter that moves off briskly. It is the left over butter that must sacrifice butter to be sold.

There is big money value in neatness, from the patrons who produce the milk, to the maker of the butter, and the commission man who manages the final sale. It is a sure loss in final value to consign butter to a commission man who has a dirty storage room. Such men do not attract the best customers. But the man the hardest to reach in all this chain is the farmer who produces the milk. It is the nasty milk that knocks out big value in the final butter. We started to talk about the butter package, and here we are at last at the farm end. Nevertheless, neatness means money at every step, from the cow to the customer.

A PERSONAL DEPARTMENT

We will open a personal news department in our next, and we invite all cheese and butter makers in Canada to send in any news of a personal nature, such as deaths, marriages, removals, business changes, etc. We feel it will be very interesting, and certainly beneficial to all.

A Kingston girl, who was asked if she ever saw anybody milk a cow, replied, "Oh, yes, indeed I have. It just tickled me to death to see uncle jerk two of the cow's facets at the same time."

PHILADELPHIA ICE CREAM

Beat up two quarts of double cream, three-fourths of a pound of fine sugar, one teaspoonful of vanilla, strain through a fine sieve into a freezer, add the whites of two eggs and freeze. In place of whites of eggs one tablespoonful of tascated egg white can be used to advantage. All Philadelphia creams are made in this way, fruit or fruit flavoring being added after it is partly or wholly frozen. One quart of raw cream will more than double in bulk when frozen.

SHE DID.

Detest Free Press.
"Mama," said the father, who looked as innocent as the cow, "I accidentally overheard some of your conversation with that young man in the parlor last evening. Why didn't you sit right down on him when he said you could begin economizing by both using the same chair?"
"I did, papa," and she also looked as innocent as she could.

The Editor has selected a series of articles of great value for cheesemakers. This 1st article on "Notes for Cheese Makers for July," is by Prof. James W. Robertson, Dominion Dairy Commissioner — third annual report. Other articles will appear in each succeeding number of the Canadian Cheese and Butter Maker. Notes for August, also September and October, also on "Fall Cheese Making," others on "Winter Cheese Making," fodder cheese, etc., all by the most eminent authorities in Canada.

NOTES FOR CHEESE MAKERS FOR JULY.

July cheese, like July butter, has a reputation for being the poorest of the summer. This year it should be exceptionally fine. The abundance of grass in June, with a too plentiful rainfall, will leave the pastures with richer herbage than usual. Suitable conditions for the production, preparation and preservation of the milk in a fit state for the manufacture of fine cheese can be continued by the patrons giving effect to these simple requirements:

It will be of quick and durable advantage to direct the attention of all patrons to the proper care of their milk.

When the yield of milk by the cows begins to shrink, the temptation to make up the quantity in some other way is increased. The Act passed by the Dominion Parliament to provide against frauds in the supplying of milk to cheese, butter and condensed milk manufacturers, is a piece of wholesome legislation.

It forbids the sending to any such factory (1) milk diluted with water, or (2) milk in any way adulterated, or (3) milk from which the cream has been taken, or (4) milk commonly known as skimmed milk, or (5) milk from which any portion of that part of the milk known as strippings has been kept back, or (6) any milk that is tainted or partly soured. The penalty for each offence against the provisions of the Act, upon conviction thereof before any justice or justices of the peace is a fine not exceeding fifty dollars, and not less than five dollars, together with the costs of prosecution.

The fine when recovered shall be payable, one-half to the informant or complainant, and the other half to the representative of the factory to which the milk was sent, to be distributed among the patrons in proportion to their respective interests in the product thereof.

Some of the qualities that are expected and desirable in the cheese of July are:

1. Rich, clean, creamy flavor.
2. Solid, firm, buttery body.
3. Fine, silky, flaky texture.
4. Bright, uniform color.
5. Attractive, neat, symmetrical, stylish appearance.

In order that cheese having just these qualities may be manufactured regularly, I make the following notes for guidance:

1. Thorough distribution of the rennet in the milk must be effected by diluting the rennet extract and by vigorous stirring.
2. Sufficient rennet to coagulate the curd into a steady fit for cutting in from 35 to 40 parts at from 86 degrees to 90 degrees should be used. When an extra quantity of rennet is used, a corresponding increase in the weight of salt should be added to the curd.
3. The contents of the vat should be perfectly still when coagulation commences. Vibration of the floor and of the vat during the thickening of the milk causes waste.
4. The horizontal knife should be used first in cutting, and active stirring should not commence until the cubes of curd become slightly heated.
5. The temperature should be raised gradually to 96 degrees or 98 degrees Fahr.
6. The stirring should be continued until the curd particles are so well "cooked" or "fried" that when a handful has been pressed for a few moments they will fall apart again as the result of any slight disturbance.
7. As soon as the presence of the acid is perceptible by the hot iron test, the whey should be removed. In the case

of gassy curds, a further development of acid before the drawing of the whey will be beneficial.

8. Hand stirring will be of advantage until the curd is firm.

9. The temperature should be maintained at or above 94 degrees.

10. The curd should be allowed to mat into one mass.

11. It should be turned so frequently that whey will not collect or stand in small pools in or on it.

12. If it becomes gassy it should be aired (if need be by grinding and stirring) and afterwards kept at a temperature above 90 degrees.

13. The gas formed in gassy curds hinders the development of acid; and the presence of acid prevents the formation of gas. The treatment should provide for the removal of the gas by aeration, and the maintenance of temperature by the application of hot water to the curd or steam to the vat or sink in which it is.

14. Close matting and packing of the curd are beneficial only after the curd is sufficiently dry and when aeration is provided for.

15. When the texture of the curd becomes stringy in its nature, it should be put through the cutter or grinder.

16. Aeration should be effected by the stirring of the curd before the addition of salt. Usually 15 minutes of such treatment will suffice.

17. Salt should be added at the rate of from 2 1/2 to 2 3/4 lbs per 1,000 lbs of milk, according to the dry or wet condition of the curd. A judicious variation in the quantity of salt should be made in proportion to the moist or dry state.

18. The "hoo,ing" of the curd should begin when the harsh surface, produced on each piece of curd by the salt, commences to give place to a sloppy, mellow quality.

19. Shoulders or projecting edges on cheese are unrightly evidences of careless workman, h.p. and lower their value from 2 to 3 shillings per cwt. in the English market. Careful pressing and bandaging and the turning of the cheese in the hoops in the morning will prevent their formation. The pressure should be continued for at least 20 hours. In that way cheese can be finished, having an attractive, neat, symmetrical and stylish appearance.

20. The sprinkling of cold water in the curing-rooms in the morning and just after noon, will reduce the temperature.

21. The curing rooms should be thoroughly ventilated and should be kept clean.

SEPARATORS AND THE SEPARATION OF MILK.

By Mark Sprague, Instructor of Dairy School, Guelph, Ont.

As cream separators are coming more into use every day in the creameries of the Province, we feel that a few hints as to their care and management would be welcomed by all who are interested in buttermaking.

As there are six or seven kinds of separators on the market, differing very much in construction, it would need as many sets of directions to make this part of our bulletins complete, but space will not permit of so full a treatment of this special department.

The principle of separation in each machine being the same, we will divide our separators into two classes, belt separators, and steam or turbine separators, the latter being driven by steam direct from the boiler.

1. Belt Machines.—A stone foundation is not required for those makes of separators that are built with a rubber ring around the upper bearing, but the best results are got from having all separators solidly placed or set. First, place the intermediate, or jack, in position. Level it and put it in line with the driving shaft. Then fasten it in position with bolts or lag screws, bearing in mind that it may be placed immediately under, or several feet either way from the centre of the driving shaft, as best suits the requirements, and taking care that the pulley on the driving shaft be of sufficient width to carry the belt, and allow of its being shifted

from the tight to the loose pulley of the intermediate, and vice versa, and of the proper size to give the exact speed required.

Next place the frame of the separator in position, far enough from the intermediate to give the proper tension to the endless belt. Level the machine both ways by placing your level on the top of the cast frame, which is turned true for this purpose. Line the separator with the intermediate by bringing the right hand outside surface of the spindle pulley in line with the centre of the face of the large intermediate pulley, having the vertical centre line of the spindle level with the under side of the intermediate pulley; then bolt the separator securely to the floor or foundation, unless it be one that has the spindle and bowl connected by a socket joint. If the spindle is so connected, bolting down will be unnecessary.

Bear in mind that the separator bowl should revolve or turn to the right, or with the sun, and that the intermediate should run from the separator. Never put the idler or tightener on the drawside of the belt. Where only one separator is used, put on all the belting and start the separator with the engine, taking from ten to fifteen minutes to reach the proper speed. Wipe all bearings to free them from dust or dirt, and see that all oil tubes are cleansed and free to allow the oil to flow to the bearings. Look carefully after this matter from day to day.

2. Steam or Turbine Separators. In setting a steam or turbine machine you have only to decide on the place to set it. This separator also must be set solid so as to free from the possibility of vibration, and must be levelled in the same way as the belt machines. Turbine separators are all fitted with three-quarter steam fittings, but if the separator be placed so that more than twenty feet of pipe is required to reach to the boiler, use a larger pipe to insure sufficient steam to drive it properly, adding one quarter of an inch in size of pipe for every twenty feet in distance. Take care to remove all scales and cuttings from pipes before placing them in position.

The exhaust pipe is usually made of galvanized iron, four inches in diameter. It may be conducted through the side of the building, provided it is placed so as to drain well, or it may be put through the roof. The latter method is to be preferred, as the danger of frightening horses is thus done away with. It should be long enough to reach higher than any point of the roof, in order that the draft may not be interfered with. When it is put through the roof, a drain pipe must be connected with the elbow at the lowest point to carry away the condensed steam. This in most cases may be put through the floor or be allowed to run into a pail. Next put the bowl and spindle in place, being sure to have all bearings cleaned and oiled. Then fill the bowl with water. If it be a separator that has steam turned directly against the bowl, this will keep the bowl cool until sufficient speed has been reached to cause a current of air around the bowl, which will keep it cool thereafter. Apply steam gradually, having the regulating valve set so that it will keep the pressure at from forty-five to fifty pounds on the steam gauge. If there is no safety valve, the pressure will have to be regulated by the globe valve.

After speed has been reached in either the turbine or the belt separator, the milk should be turned on full feed, until both the cream and the skim-milk flow freely; then it should be closed off till the cream is the desired thickness.

Milk separates best when fresh or new, and at a temperature of ninety degrees. But in creameries the usual practice is to bring the night's and morning's milk together to the factory. In such cases, if the temperature has fallen below eighty-five degrees, the milk should be heated to eighty-five or ninety degrees at least eight or ten minutes before going into the separator. This is done by means of a tempering vat, holding about 400 pounds, and attached to the receiving

vat, so as to have a constant and regular flow to the separator.

Heating increases the difference in the specific gravity between the serum and the fat of milk and thus facilitates the separation of the latter. Frozen milk separates better when heated five to eight degrees higher than that which has not been frozen.

After all the milk has been separated, the cream left in bowl can be forced out by putting in some skim-milk or water; about two pails will be needed for this purpose. Shut off the feed tap for a few seconds when about one pailful has gone through; then turn it on again.

Always allow the bowl to stop of its own accord after the power has been taken off — never apply any brake or friction to it. Wash in tepid water the bowl and all the parts that come in contact with the milk or cream, cleaning all foreign substances from the skim-milk tubes, etc. Then scald with steam or boiling water and allow to dry after which the parts may be put together for operation next day.

Two thicknesses of quarter-inch rubber packing placed under the outside edge of the base, before bolting the separator down, improves the running of any separator. Four rubber rings, one under each corner, also have a beneficial effect in making the separator run smoothly and quietly.

In conclusion, we would say to any one who gets a separator: If you are not familiar with it, get some person who has had experience to assist you in setting it up. The very high rate of speed at which cream separators run, makes them somewhat dangerous in the hands of inexperienced operators.

THE USES OF SALT.

Salt puts out a fire in the chimney. Salt in whitewash makes it stick.

Salt used in sweeping carpets keeps out the moths.

Salt in solution inhaled cures a cold in the head.

Salt on fresh ink stains will help to remove them.

Salt as a gargle will cure soreness of the throat.

Salt and soda are excellent for bee stings and spider bites.

Salt and vinegar will remove stains from discolored teacups.

Salt in the water is the best thing to clean willowware and matting.

Salt on the fingers when cleaning fowls, meats or fish, will prevent slipping.

Salt in the oven under the baking tins will prevent their scorching on bottom.

Salt thrown on a coal fire when broiling steak will prevent blazing from the dripping fat.

DAIRYING DOTS.

Mr. F. C. Harrison, bacteriologist at the Ontario Agricultural College, Guelph, has made a large number of analyses of Canadian cheddar cheese during the past two years, and has obtained a lot of valuable information in regard to the kinds of bacteria producing bad flavors in cheese. Last season Mr. Harrison received a sample of cheese from Instructor Publ'w, of the Eastern Dairyman's Association, containing a bad flavor which on careful investigation was found to be caused by undesirable bacteria getting into the cheese from the use of bad water at the factory. The cheese from which this sample was taken was made at the Ashton Union Factory. According to Mr. Publ'w's report everything about the factory was in good order and kept clean and tidy, only the water from the well had a very bad flavor. The cheese was good in every way except having a bad flavor. The water at the Ashton factory was condemned, and on discontinuing the use of the water from the well the cheese made afterwards was all right. Hence we may repeat what has often been said, viz., that factorymen should pay very close attention to the water supply in their factories, to see that it is clear, pure and good. Bad smelling water should never be used for setting vats. In all doubtful cases the water should be boiled, and then cooled to the required temperature.

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