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Milk, the Food of Foods

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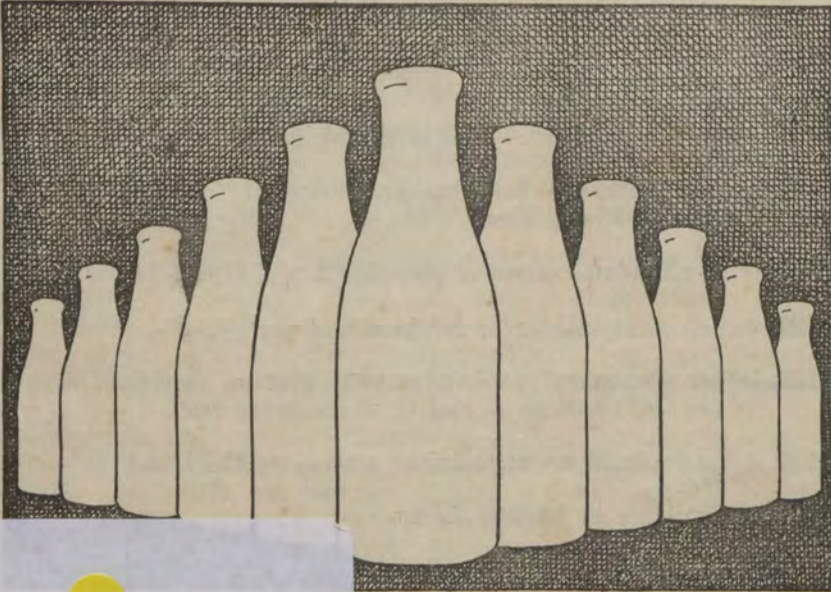
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DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE

MILK THE FOOD OF FOODS

by
LAURA C. PEPPER



Culinary History Pamphlets



MARKETING SERVICE
CONSUMER SERVICE SECTION

Published by authority of the Hon. JAMES G. GARDINER, Minister of Agriculture,
Ottawa, Canada

Milk is the most nearly perfect food.

Milk is an essential food for children and a valuable food for adults.

Milk is the richest source of calcium—the tooth and bone building mineral.

Milk supplies phosphorus—used with calcium in the body.

Milk proteins are the best building material for growth and repair of body tissue.

Milk is an abundant source of vitamins A and G.

Milk contains fat and sugar for heat and energy.

Milk is an economical food, supplying protein, calcium, phosphorus, vitamins A and G at moderate cost.

Milk helps to build up an alkaline reserve in the blood.

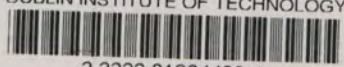
Milk is available in various forms.

Milk needs to be carefully handled from producer to consumer.

Milk should be kept clean, cool and covered in the home.

56% for
day.

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THE VALUE OF MILK IN THE DIET

The close relationship of well-balanced meals to good health which has been established during recent years has created a keen interest in the subject of nutrition. The old adage "one must eat to live" is no longer considered complete, for in the light of modern knowledge it should be extended to "one must eat enough of the right foods to live in good health." Sound nutrition is necessary for adults, but greatest emphasis should be placed on the provision of an adequate diet for children, as normal development and health in later years are dependent to a marked degree on proper nourishment during early years of growth.

Much should be written to completely cover the subject of milk from a nutritional standpoint, but in this bulletin it is practical to give only the most important information in a concise manner. By calling attention to the contributions milk makes in nourishing the human body it is hoped to create a desire among Canadians to use more of this greatest of all foods.

Milk is one of the so-called "protective foods" which are chiefly valuable for their mineral, vitamin and high quality protein content. From a study of the nutritive requirements of the human body and of the nutritive properties of milk it is evident that milk should form a conspicuous part of the diet throughout life. Milk ranks first among foods because it furnishes more of the essentials of the diet than any other food—in other words, no other single food can be substituted for it.

Milk is an easily and thoroughly digested food and one which helps to build up an alkaline reserve in the blood. As soon as milk reaches the stomach the gastric juices act upon it and change it from a liquid into curds and whey. Pasteurized, boiled, and the various concentrated milks tend to be more digestible than raw milk, since the application of heat to which the milk is subjected produces a more tender curd.

Milk contains approximately thirteen per cent solid matter, a larger amount than occurs in many foods, yet a fact frequently overlooked because milk is in liquid form. The solids are composed of several food elements—proteins, fats, sugar, minerals—each of which performs its special function in nourishing the body. In addition milk is a valuable source of vitamins, the accessory food factors, which assist in the utilization of the various food elements.

Milk varies slightly in composition, due to the fact that some breeds of cattle, Jersey and Guernsey for example, produce milk richer in fat than other breeds. The average composition of milk may be taken as approximately:—

	Per Cent
Water	87.5
Proteins	3.2
Mineral Matter	0.7
Butterfat	3.6
Sugar	5.0

PROTEINS IN MILK

Proteins must be supplied in the diet for the building of muscle and body tissue in the child, and for the repairing of worn tissue and muscle in the adult. The proteins in milk, which include casein and small amounts of lactalbumen and lactoglobulin are composed of amino acids similar to those found in the human body, and because of this, are well adapted to conversion into body material. It is recommended that half of the protein intake should be of animal

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origin—particularly milk, eggs, and glandular animal tissues. Milk is a splendid food to supplement breads and cereals, as it makes up the deficiencies of grain proteins with respect to essential amino acids. When milk and cereals are used together in the diet the nutritive value of the proteins is greater than when these foods are used separately.

MINERALS IN MILK

Calcium and phosphorus combined make up about eighty-five per cent of the structure of bones and teeth. These minerals must be supplied by foods. Milk stands first as a source of calcium—a pint and a half of milk providing approximately a gram of calcium, which is the amount required daily during the early years of childhood. A quart of milk will meet the calcium needs of infants and of older children during the years of most rapid growth and also of pregnant women and nursing mothers. Associated with calcium in milk is phosphorus, occurring with calcium in the same proportion as it is found in the teeth and bones of the body.

The need for calcium and phosphorus begins with the development of the skeleton structure before birth. It is, therefore, vital that during pregnancy the diet include an extra supply of milk to provide calcium for the developing body as well as for the expectant mother. Very often the mother's teeth become decayed due to lack of calcium in her diet during pregnancy. When the child is born the need for calcium and phosphorus continues, and milk, the most practical source of these two minerals, should form the basis of the diet in order that bones and teeth may develop normally. Calcium-poor diets, result in faulty bone formation and soft, unhealthy teeth. Diet has an influence on teeth even after they are fully developed, and the generous use of milk, supplemented by other foods high in vitamin contents, is recommended to prevent the development of dental caries. The importance of milk in meeting the calcium needs of the body is stressed by Dr. Frederick F. Tisdall, Director of Nutritional Research Laboratories, Hospital for Sick Children and Department of Paediatrics, University of Toronto. Dr. Tisdall writes "Our greatest sources of calcium are milk and milk products. To get an adequate supply, adults should consume each day, from one-half to one pint of pasteurized milk, while the growing child who is forming new bones should take a pint and a half of milk."¹

VITAMINS IN MILK

Vitamins considered collectively may be termed "protective factors" which aid in promoting growth and establishing health. Although vitamins are found in many foods, few are abundant sources of more than one. However, a diet which includes liberal amounts of dairy products, fruits, vegetables and whole grain cereals will ensure an adequate intake of all vitamins, with the exception of vitamin D, which is supplied mainly through sunshine. Individually each vitamin is of particular use to the body and for this reason vitamins must be considered separately to determine the contribution milk makes toward furnishing these accessory food factors.

Vitamin A aids in maintaining resistance to infections of the respiratory tract and is associated with the formation of tooth enamel. Night blindness inability to see clearly in a dim light or to readjust the vision quickly after subjection to bright light may result from a deficiency of vitamin A in the diet. Milk and milk products in which milk fat is retained, are the most

¹"What to Eat to be Healthy," by Dr. Frederick F. Tisdall, second edition, 1938.

reliable sources of vitamin A. It is found in the fat of milk and is more abundant when cows are feeding in green pasture. Nutrition authorities stress the importance of a liberal use of milk, cream, butter and cheese supplemented by eggs and green and yellow vegetables to ensure an adequate amount of vitamin A.

Vitamin G (B2) is essential for normal health and vigour. A deficiency of vitamin G in the diet interferes with growth and health and may result in nervous and digestive disorders. In the ordinary well-balanced diet milk contributes largely to the vitamin G content although eggs, meats, fruits and vegetables also supply this vitamin.

Vitamins B (B1), C and D play a part in sound nutrition. Vitamin B is required for normal muscular action and for retaining healthy nerve tissues. Yeast and whole grain cereals containing the germ are the richest source of this vitamin. Dr. Henry C. Sherman, Professor of Chemistry, Columbia University, eminent authority on nutrition, suggests however, that if half of the food calories comprise fruit, vegetables, milk and eggs, and half the breadstuffs and cereals are in whole grain form, vitamin B will be amply supplied. Vitamin C, which is associated with calcium in the formation of teeth and bones, is found in abundance in citrus fruits, tomatoes and other fresh fruits and vegetables. Vitamin D is especially important for growing children. With calcium and phosphorus it is an added factor in the formation of sturdy bones. To ensure sufficient vitamin D for children, fish liver oils, irradiated milk and irradiated cereals are recommended for use during the months of the year when their bodies cannot be directly exposed to sunlight.

From the foregoing it is readily understood that, although not supplying all known vitamins, its abundant vitamin A and G content, together with lesser and variable amounts of B and D, make milk an important "vitamin" food.

FAT IN MILK

Like other fats, the fat occurring in milk is a concentrated heat producer furnishing two and a quarter times as much heat for the production of energy as an equal amount of sugar or starch. Milk fat, or butterfat, as it is commonly called, is one of the most easily digested fats and as it is already emulsified it is more readily available to the body than the fats of other common foods, and has an additional value nutritionally due to the fat-soluble vitamins which it contains.

SUGAR IN MILK

Carbohydrates, sugars and starches are burned in the body as fuel to supply the energy needs of the body and to produce heat to keep the body warm. The carbohydrate is present in soluble form in milk as milk-sugar or lactose.

MILK IN VARIOUS FORMS

Dr. Henry Sherman writes, "Any form of milk is nutritionally more like any other form of milk than is any other food."¹ The various types of milk and the forms in which this healthful food is placed on the market should be understood so that consumers will know what each supplies nutritionally.

FRESH MILKS

In addition to the milk which is sold in Canada under the name of the breed of cattle from which it is produced, fresh milk is sold under several descriptive terms. In most cases these indicate the process which the milk has undergone in preparation for marketing. The production and sale of milk for human consumption is controlled provincially and municipally. Regulations are enforced pertaining to sanitation, and standards are set for milk sold within the province or municipality. As far as butterfat is concerned most of the provinces require a minimum fat content of 3.25 per cent, while in others the minimum for butterfat is slightly higher. Municipalities in turn may set a higher minimum fat content than the province requires.

Raw Milk, as the term implies, is milk in its natural state. Although there is still a large amount of raw milk sold in Canada, it is being rapidly replaced by pasteurized milk in cities and towns. A strong argument against the use of raw milk is that even if produced from healthy cattle it can be easily contaminated by harmful bacteria, and may prove injurious to the health of the consumer. Raw milk cannot be guaranteed safe for human consumption.

Pasteurized Milk is milk which has been subjected to pasteurization. In brief, the usual process consists of heating the milk to a temperature of 142° to 145° F., holding it at this temperature for 30 minutes, and then cooling it rapidly to 50°. Another process is the high-temperature short time method, in which the milk is heated to a temperature of 160° to 163° F. for a period of 15 to 20 seconds, and then cooled immediately to 50° F. or less. By these heating processes disease-producing bacteria which may be in the milk are killed, rendering the milk safe for human consumption. Pasteurized milk is being more generally sold throughout Canada as the necessity for a safe milk supply is realized.

Arguments are sometimes advanced in opposition to the pasteurization of milk, the claim being made that the process changes the milk and lessens its food value. Extensive experimental work on the subject conclusively proves that, although precipitation during pasteurization causes slight loss of calcium, and the heating process destroys part of the vitamin C content, the total loss in nutritive value is negligible compared with the benefit derived in the protection to health. Milk is exceptionally rich in calcium and still remains an abundant source of this mineral after pasteurization, and it should also be remembered that even raw milk is not relied upon to supply vitamin C. Raw milk, bottled or in bulk, may be satisfactory pasteurized in the home. A detailed description of the process and the advantages of a pasteurized milk supply are given in Publication 580, "Why Pasteurize Milk," Dominion Department of Agriculture.

Homogenized Milk, in addition to being pasteurized, is passed through a homogenizer. This apparatus has a narrow aperture through which the milk is forced at high pressure, breaking up the fat globules into such minute particles that they cannot rise in the form of cream. Homogenization increases the viscosity or body of the milk without adding to the percentage of fat.

¹"Food and Health," Dr. Henry C. Sherman, The MacMillan Company, N.Y., 1934.

Irradiated Milk is pasteurized milk which is exposed in a thin film to ultra-violet rays. The irradiation process adds sufficient vitamin D to the milk to meet human requirements of this "sunshine" vitamin, provided the recommended quota is used daily. Irradiated milk is not yet widely sold in Canada, but is available from dairies in some of the larger cities.

Certified Milk is produced from tuberculin-tested cows and handled under strict sanitary inspection. Certified milk is produced in accordance with the methods and standards adopted by the American Association of Medical Milk Commissions, Incorporated, and is under the direct supervision of the local health department in the municipality where it is sold. Pasteurization of certified milk is optional, but is advised to ensure a safe product. Because of its necessarily high price the sale of certified milk is limited in extent.

Graded Milk is not sold to any extent in Canada. In a few centres graded milk is on the market, in which cases the grades usually indicate a difference in butterfat and bacterial content. Graded milk must conform with the regulations of the municipality where it is sold.

Chocolate Flavoured Dairy Drink is a milk drink which has been introduced recently to consumers in many centres throughout Canada. According to regulations under the Food and Drugs Act, Chocolate Flavoured Dairy Drink can be made from whole milk, skim-milk, whole milk powder or skim-milk powder, to which is added sugar, prepared chocolate or prepared cocoa, salt and flavouring. It must be labelled "Chocolate Flavoured Dairy Drink" and the percentage of milk fat contained in the drink must be shown on the bottle cap.

Skim-milk, which is very often available at small cost, is a valuable food, even though its caloric value is less than that of whole milk. Although lacking in fat and fat-soluble vitamins A and D, skim-milk contains the protein, calcium, phosphorus, sugar and water-soluble vitamins B and G. Skim-milk has not the same palatable flavour and creamy texture as whole milk, but it can be flavoured to make delicious milk drinks and is excellent for cooking. If used in place of whole milk, the difference in fat may be supplemented by butter. A quart of skim-milk plus an ounce and three-quarters ($3\frac{1}{2}$ tablespoons) of butter is the approximate equivalent of one quart of whole-milk in food value.

The value of skim-milk has been demonstrated in the feeding of growing animals and poultry, and to-day it is highly recommended as part of the daily ration. Skim-milk plays just as important a part in human as animal nutrition, and where low-cost diets are essential, it may be used advantageously in the preparation of the family meals as part of the milk quota. When the body is overweight the use of skim-milk is recommended, as its low caloric value and its many nutritional factors make it an ideal food for the reducing diet. The Technical Commission of the Health Committee of the League of Nations draws attention to the high nutritive value of skimmed and separated milk which, although deprived of its vitamin A through removal of the fat, retains the protein, the B and C vitamins, the calcium and other mineral elements.¹

FERMENTED MILKS

Buttermilk, whether produced on the farm or made commercially, has practically the same food value. The buttermilk obtained when unpasteurized cream is churned has an acid flavour, and contains small particles of fat. Commercial cultured buttermilk is made by adding a lactic-acid bacteria culture to pasteurized skimmed or partly skimmed milk. The cultured milk is kept at a temperature of about 70° F. until ripened or sufficiently coagulated. The coagulated milk is agitated in the vat or churned to break up the curd to a smooth consistency. It is then cooled, bottled and stored at a temperature of 50° F. or lower.

¹League of Nations Report, Vol. 2, by the Technical Commission of the Health Committee. 31749-23

Buttermilk is similar in food value to skim-milk unless it is made from milk with an appreciable butterfat content, in which case it will contain fat and vitamin A, the amounts depending on the fat content of the milk. Buttermilk is easily digested, as it forms a tender curd in the stomach, and for this reason is often prescribed for babies and adults with digestive disorders. Like skim-milk, it is valuable in a reducing diet, as it is low in caloric value and yet furnishes most of the body essentials. Buttermilk is a refreshing beverage, but it can also be used in cooking in the same way as sour milk.

Sour Milk is a good food which should not be wasted, as the food value of milk is not altered in any way through souring. Lactic acid is produced by the action of harmless bacteria on the milk sugar, and this acid in turn acts on the protein, causing coagulation. The milk should be used as soon as possible after souring, as it will develop an undesirable flavour if allowed to accumulate for any length of time. One of the best ways of using a quart or more of freshly soured milk is to make it into cottage cheese. Smaller amounts can be used to advantage for griddle cakes, scones, tea biscuits and also for spice and chocolate cakes. When substituting sour milk in a recipe which calls for sweet milk, use the same amount of milk, and for each cup of sour milk used, add $\frac{1}{2}$ teaspoon soda and deduct 2 teaspoons baking powder.

Acidophilus Milk is a fermented milk made with a pure culture of the *lacto bacillus acidophilus*. Following sterilization the milk is cooled to 98° F. and inoculated with the culture. This temperature is maintained until a firm curd is formed, which usually requires 18 to 24 hours. The curd is then broken up, cooled to room temperature and bottled. Acidophilus milk is of a creamy consistency, and has an agreeable mildly acid flavour. As it is easily digested and improves intestinal hygiene it is often prescribed by physicians. The *lacto bacillus acidophilus* thrives best in the presence of lactose—milk sugar—and in diets where acidophilus milk is used lactose is often included as a supplementary food. Acidophilus milk is not available everywhere in Canada, but is usually sold by one or more dairies in larger centres.

Yoghourt is a fermented milk usually sold in curd form. In making Yoghourt the milk is evaporated to about three-quarters of its original weight. It is then inoculated with Yoghourt culture, which is a combination of three types of lactic acid bacteria, poured into sterile bottles and capped. It is held at a temperature of 112° F. about three hours until coagulation takes place, cooled to 50° F. and kept at this temperature until used. Because of its concentration Yoghourt has higher nutritional value than fresh, whole milk. It is easily digested and tends to combat intestinal infections and putrefactions.

CONCENTRATED MILKS

Milk is now on the market in various condensed forms which decrease its bulk and improve its keeping qualities. Types of concentrated milk include evaporated milk, condensed milk, whole and skim-milk powder. Factories producing these milk products are under government inspection and labels intended for use by manufacturers must be submitted for approval to the Dominion Department of Agriculture. Dominion Government regulations require that definite standards be maintained in the manufacture of concentrated milks.

Evaporated Milk (unsweetened condensed milk) is fresh cow's milk from which about 60 per cent of the water is removed by heating the milk in vacuum pans at 130° F. Following the evaporation process the milk is homogenized breaking up the fat globules into very small particles. Through a small aperture in the lid it is then poured into cans which are immediately sealed and sterilized at about 240° F. for 5 minutes. Evaporated milk will keep for a long time

in the unopened can, but after the can is opened it requires the same care as fresh milk. The directions on containers of evaporated milk call for the addition of an equal amount of water to reconstitute it to whole milk, replacing the water that was removed in manufacture. As it takes approximately two and one-half pounds of whole milk to make one pound of evaporated milk, nineteen and one-half ounces of evaporated milk is closely equivalent in food value to one quart of whole milk. Sixteen and six ounces are the standard size cans of evaporated milk sold in Canada for household use.

Through irradiation by ultra-violet rays, vitamin D—the anti-rachitic vitamin—is added to most of the evaporated milk made in Canada. Like fresh milk evaporated milk is a good source of vitamins A and G. These two vitamins are heat resistant and in the process of manufacturing evaporated milk are not destroyed.

Homogenizing evaporated milk and subjecting the filled cans to high temperature to sterilize the product has the beneficial effect of forming a more tender curd which is very easily digested—a point stressed when evaporated milk is recommended for infant feeding.

Evaporated milk has varied uses. Diluted, it can be substituted for fresh milk in cooking; undiluted, or with only a small amount of water added, it may be used in place of cream.

Condensed Milk (sweetened condensed milk) differs from evaporated milk, as it is a sweetened product. After evaporation removes about 60 per cent of the water, cane sugar is added in the proportion of approximately 17 pounds to 100 pounds of original milk. The added sugar makes it impossible to reconstitute condensed milk to whole milk and therefore limits its uses. The composition of condensed milk is standardized according to Dominion Government regulations.

Milk Powder is generally made from skim-milk, although whole milk powder is also on the market. The spray and roller processes are used in Canada in manufacturing milk powder. Both remove practically all the water from the milk and leave a fine white powder which retains the protein, sugar, mineral and some of the vitamin content of the original milk. Whole milk powder contains, in addition, fat and fat-soluble vitamins.

Milk powder must conform with Dominion Government regulations. The word "skimmed" must appear on the label of the cans containing skimmed milk powder in letters the same size as those used in the word "milk." The directions given on the container for reconstituting the powder to fluid milk should be accurately followed. In the case of whole milk powder one-quarter cup powder to one cup water is used to restore it to whole milk; with skim-milk powder three tablespoons to one cup are the proportions. Whole milk powder resembles fresh milk very closely when the necessary amount of water is added to it. Reconstituted skim-milk powder lacks fat, but it is as valuable as skim-milk in the diet, and can be used to advantage in cooking. It has wide use commercially in the manufacture of ice cream and bakery products. Five and one-half ounces of whole milk powder is the approximate equivalent of one quart of whole milk; three and three-quarter ounces of skim-milk powder is equal to one quart of skim-milk, and if combined with an ounce and three-quarters ($3\frac{1}{2}$ tablespoons) of butter it will be approximately equivalent to one quart whole milk in nutritive value.

Malted Milk is made by combining whole milk with the nutritive extracts from a mash of ground barley malt and meal, scientifically blended and then powdered. The composition of malted milk as to milk fat and moisture is standardized according to Dominion Government regulations under the Food and Drugs Act. Malted milk is easily digested and the combination of malted grain extracts and milk make it a rich source of vitamins.

CARE OF MILK FROM PRODUCER TO CONSUMER

Quality is important in all food products, but it is vital where milk is concerned. Because milk is in liquid form it is susceptible to contamination, and the chemical constituents which make it a splendid food for human nutrition, make it also an excellent medium for bacterial growth. Such bacteria include those which bring about deterioration of the milk and the type which produces disease. The rate at which germs develop in milk depends largely on temperature. Bacteria grow most rapidly at 70° to 100° F., while a temperature lower than 50° F. retards their growth. High temperatures used in pasteurization and sterilization of milk destroy bacteria. The importance of healthful milk in the human dietary makes it essential that every step in the production and handling of milk from producer to consumer be carried out with utmost precaution.

ON THE FARM

The first requisite in providing a safe milk supply is cattle free from such disease as tuberculosis and contagious abortion. Three plans to eradicate tuberculosis among cattle are in operation throughout Canada under the Dominion Department of Agriculture:—the accredited herd plan, the supervised herd plan and the restricted area plan. The restricted area plan is the most widely used of the three, and by this method great progress is being made in the control of bovine tuberculosis.¹

Effective work is also being done in the various provinces to eradicate contagious abortion among cattle. This disease is known as undulant fever when it develops in the human body, and can be contracted by drinking raw milk infected with the *Bacillus abortus* germ.

Cleanliness of production is the next step toward ensuring pure milk. Care must be taken in every step through which milk passes, as it is constantly subjected to contamination. The most common and serious sources of contamination on the farm are unsterilized utensils and unclean cows. Dirty milk utensils and dirt falling from the cow into the milk pail have each been found to be responsible for more bacteria infecting milk than all other factors combined.²

The essential steps, which include thorough washing, sterilizing, and drying, to effectively control contamination from utensils are described in "The Care of Farm Dairy Utensils," publication 627, Dominion Department of Agriculture.

The precautions which should be taken to avoid contamination from the cow's body are stressed in the bulletin "Producing Clean Milk."

The next step in the production of milk is proper cooling to arrest the growth of bacteria which affects its keeping quality. The most satisfactory method of cooling milk is outlined in "Cooling Milk on the Farm," Bulletin 165, New Series, Dominion Department of Agriculture. Milk should be held at a temperature not exceeding 50° F. until it reaches the milk distributing plant or is delivered to the consumer. Milk used in the farm house should be kept cool, clean and covered. Even if produced from tested cattle it is advantageous to pasteurize the milk to destroy harmful bacteria which it may contain.

¹"Bovine Tuberculosis," Dominion Department of Agriculture.

²"Producing Clean Milk," Pamphlet 79, New Series, Dominion Department of Agriculture.

IN THE DAIRY

Sanitation is the key-note of the modern dairy. Sterilization of all equipment is recognized as vital to the marketing of high quality milk. On arrival at the plant the milk is weighed and samples are taken to be tested for butterfat, sediment, acidity and bacterial content. If the milk is to be pasteurized it is put through this process (*see* page 6) and rapidly cooled over cooling coils to a temperature of 50° F. Sterile bottles are filled and capped by automatic filling and capping machines. The bottled milk is immediately stored in a cool room to maintain the 50° F. temperature. The control of temperature during delivery is a serious problem continually confronting milk distributors. To cope with the situation, milk is usually delivered iced early in the morning during the summer months, and in the winter precautions are taken to keep milk from freezing en route.

Milk distributors putting a wholesome, safe milk on the market welcome the interest of their customers, and usually encourage visits through their plants, so that patrons may see for themselves the care that is taken to provide them with a high quality product.

IN THE HOME

The value of milk makes the care of this food of great importance, and in this the homemaker shares the responsibility with the farmer and the distributor. Cleanliness and cold temperature continue to be the important factors after milk reaches the home. Milk will deteriorate quickly if carelessly handled in the home, regardless of the care taken by producer and distributor. Taking for granted that the consumer will buy bottled, well-capped and when possible, pasteurized milk, the first necessity is to provide a receptacle in which the bottles of milk can be placed when delivered. In most recently built homes such a receptacle is built into the wall. If the home is not so equipped, an insulated, covered box on the same principle as a fireless cooker can be purchased or cheaply made. The container in which the milk bottles are placed should be kept thoroughly clean. The purpose of either the built-in receptacle or the insulated box is to keep the milk cool in summer and prevent it from freezing in cold weather. Milk that is allowed to stand on the door step during the hot weather soon develops a tallowy flavour and becomes sour due to bacterial action. If left exposed to the cold in winter milk will very often freeze, forcing the cream out of the bottle and subjecting it to contamination. Freezing affects flavour of milk and the emulsion of the fat, making milk that has been frozen harder to digest than fresh milk.

As soon as possible after delivery milk should be taken into the house. Before putting the milk in the refrigerator the cap and the bottle should be washed off to remove any dirt or dust which may have adhered to the bottle during delivery. The milk should then be put immediately into the refrigerator. The coldest part of the refrigerator is the best place to store the milk, where the temperature will probably be about 45° F. and at the most not more than 50° F. In ice refrigerators the coldest section is directly below the ice chamber. In automatic refrigerators the manufacturers usually provide a special open section for milk. When no refrigerator is available wrapping the milk bottle in a wet cloth and standing it in a dish of cold water, or putting the milk in a cold basement will keep the temperature fairly low.

Milk should be kept in its storing place except when it is actually being used. In cooking with milk, the bottle should remain in the warm kitchen only long enough to measure out what is required. In serving milk the amount put on the table should be as nearly as possible what will be used, and after the meal milk, cream and butter should be the first foods put away. Leftover milk

should not be poured back into the bottle, as the milk in the bottle will be several degrees colder than that taken from the table, and mixing them may affect the keeping quality and flavour. Milk pitchers should be thoroughly washed and frequently scalded.

Milk should be kept covered at all times to protect it from dirt, bacteria, and particles of other foods which might drop into the bottle. Many housewives discard the cardboard bottle-cap and use special sanitary metal or glass covers which can be bought for a few cents. Like other utensils, such covers should be kept perfectly clean. Milk readily absorbs flavours and odours of other foods. To guard against this milk should be kept covered and as far removed as possible from such foods as onion, cabbage and fish.

As soon as the milk bottle is empty it should be rinsed with cold water, washed with hot, soapy water, then scalded with hot water. Milk bottles are the property of the dairy and the dairy asks the co-operation of the homemaker in leaving the clean, empty bottles to be regularly collected. Keeping milk bottles in the home to be used for other purposes, and carelessness in returning empty bottles increases the number of bottles required by the dairy. This means additional operating expense and tends to raise the retail price of milk.

The care of milk in the home is of such importance that it is well to summarize the steps which should be taken by the homemaker in looking after this wholesome food.

Provide a receptacle in which the route salesman can put the bottles of milk.

Take the milk into the house as soon as possible following delivery.

Rinse bottles and caps.

Keep milk in a cold place—preferably a refrigerator.

Keep milk bottle covered.

Pour out only enough milk for each meal.

Keep milk pitchers and other utensils scrupulously clean.

When empty rinse, wash and scald bottles.

Return all empty bottles daily.

CONSUMPTION AND USES OF MILK

Milk is abundantly produced in the vast agricultural districts in Canada and, except in isolated sections of the country, is readily available. In the year 1940 it is estimated that there were 3,894,700 milch cows in Canada and that 16,283,077,599 pounds or 1,580,881,310 gallons of milk were produced.¹

In view of the high production figure it seems incongruous that the average daily per capita consumption of milk in Canada is only about two-thirds of a pint, the amount consumed in rural districts being higher than in urban centres.² This is partially explained by the fact that many people do not thoroughly appreciate the important role this indispensable food plays in nourishing the body. The present consumption is much lower than that recommended by reliable authorities who have made a study of nutrition. The Technical Commission of the Health Committee of the League of Nations recommends the daily use of 750 grams of milk (about 1½ pint) for children 1 to 2 years, and 1,000 grams (about 1¾ pint) for children up to 14 years of age and for pregnant and nursing women. The Commission emphasizes the fact that milk should form a conspicuous element of the diet at all ages.³

Milk is the best foundation on which to build meals for both children and adults. A daily allowance of a pint and a half to one quart for each child, particularly during years of most rapid growth, will supply the required calcium, as well as appreciable amounts of protein, vitamins and other growth-promoting factors. A pint of milk daily is beneficial to adults, not merely for its caloric contribution, but for its properties essential for the maintenance of health. A practical way to provide for sufficient milk in the daily meals is to budget the food money. Dr. Sherman suggests as a general guide for all food budgets, irrespective of difference in total money to be spent, that at least as much should be spent for milk (including cream and cheese, if used), as for meats, poultry and fish, and that at least as much should be spent for fruit and vegetables as for meat, poultry and fish. Recent research has repeatedly confirmed and strengthened the principle that the dietary should be built around bread and milk.⁴ When the budget is reduced to a minimum for economic reasons, bread and other grain products, which are inexpensive foods, form a prominent part of the diet. These high caloric foods must be supplemented by milk to supply calcium and vitamins, and it may be found necessary to spend as much as one-fourth or more of the total food money for milk.

In planning foods for the family it is a good idea to think of the children first, and on this foundation, make the necessary alterations and additions to the menu to suit the adults. It is indeed fortunate that a well-balanced diet may be obtained from simple foods. The homemaker who sees that the satisfying, well-cooked meals she prepares for her family contain a liberal amount of "protective foods"—milk, fruit, vegetables, eggs, meat and whole grain products—may feel assured that she is looking after her family nutritionally. Milk is the first food to be considered, and it is an easy matter to incorporate sufficient

¹ Annual Summary, Dairying Statistics of Canada, 1940, Dominion Bureau of Statistics.

² Publication 608, Dominion Department of Agriculture, "An Economic Study of the Consumption of Milk and Cream in Certain Urban and Rural Districts of Canada."

³ League of Nations Report, Vol. 2, by the Technical Commission of the Health Committee.

⁴ "Food and Health," by Dr. Henry C. Sherman, The MacMillan Company, New York, 1934.

milk in the daily meals. A healthful habit is to serve at least two milk dishes such as cream soups, scalloped dishes and milk desserts every day.

Usually adults drink milk during the day. It may be as a flavoured milk drink taken with a meal or as a hot beverage before retiring. Along with the cooked dishes an adult's milk quota will be amply supplied in this way. In the majority of cases the extra amount required by children can be supplied by serving milk as a beverage at or between meals.

Most children like to drink milk, but occasionally a child has a dislike for it. Then the mother is confronted with a real problem, for a "milk appetite" must be created by preparing it in appealing ways. With younger children good results may be obtained by allowing them to drink the milk through a straw or by changing the appearance and flavour of the milk by making special milk drinks. Stories about athletes and people who drink milk to grow strong appeal to children and are effective. Children like to be independent, and allowing the child to use his own pitcher and glass may have a desired result. For children who refuse to drink milk in any form a considerable amount can be incorporated in the child's diet by regularly serving cereals cooked in milk, vegetables, fish, chicken and meats with cream sauce, eggs poached in milk, milk desserts and cream soups.

The recipes which follow give directions for making only a few of the countless number of nourishing foods and drinks which may be prepared with milk. In addition to these types of dishes, an appreciable amount of milk can be included in the meals by using it in cooking fish and meats, in making gravies and in baking bread, biscuits and cakes. In many of the recipes skim-milk may be used in place of whole milk, adding butter if desirable. Evaporated milk and milk powder may also be used by reconstituting these manufactured products to fluid milk—the proportions to use are 1 cup of evaporated milk, $\frac{1}{4}$ cup of whole milk powder or 3 tablespoons of skim-milk powder with 1 cup of water.

When using skim-milk, or skim-milk powder in place of whole milk the difference in fat content may be made up by adding $\frac{3}{4}$ tablespoon extra butter for each cup of skim-milk or reconstituted skim-milk powder used.

Recipes for milk desserts are given in "Milk Desserts," Publication 486, Dominion Department of Agriculture.

SOUPS AND CHOWDERS

CREAM VEGETABLE SOUPS

(Basic Recipe)

4 tablespoons butter	2 cups cooked vegetable, finely chopped or rubbed through sieve
4 tablespoons flour.	Onion if desired
2 cups milk	Salt and pepper to taste
2 cups water in which vegetable was cooked	

Melt butter and blend in flour. Add milk and vegetable water, using more than 2 cups of milk is necessary to make 4 cups liquid. Cook until mixture thickens, stirring constantly. Add strained vegetable pulp or chopped vegetables. Season to taste. A slice of onion cooked with the vegetable adds flavour to the soup. Carrots, celery, peas, string beans, spinach, onion, asparagus, cauliflower, tomatoes, or a combination of vegetables may be used.

CREAM OF TOMATO SOUP

2 cups canned tomatoes	4 tablespoons butter
2 slices onion	4 tablespoons flour
2 teaspoons sugar	4 cups milk
	Salt and pepper

Method 1.—Cook tomatoes, onion and sugar together for 15 minutes. Strain. Make cream sauce of butter, flour and milk. Add salt and pepper. Add strained tomatoes slowly to sauce. Serve at once. If soup has a tendency to curdle beat with Dover egg beater.

Method 2.—Melt butter. Blend in flour. Add cold tomatoes (strained if desired), onions, sugar and milk. Heat together until soup thickens, stirring constantly. Season with salt and pepper. Remove onion and serve at once.

QUICK CREAM SOUP

4 tablespoons butter	1 slice onion
4 tablespoons flour	1 teaspoon salt
1 quart milk	2 cups raw grated carrot or turnip

Melt butter. Blend in flour and gradually add milk. Cook, stirring constantly, until mixture thickens. Add onion, salt and grated vegetable, and cook over hot water until vegetable is tender—about 10 minutes. Remove onion. Sprinkle chopped parsley over soup just before serving.

POTATO SOUP

3 potatoes	2 tablespoons flour
2 cups boiling water	1½ teaspoons salt
2 to 3 cups milk	½ teaspoon celery salt
3 slices onion	½ teaspoon pepper
3 tablespoons butter	Few grains cayenne
	1 tablespoon chopped parsley

Cook potatoes in boiling salted water. When soft drain and rub through sieve. Keep water and add enough milk to make 4 cups. Scald with onion. Remove onion and add liquid slowly to potato pulp. Melt butter. Add flour and seasoning. Gradually add potato mixture. Cook a few minutes, stirring constantly. Sprinkle with parsley before serving.

CREAM OF MUSHROOM SOUP

½ lb. mushrooms	4 tablespoons butter
1 slice onion, ½ inch thick	4 tablespoons flour
2 cups water	2½ cups milk
Salt and pepper	

Wash mushrooms, peel and cut caps into pieces. Place skins and stalks cut in pieces with onion in saucepan. Cover with water. Simmer 20 minutes. Strain. Melt butter. Add mushroom caps. Cook gently until brown, blend in flour until smooth. Add milk and liquid strained from stalks (approximately 1½ cups) and seasonings. Stir and cook until smooth and thickened.

CORN CHOWDER

1 small onion, sliced	2 cups canned corn
3 tablespoons butter	4 cups milk and water drained from potatoes
or 3 slices bacon, chopped	Salt and pepper
2 tablespoons flour	Chopped parsley
3 cups cooked potatoes, cubed	

Cook onion with butter or bacon until onions are slightly browned. Blend in flour. Add potatoes, corn, milk and potato water. Season to taste. Cook 3 to 5 minutes. Sprinkle with chopped parsley before serving.

CREAM OF PEA SOUP

1 cup dried split peas	3 tablespoons butter
2 quarts cold water	2 tablespoons flour
1 slice onion	2 cups milk (or more)
2 inch cube salt pork or	Salt and pepper
2 slices bacon	

Pick over peas and soak several hours. Drain. Add cold water, onion and pork. Simmer until tender—3 to 4 hours. Rub through sieve. Melt butter. Blend in flour. Add milk. Stir until thickened. Add pea mixture and season to taste.

Notes.—The water in which ham has been cooked may be used to cook the peas.

Beans may be used in place of peas.

If using bacon, cut in pieces and cook onion with bacon until slightly browned.

VEGETABLE CHOWDER

4 slices bacon, chopped	2 tablespoons butter
1 medium onion, chopped	4 tablespoons flour
1 cup diced carrots	4 cups milk and vegetable water
1 cup diced potatoes	Salt and pepper
1 cup chopped celery, diced turnip or green peas	1 tablespoon chopped parsley (may be omitted)

Cook bacon and onion together. Cook vegetables in water to cover. Melt butter and blend in flour. Add milk and water in which vegetables were cooked (4 cups combined). Cook until mixture thickens, stirring constantly. Add bacon, onion and vegetables. Season. Heat thoroughly and sprinkle with parsley before serving.

OYSTER STEW

1 pint oysters	Salt and pepper
4 cups milk and oyster liquor	3 tablespoon butter
½ cup cracker crumbs	

Carefully pick over oysters. Heat milk and oyster liquor. Season with salt and pepper. When milk is scalded add butter and oysters. Cook until oysters are plump and edges begin to curl. Add cracker crumbs just before serving.

LUNCHEON AND SUPPER DISHES

SCALLOPED DISHES

(Basic Recipe)

4 tablespoons butter	2 cups milk
4 tablespoons flour	3 cups cooked food, cut in pieces
Salt and pepper	

Melt Butter. Blend in flour and seasonings. Add milk gradually and stir until mixture thickens. Cook for 3 minutes. Place alternate layers of cooked food and sauce in buttered baking dish. Cover with buttered bread crumbs and bake in a hot oven of 400° F. until crumbs are nicely browned.

Note.— $\frac{1}{2}$ to $\frac{3}{4}$ cup grated cheese and a pinch of mustard may be added to sauce just before removing from stove. The cheese sauce may be used in place of plain cream sauce in making such scalloped dishes as scalloped macaroni and scalloped vegetables.

SCALLOPED MEATS OR FISH

Use 3 cups cooked meat or fish—chicken, tenderloin, veal, ham, sweetbreads, chipped or dried beef, lobster, crabmeat, shrimps, oysters, or flaked cooked fish.

Use $1\frac{1}{2}$ cups meat or fish and $1\frac{1}{2}$ cups green peas

Use $2\frac{1}{2}$ cups meat or fish and $\frac{1}{2}$ cup green pepper or pimento.

Use 2 cups meat or fish and 1 cup cooked mushrooms.

Use 2 cups meat or fish and 1 cup cooked celery.

SCALLOPED EGG DISHES

Use 6 hard-cooked eggs, sliced or cut in pieces.

Use 4 hard-cooked eggs with 2 cups cooked potatoes, celery, corn or peas.

Use 4 hard-cooked eggs and 2 cups cooked spaghetti.

Use 3 hard-cooked eggs, 1 cup salmon and 1 cup peas.

SCALLOPED VEGETABLES

Use 3 cups cooked vegetables—cauliflower, cabbage, potatoes, corn, spinach, asparagus, carrots, peas, string beans.

Use a combination of vegetables such as:

$1\frac{1}{2}$ cups carrots and $1\frac{1}{2}$ cups peas

$1\frac{1}{2}$ cups corn and $1\frac{1}{2}$ cups potatoes

1 cup peas, 1 cup carrots, 1 cup potatoes

$1\frac{1}{2}$ cups corn, and $1\frac{1}{2}$ cups green beans

SCALLOPED MACARONI, SPAGHETTI, NOODLES, RICE

Use 2 cups cooked macaroni or spaghetti and 1 cup corn.

Use $1\frac{1}{2}$ cups cooked spaghetti, macaroni or noodles, and $1\frac{1}{2}$ cups meat or fish.

Use 3 cups cooked rice.

Use $1\frac{1}{2}$ cups cooked spaghetti or macaroni, $\frac{1}{2}$ cup mushrooms and 1 cup meat or fish.

CREAMED DISHES

Any of the foods suggested for scalloped dishes may be served creamed, using the same proportion of sauce and solid food. In making a creamed dish the chopped meat, eggs, or whatever is being used is carefully added to the cream sauce and thoroughly heated. Creamed mixtures may be served on toast points, in croustads, in split tea biscuits, in patty shells or in rings of mashed potato. Chopped parsley, grated cheese or paprika makes a simple, but effective garnish.

CORN SOUFFLÉ

2 tablespoons butter	2 cups canned corn
2 tablespoons flour	1½ teaspoons salt
1 cup milk	Few grains pepper
	3 eggs

Melt butter. Blend in flour and mix until smooth. Add milk gradually and cook until mixture thickens, stirring constantly. Add corn, salt, pepper and well beaten egg yolks. Fold in stiffly beaten egg whites. Turn into buttered baking dish and bake in moderate oven (350° F.) about 40 minutes. Serve immediately with slices of crisp bacon.

HAM SOUFFLÉ

3 tablespoons butter	½ cup bread crumbs
3 tablespoons flour	2 cups minced cooked ham
2 cups milk	3 eggs
½ teaspoon salt	Pepper and paprika

Make a sauce by melting butter, stirring in flour and adding milk slowly. Cook until mixture thickens. Add salt and crumbs. Cool sauce slightly and add ham and slightly beaten egg yolks to sauce. Carefully fold in stiffly beaten whites of eggs, turn into well buttered baking dish. Bake for about 45 minutes in a moderate oven (350° F.). Serve at once.

CHICKEN SOUFFLÉ

To make chicken soufflé follow above recipe, using 2 cups minced cooked chicken in place of ham. When making sauce 1 cup chicken stock and 1 cup milk may be used as liquid.

CHICKEN À LA KING

3 tablespoons butter	2 cups cooked chicken, diced
3 tablespoons flour	1 cup cooked mushrooms
½ cup chicken stock	2 tablespoons pimento, chopped
1½ cup rich milk	Salt and pepper
	2 egg yolks

Melt butter. Blend in flour. Add chicken stock and milk. Stir constantly until mixture thickens. Add chicken, mushrooms, chopped pimento and seasonings. Heat thoroughly. Pour some mixture over beaten egg yolks. Add to mixture and cook 2 minutes. Serve on hot toast or waffles.

EGGS À LA KING

3 tablespoons butter	1½ cups milk
2 tablespoons minced onion	2 tablespoons chopped pimento
½ cup mushrooms, sliced	6 hard-cooked eggs
1 tablespoon chopped green pepper	1 egg yolk
3 tablespoons flour	Salt and pepper

Cook onion in butter 5 minutes. Add mushrooms and green pepper and cook until mushrooms are delicately browned. Blend in flour. Add milk and cook, stirring constantly until mixture thickens. Cook 10 minutes. Add pimento and hard-cooked eggs cut in quarters. Pour some of sauce over beaten egg yolk and stir into sauce. Cook one minute. Serve on toast. One-half cup green peas may be added in place of green pepper and pimento.

CORN PUDDING

2 cups fresh or canned corn	Salt and pepper
1 teaspoon sugar	2 cups hot milk
1 cup soft bread crumbs	2 eggs
2 tablespoons chopped pimento or green pepper	2 tablespoons melted butter

Mix corn, sugar, bread crumbs, pimento and seasonings with hot milk. Add well beaten eggs and melted butter. Pour into individual or one large baking dish. Set in pan of hot water and bake in slow oven (325° F.) for about one hour or until mixture is set.

EGG AND MUSHROOM CROQUETTES

3 tablespoons butter	1 cup chopped hard-cooked eggs
4 tablespoons flour	1 cup-chopped sautéed mushrooms
1 teaspoon salt	Cracker crumbs
Pepper	1 egg
1 cup milk	

Melt butter. Add flour, salt and pepper and mix well. Add milk gradually and cook over a low fire, stirring until thick. Add eggs, mushrooms and parsley and mix well. Add more seasonings if necessary. Spread on a plate to cool. Shape into balls or cones, rolled in fine cracker crumbs, then in beaten egg diluted with one tablespoon water. Roll in crumbs again. Fry in deep hot fat (395° F.) until brown. Drain on unglazed paper. Serve hot. Garnish with parsley.

SHRIMP SAVOURY

4 tablespoons butter	2 tablespoons lemon juice
4 tablespoons flour	$\frac{1}{2}$ cup mayonnaise
2 cups milk	Salt and pepper
2 cups canned shrimps	
or	
1 cup shrimps and 1 cup green peas	

Make a cream sauce of butter, flour and milk. Add lemon juice, mayonnaise and seasonings. Add shrimps and peas. Heat thoroughly. Serve on toast points.

HAM AND CELERY CUSTARD

4 eggs	1 cup cooked ham, finely chopped
2 cups milk	1 teaspoon Worcestershire sauce
1 cup chopped celery	Salt and pepper

Beat eggs. Add hot milk, celery, ham and seasonings. Pour into buttered baking dish or individual moulds. Place in pan of hot water and bake in a moderate oven (350° F.) until custard is firm.

SCALLOPED POTATOES WITH HAM

Slice potatoes thinly and place in layers in buttered baking dish. Dredge each layer with flour. Dot with butter and season with salt and pepper. Add hot milk to nearly cover potatoes. Place thin pieces of ham or strips of bacon over top. Bake in moderate oven (350° F.) for about one hour or until potatoes are soft.

CREAM SAUCES

MEDIUM CREAM SAUCE

(Basic Recipe)

2 tablespoons butter
2 tablespoons flour

1 cup milk
Salt and pepper

Melt butter. Blend in flour. Add milk gradually and cook, stirring until mixture thickens. Season with salt and pepper. A little paprika added to the sauce gives it a richer colour.

VARIATIONS OF CREAM SAUCE

Cheese Sauce: Add $\frac{1}{2}$ cup grated cheese to cream sauce. Beat well. Serve with vegetables such as cauliflower and asparagus.

Egg Sauce: Add 1 hard-cooked egg, chopped, to 1 cup cream sauce. Serve with fish.

Parsley Sauce: Add 1 tablespoon finely chopped parsley to 1 cup cream sauce. Serve with fish.

Celery Sauce: Add $\frac{1}{2}$ cup chopped cooked celery to 1 cup cream sauce. Serve with oysters or fowl.

Curry Sauce: Add $\frac{1}{2}$ teaspoon curry powder to 1 cup cream sauce. Serve with eggs, lamb, rice, chipped beef, chicken.

Caper Sauce: Add $\frac{1}{4}$ cup capers to 1 cup cream sauce. Serve with fish.

Onion Sauce: Cook 1 cup sliced onion for 5 minutes. Drain and rub through a sieve. Add to 1 cup cream sauce. Serve with pork chops, mutton or hard-cooked eggs.

Vegetable Sauce: Use $\frac{1}{2}$ cup vegetable stock and $\frac{1}{2}$ cup milk as liquid in making cream sauce. Add $\frac{1}{4}$ cup cubed vegetables. Serve with cooked vegetables.

Mock Hollandaise Sauce: Make 1 cup cream sauce. Pour some of hot mixture over beaten egg yolk. Add to sauce. Cook 2 minutes. Remove from heat. Add 1 tablespoon lemon juice and 1 tablespoon butter. Serve with vegetables or fish.

Oyster Sauce: Use $\frac{3}{4}$ cup milk and $\frac{1}{4}$ cup oyster liquor in making sauce. Add $\frac{1}{2}$ cup chopped oysters. Serve with turkey, chicken or fish.

Shrimp Sauce: Add $\frac{1}{4}$ cup shrimps to 1 cup cream sauce. Serve with fish.

Mushroom Sauce: Add $\frac{1}{2}$ cup chopped mushroom caps cooked in butter to 1 cup cream sauce.

MILK DRINKS

COCOA

4 tablespoons cocoa
3 tablespoons sugar (or more)
4 cups milk
Pinch of salt
 $\frac{1}{2}$ cup boiling water

Mix cocoa, sugar and salt. Add boiling water and cook 5 minutes. Combine with hot milk and beat with egg beater until frothy. For a richer drink add 1 tablespoon butter.

HOT CHOCOLATE

Method 1.

Use 2 tablespoons Chocolate Syrup (*see page 22*) to each cup milk.

Method 2.

1 square (1 ounce) unsweetened chocolate
3 tablespoons sugar (or more)
Pinch of salt
 $\frac{1}{2}$ cup boiling water
4 cups milk

Melt chocolate. Add sugar, salt and boiling water. Cook 5 minutes. Add hot milk. Beat until foamy. If desired, top with whipped cream or marshmallows.

CAFÉ AU LAIT

$\frac{1}{2}$ cup scalded milk
 $\frac{1}{2}$ cup strong coffee

Combine milk and coffee. Sweeten to taste. Serve hot or cold.

GRAPE MILK

$\frac{1}{3}$ cup grape juice
2 teaspoons lemon juice
 $\frac{3}{4}$ cup milk
Sugar to taste

Combine ingredients and beat with an egg beater. Serve very cold.

PEPPERMINT MILK

Few drops peppermint
Sugar if desired
1 cup milk

Add peppermint to milk and sweeten to taste. For variety tint with green vegetable colouring. Soda water may be added just before serving.

SPICED MILK

$\frac{1}{8}$ teaspoon cinnamon
 $\frac{1}{8}$ teaspoon nutmeg
Pinch of salt
1 cup milk

Add cinnamon, nutmeg and salt to milk. Shake or beat thoroughly. Serve cold.

GINGER MILK

$\frac{1}{4}$ cup ginger ale
Sugar if desired
 $\frac{3}{4}$ cup milk

Add ginger ale to milk. Sweeten to taste. Serve at once well chilled.

MILK SHAKES

2 to 3 tablespoons syrup (chocolate, fruit, caramel or maple)
1 cup milk or $\frac{3}{4}$ cup milk and $1\frac{1}{4}$ cup soda water.

Combine syrup with milk. Beat or shake thoroughly. Serve well chilled. Soda water may be added just before serving.

SYRUP FOR MILK SHAKES

Chocolate Syrup

1 cup cocoa	1 cup sugar
or 4 squares unsweetened chocolate (melted)	2 cups water
Pinch of salt	1 teaspoon vanilla

Mix cocoa, salt and sugar together. Add water and boil 5 minutes. Cool and add vanilla. For a richer syrup 2 well beaten eggs may be added and the syrup cooked two minutes longer. Keep syrup in covered jar in refrigerator.

Fruit Syrup

Combine juice from canned cherries, pineapple, strawberries, raspberries or fresh orange or lemon juice with sufficient sugar or honey to make syrup of desired sweetness. Cook until mixture is a medium thick syrup. Cool. Keep in covered jar in refrigerator. If using fresh berries, crush with fork and boil 5 minutes in water to cover. Strain. Add sugar and cook to a medium syrup.

Caramel Syrup

1 cup water	1 cup sugar
Pinch of salt	

Melt sugar in heavy saucepan or frying pan. When it turns a light brown colour add water and salt. Simmer about 10 minutes or until syrup is slightly thickened.

BANANA MILK SHAKE

1 ripe banana	1 cup milk
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Mash banana and press through sieve. Add milk and beat, or shake thoroughly. Juice of $\frac{1}{2}$ orange may be added if desired. Sweeten to taste.

MOLASSES MILK SHAKE

1 cup milk	2 tablespoons molasses
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Add the molasses to milk and shake or stir thoroughly. Serve cold.

MILK JULEPS

1 cup milk, or $\frac{3}{4}$ cup milk and $\frac{1}{4}$ cup soda water
2 to 3 tablespoons syrup (chocolate, fruit, caramel or maple)
1 egg

Add syrup to milk. Break egg into milk and shake or beat thoroughly. If using soda water, add just before serving.

MILK FLOATS

1 cup milk or $\frac{3}{4}$ cup milk and $\frac{1}{4}$ cup soda water
2 to 3 tablespoons syrup (chocolate, fruit, caramel or maple)
1 small scoop ice cream.

Put ice cream in glass. Add milk and syrup. Beat or shake thoroughly. If using soda water add just before serving.

MILK DISHES FOR THE CONVALESCENT

In addition to milk desserts and the milk drinks, soups and other suitable dishes given in this bulletin, the following milk foods are suggested for the convalescent's tray.

MILK TOAST

Pour scalded milk seasoned with a few grains of salt over slices of buttered toast. Cut into pieces. Arrange in a cereal dish. Garnish with jelly. Serve immediately.

EGGS POACHED IN MILK

Bring milk to boiling point. Add few grains salt. Break egg into milk. Reduce heat and cook until white of eggs has coagulated. Place poached egg on thin buttered toast on hot plate. Make a sauce by adding flour and butter to milk in proportion of 2 tablespoons flour and 2 tablespoons butter to 1 cup milk. Serve with the poached egg. Garnish with parsley or paprika. When a sauce is not desired, add 1 teaspoon butter to $\frac{1}{2}$ cup of the milk in which the egg has been poached, and pour over toast. Then place poached egg on toast and serve immediately.

ALBUMENIZED MILK DRINKS

To 1 cup milk or to such drinks as milk shakes add 1 egg white slightly beaten. Strain. Serve well chilled.

MEAT EXTRACT WITH MILK

Heat 1 cup milk. Add extract, using the amount recommended by the manufacturer. Stir until dissolved. Serve hot. If preferred, the extract may be dissolved in a little hot water, then added to the hot milk.

MILK SHERBET

$1\frac{1}{2}$ cups sugar

Juice of 3 lemons

Pinch of salt

1 quart milk

Mix sugar, lemon juice and salt together. Place in freezer. Slowly add milk. Pack freezer with ice and salt, using the proportion of 3 parts ice to 1 part salt. Turn crank until mixture is frozen.

EGG NOG

1 egg

1 cup milk

Pinch of salt

Sugar

Flavouring

Beat egg slightly. Add milk and salt, sugar and flavouring to taste. Strain and chill. The egg may be separated and the white beaten until stiff. Part of this may be folded into the egg and milk mixture and the remainder piled lightly on top. For flavouring, nutmeg, vanilla, fruit juice or any of the syrups suggested on page 22 may be used.

OATMEAL GRUEL

1 cup milk

$\frac{1}{4}$ teaspoon salt

$\frac{1}{4}$ cup fine oatmeal

Add milk to oatmeal. Let stand for 1 hour. Press through sieve. Cook in double boiler for 45 minutes. Season, strain and serve.