

Inspectors in charge of meat inspection are required to see that no coloring matter or dye is used in the water in which sausages or other meat food products are cooked. The momentary dipping of sausage in casings in solutions of permitted colors is allowed, provided the color does not penetrate the casings.

Inspectors in charge are directed to obtain and forward to the Washington office information concerning the use of colors for sausage casings other than cloth in establishments under their supervision. The manner in which the coloring material is applied, the names of the colors used, the brands of the sausages to which the coloring is applied, the amount of sausage sold in colored casings, and any other information which can be secured should be reported.

### CARE OF MILK IN HOME.

#### A Warning to Householders and Dealers.

OFFICE OF THE ILLINOIS STATE FOOD COMMISSION,  
1620 MANHATTAN BUILDING, CHICAGO, ILLINOIS.  
BULLETIN No. 21.

If the producer and dealer have done their duty, there is left daily at the consumer's door a bottle of clean, cold, unadulterated milk. It will become unfit for food (especially for babies) if not properly cared for in the home. Care for your milk properly by observing the following rules:

1. Have the dealer leave the bottles in a cool place, protected from sun and flies.
2. Take bottles in at earliest possible moment after delivery.
3. Wash cap and outside of bottle thoroughly with clean, cold water.
4. Then place at once on ice.
5. Keep the ice box clean.
6. The ice box must contain no substance such as onions, fish or other substance which impart their flavor to milk.
7. Do not remove milk from ice box till you are ready to use it.
8. See that all receptacles for milk are clean.
9. Remove the cap from the bottle with a *clean* special lifter and replace the cap and put back on ice immediately.
10. When the milk has been used, immediately wash the bottle *as required to do by law* and keep bottle empty and sanitary till delivered to dealer.

#### BACTERIA THE CAUSE OF DISEASE.

Most kinds of bacteria are harmless to human beings but some are just as fatal as the attacks of wild animals. If you are bitten by a mad dog you get hydrophobia and just as surely you get typhoid fever if attacked by typhoid bacteria. Every other kind of disease bacteria produces another different disease.

The greatest dangers to health from the use of milk, arise from the presence in or the introduction into milk of harmful bacteria, and from their increase in number. The greater their number, the greater is the danger to human life.

Methods for avoiding these two dangers by care of milk in the home are indicated in the above rules, and how the observance of each rule helps in avoiding these dangers will be briefly indicated. As bacteria multiply in number and knowledge of the conditions under which they do not multiply is essential to the intelligent observance of all the above rules, these conditions will be indicated first.

#### THE FOOD OF BACTERIA.

Bacteria grow on animal and vegetable matter. All particles of food on floors, walls, tables, utensils, ice boxes or other places, afford breeding places for bacteria, and bacteria are so small that the particles of food on which they grow may be of such minute size as

to escape detection by the eye. The dust and dirt in the home and on the street contain large quantities of this animal and vegetable refuse on which bacteria feed. Thorough washing and cleansing of all parts of the home and of all utensils used for food, is absolutely essential to the preservation of health.

#### HOW BACTERIA GET IN FOOD.

Harmful bacteria may be in the food when it arrives in the home, if it is a portion of a diseased animal, has been handled by people having disease, has been in contact with flies or dust, or has been produced, stored or shipped under insanitary conditions. Even the air (especially inside of buildings and in insanitary surroundings) contains bacteria which may get in the food if it is exposed.

#### MILK A CHOICE FOOD FOR BACTERIA.

Milk is one of the substances in which bacteria dangerous to human life multiply most rapidly. In protecting it from contamination you will, to a very large extent, and at the same time, protect the other foods in your home from the dangerous bacteria. You cannot protect one without protecting the others. A home safe and sanitary for milk will be safe and sanitary for other foods.

A number of epidemics of diphtheria and scarlet fever have been traced to milk supply. In such diseases the milk was infected by some one handling the milk who had the disease or who had come in contact with the diseased person. Obviously, one suffering from a contagious disease or one who is caring for a diseased person should not be allowed to go near or to handle the milk or its utensils for other members of the household. Typhoid fever while not classed as a contagious disease, is communicable from one person to another. The ordinary channel of communication is generally considered to be drinking water contaminated by sewage but occasionally it is disseminated through food. Milk may become infected with this disease in various ways, for instance contaminated water used for cleansing milk utensils or bottles.

Summer intestinal diseases of children may be caused by disease bacteria carried into the system by the milk supply. All other germ diseases may be spread by means of infected milk.

It must be remembered that milk is an excellent medium for the growth of *disease* bacteria as well as for growth of harmless bacteria.

#### HOW FAST BACTERIA MULTIPLY.

The relation of bacteria to temperature is most interesting and important. A certain amount of heat is essential to their growth and a certain amount is fatal to them. Each particular variety of bacteria has an upper and a lower temperature limit beyond which it does not grow, and a certain temperature, called the optimum, at which it grows best. Most forms grow best between 80 and 98 degrees F. If milk is cooled and held at 50 degrees F. or, better still, 40 degrees, rapid growth is checked at once and the multiplication is very slow. One writer has represented the relative increase of bacteria in milk held at different temperatures as follows:

Milk held at	Relative number of bacteria at the end of				
	0 hour	6 hrs.	12 hrs.	24 hrs.	48 hrs.
68 degrees .....	1	1.7	24.2	6,128.0	357,499.0
50 degrees .....	1	1.2	1.5	4.1	6.2

In the foregoing table one (1) is assumed to represent the number of bacteria in the fresh milk and the relative number which will be found at the end of 6, 12, 24 and 48 hours at two temperatures as shown in the succeeding columns. These figures are based on



a number of actual counts and illustrate the effect of a difference of 18 degrees on the multiplication of bacteria. If the milk had contained at the beginning 1,000 bacteria, the part held at the lower temperature would have contained at the end of twenty-four hours only 4,000 bacteria, while the other would have at the same stage contained 6,128,000. When the temperature of the milk is nearer 80 degrees to 98 degrees F. at which temperature they multiply most rapidly, the rate of increase increases many fold.

#### KILLING BACTERIA.

The bacteria in milk may be killed by boiling the milk. This is called sterilizing the milk. Boiling is not a practical way of killing the bacteria because it spoils the flavor of the milk. The bacteria may be killed by heating the milk for several minutes *below* the boiling temperature, and the flavor produced by boiling is avoided. This process is called pasteurization. If you have reason to suspect the cleanliness or healthfulness of your milk supply and a better supply cannot be obtained, pasteurize your milk.

#### HOW TO PASTEURIZE MILK AT HOME.

Milk may be efficiently pasteurized in the household by setting the bottle of milk in a vessel containing water and heating the water until the milk reaches a temperature of 150 degrees. It may then be removed from stove and allowed to stand twenty or twenty-five minutes in the water, the temperature of the water being above that of the milk and while it slowly cools the milk will be thoroughly heated. At the end of this time place the milk in a sterilized bottle, chill at once and keep it cold until used.

Exposing bacteria ten minutes at 150 to 160 degrees is fatal to nearly all bacteria which do not form spores.

#### BABY'S MILK.

If it is necessary to feed the baby with cow's milk, or a prepared food containing cow's milk, the milk (unless you know its history) should be pasteurized by the above method in the home (whether it has been previously pasteurized by the dealer or not.)

Enough milk food should be prepared at one time to last the baby till the next milk supply arrives. *Have as many nursing bottles as the baby is to have meals in that period.* Each bottle should be thoroughly washed immediately after being used. While the milk is being pasteurized, sterilize all the bottles by filling them with boiling water. Then as soon as the food is prepared and still hot, empty the bottles and pour into each bottle just the amount and no more of milk food that the baby should have for one meal. Fill the bottles by means of a small funnel used for no other purpose and sterilized just before using. Avoid getting the inside neck of the bottle wet. (If wet, wipe dry with absorbent cotton.) Fill the dry neck of the bottle with absorbent cotton. This dry cotton will keep out bacteria better than stoppers of any kind. Never use the same piece of cotton twice. Keep the cotton clean in a covered container. The bottles should then be quickly cooled in water and placed on ice. When ready to feed, warm the milk by placing the bottle in warm water, remove the cotton plug and place the sterilized nipple. Filling the nursing bottle with milk and using it for more than one meal is a dangerous practice.

#### FLAVOR THE MILK.

Many of the bacteria in milk do not produce disease but cause the milk to sour and spoil it in other ways. The flavor of the milk is materially changed by growth of bacteria.

1. Have the dealer leave the bottle in a cool place protected from flies.

The importance of having the milk left in a cool place can be seen at once when the speed with which bacteria grow is considered. Even the cleanest milk supplied to the consumer contains in fifteen drops, thousands of bacteria. To keep the milk safe, sweet and wholesome, depends on keeping it so cold that they will not multiply. The direct heat of the sun and the heat reflected from the building raise the temperature of milk exposed under such conditions and the nearer this temperature approaches that of summer, the faster the bacteria multiply and the attendant dangers increase. Milk exposed under such dangerous conditions is also subject to infection by flies. The house fly, now known as the typhoid fly, born in filth and feeding on filth, also feeds on the clean food intended for the baby and the rest of the family. A thin film of milk and water is often found on top of the bottle cap. Not only do dogs and cats get at this when the bottle is exposed, but the typhoid fly here deposits germs from its filth laden feet. The germs multiply rapidly and there is danger, even when the cap is perfectly fitted, of the germs working down into the milk in the bottle.

Bottled milk is safest. If situated so that it is impossible to get bottled milk, do not set out over night an uncovered vessel to collect thousands of bacteria from street dust before milk is put into it. Use a glass preserving jar in which nothing but milk is put; use the jars with glass tops but omit the rubber band.

Dipping milk from large cans and pouring it into customers' receptacles on the street—with all the incident exposure to air not always the cleanest—is bad practice, and milk from the grocery store or the bakery which is kept in a can, open much of the time, possibly without refrigeration, is to be avoided.

2. *Take the bottles in at the earliest possible moment after delivery.*

In large cities, where most of the milk comes by morning trains from a considerable distance, it is often impossible to deliver fresh morning's milk in time for breakfast, and that milked the day before must be given to patrons who insist on an early delivery.

Milk twelve, eighteen or twenty-four hours old needs every protection if it is to remain sweet and wholesome till consumed. It should be cold when delivered. Every minute it remains exposed to the warm air reduces its value. Each newly formed bacterium produces others in a marvelously short time, therefore, it is necessary to get the bottles on ice at the earliest possible moment and get the milk so cold the bacteria cannot grow.

3. Wash cap and outside of bottle thoroughly with clean, cold water.

Unfortunately, in the endeavor of the dealer to keep milk cold, the bottle comes in contact with unclean ice and water. While in the delivery wagon, any milk or water on the cap of the bottle is subject to attacks from flies. The filth may be removed and the danger from flies mitigated by washing the bottle as directed.

4. Place at once on ice.

Get the milk as cold as possible as soon as possible. The coolest part of the ice box is none too cold. Do not remove the cap. It is safer to keep it covered to exclude not only dirt and bacteria, but also the flavors and odors which milk so easily absorbs. If kept at a temperature of 50 degrees F. or less, good milk should remain sweet for twelve hours, at least, after it reaches the consumer, and ordinarily for twenty-four hours or more. Sometimes in very hot weather housekeepers complain that in spite of all precautions it sours quickly, even in the ice box. This is often due to the



fact that the air of the ice box, although it seems cold in contrast to the heat outside, is really not cold enough to check the growth of the bacteria; if a thermometer placed inside registers more than 50 degrees F. the fault is almost surely in the temperature of the ice box. Any delay in getting the milk down to this temperature means an increase in the number of bacteria.

Keep milk in the original bottle till needed for immediate consumption; do not pour it into a bowl or pitcher for storage; do not pour back into the bottle milk which has been exposed to the air. An excellent way of serving milk on the table, from the sanitary standpoint, is in the original bottle; at all events pour out only what will be consumed at one meal.

5. Keep the ice box clean.

Keep the refrigerator clean and sweet. Personally inspect it at least once a week. See that the outlet for melted ice is kept open and that the space under the ice rack is clean. The place where food is kept should be scalded every week with sal-soda solution; a single drop of spilled milk or a small particle of other neglected food will contaminate a refrigerator in a few days. You cannot keep milk in a sanitary condition in an insanitary ice box.

6. The ice box must contain no other substances, such as onions, which imparts their flavor to milk.

Milk deteriorates by exposure to the air of the ice box, pantry, kitchen or nursery. Any odorous substance will impart its flavor to milk under such conditions. Do not expose uncovered milk in a refrigerator containing food of any kind, not to mention strong smelling foods like fish, cabbage or onions. The danger of milk absorbing bad flavors is minimized by keeping the bottle covered with a paper cap as long as milk is in it and when not actually pouring from it; after opening a bottle and removing a part of the milk do not leave the bottle uncovered.

7. Do not remove milk from ice box till you are all ready to use it.

Taking the bottle away from the source of cold before it is needed or allowing it to stand in the kitchen after you have removed all that was needed, will result in the milk getting warm and becoming unsafe. Keep milk cold, so cold bacteria cannot grow. Keep it cold, not some of the time, but all the time.

8. See that all receptacles for milk are clean.

Dirt in the home means bacteria in the home. To pour clean milk in unclean receptacles is the same as wilfully putting bacteria in the milk. All dishes used for holding milk should be absolutely clean and previously sterilized.

9. Remove the cap from the bottle with a clean, special lifter.

Dirty thumb and finger or knives that have been used for other purposes are often used to remove the cap. This practice invariably contaminates the milk during the process. Any smooth, sharp pointed steel instrument which can be washed clean answers the purpose but should be kept for this special use. When the cap has been removed the handle can be placed on the table in such a way that the cap hangs beyond the table. In this way the cap gathers no germs from the table and you can, without danger, replace the cap and put the milk back on the ice immediately after the desired amount of milk has been removed.

10. When all the milk has been used, immediately wash the bottle as required to do by law, and keep the bottle empty and sanitary until delivered to dealer.

As soon as a milk bottle is empty, rinse it in lukewarm water until it appears clear and set it bottom side

up to drain. Do not use it for any other purpose than holding milk. Never return filthy bottles. Bottles and cans are in many instances so filthy as to render their proper cleansing, even by means of chemicals, extremely difficult.

Moreover, in collecting the bottles the dealer gets the filth from unwashed bottles on his hands. Disease germs planted in this filth by flies or dust, or from the homes containing diseases, are transplanted by his hands to the milk bottles he delivers at the next house and so disease is spread and the whole neighborhood infected. Clean bottles will not foster the growth and spread of disease in this manner. You are compelled by law to cleanse the bottles before returning them.

Section 17 of the Illinois food law reads as follows:

"Section 17. Persons receiving milk to wash cans. Any person, firm or corporation who receives from any other person, firm or corporation any milk or cream in cans, bottles or vessels which have been transported over any railroad or boat line, where such cans, bottles or vessels are to be returned, shall cause the said cans, bottles or vessels to be emptied before the said milk or cream contained therein shall become sour, and shall cause said cans, bottles or vessels to be immediately washed and thoroughly cleansed and aired."

This section of the law applies equally to the householder and the dealer, and this notice is given so that those ignorantly violating the law may comply with its provisions and avoid prosecution.

The use of milk bottles as containers for other substances is dangerous to the milk supply.

A. H. JONES,  
Commissioner.

#### NEW FOOD LAWS IN OHIO.

The recent General Assembly of Ohio passed a number of laws effecting food matters, among them acts relative to the branding of full cream cheese; providing that certain fines, fees and costs shall be paid to the State Dairy Commissioner; relative to the labeling of skimmed cheese, and penalizing the adulteration of turpentine.

The statute providing for a general standard of weights and measures passed at the same session we reproduce.

An Act to amend sections 7965, 2615, 2616 and 2622 of the General Code, to provide and require the general use of standard weights and measures in Ohio.

Be it enacted by the General Assembly of the State of Ohio:

Section 1. That sections 7965, 2615, 2616 and 2622 of the General Code be amended so as to read as follows:

Sec. 7965. The state dairy and food commissioner shall be state sealer. The standards of weights and measures adopted by the state shall be deposited in a suitable room at Columbus, and be by him kept in suitable cases, to be opened only for the purpose of comparing with such standards the copies which by law are furnished for the use of the several counties, cities or villages, unless by joint resolution of the general assembly, or upon a call of either house for information, or by order of the governor for scientific purposes. The state dairy and food commissioner shall, upon the passage of this act, and once every three years thereafter, require each county auditor and city or village sealer, in this state, to present all standards of weights and measures in their possession to him for comparison with the standards adopted by the state, and the dairy and food commissioner shall condemn and destroy all of such standards as do not conform with the standards adopted by the state. Each county auditor and each city and village sealer shall be required to procure copies of all the original standards adopted by the state named in section seven thousand, nine hundred and sixty-six of the General Code, except such standards now in their possession as the state dairy and food commissioner shall find to conform with the standards adopted by the state. It