with some swelling and tenderness of the skin. The next day the area of redness had raised edges, was hard, and advancing over the ear, face and forehead. It spread rapidly over the eyes and forehead to the opposite side of the face with formation of bullæ, giving a typical picture of erysipelas. The throat symptoms gradually abated, and the temperature fell by lysis to normal on the eleventh day, after what I considered the beginning of the erysipelas. Recovery was complete. Examination five months later was negative.

Treatment.—No special treatment was employed. Eliminative and palliative measures with local applications of cold were used. Tracheotomy and intubation sets were kept in readiness.

This condition has seldom been diagnosed before its appearance was manifest on the skin. In this case the diagnosis was not made until the sixth day. The fact that erysipelas infection often makes its entrance through abrasions of the nasal mucosa and its accessory sinuses would make us expect it more frequently in the pharynx and larynx. No doubt this condition is often unrecognized when present.

AN INEXPENSIVE HOME-MADE MILK REFRIGERATOR.*

ALFRED F. HESS, M.D.
NEW YORK CITY.

Individuals and communities are at present much interested in the question of pure milk for the infants of the poor. A more rigid supervision is gradually being enforced over all those who handle milk—the farmer, the dairyman, the wholesaler, and the retailer. Although these efforts can not be too highly commended, too little stress has been laid on the importance of the care of the milk in the home of the consumer. No matter how carefully the milk has been obtained and guarded up to the time it is retailed, even if it is pasteurized or certified, it will be rendered unfit for food after standing in a room at summer heat for a few hours. That this is a real danger is known to all who have tended babies in the tenement houses in summer. Most of the people in poor circumstances have no ice or an insufficient supply, so that the milk is kept at a temperature of from 50 to 70 F.

For some months I have been endeavoring to devise a simple and inexpensive means for keeping milk in summer—one that will be within the reach of the mother in the tenement house. After considerable experimenting, I can recommend the following box for this purpose:

An ordinary packing case was obtained; it had been made for bottled water, and measured on the inside 13 by 18 inches and was 11½ inches in depth. Sufficient sawdust was placed in this box to make a substantial layer on the bottom. On this was set a tin can, tall enough to hold a quart bottle of milk and 8 inches in diameter, and around this was placed a cylinder of tin a little larger in diameter than the can. The cylinder was then surrounded by sawdust. The lid of the can was, of course, left free. The ice box was completed by nailing about 50 layers of newspaper to the lid of the case (Figs. 1 and 2). The total cost of such an apparatus is the cost of the tin can, which may be 25 or 50 cents, according to the quality. The box and sawdust can be obtained free from a grocer.

To test the value of the box, a quart of milk was placed in the can and surrounded by 6 or 7 pounds of ice; that is to say, less than 5 cents worth. The room temperature was 81 F. The efficacy of the refrigerator was demonstrated by the fact that twenty-four hours later the temperature of the water in the can was 33 F., the milk in the bottle 37 F., and that even after forty-five hours the temperature of the water had risen only to 50 F. and the milk to 52 F.

Numerous variations from this type of box were found to keep out the heat. A somewhat larger box was found more desirable. Excelsior may be substituted for sawdust. All that is necessary is that the can containing the ice be surrounded on all sides by a material which conducts heat poorly. Care should be taken that the can rests on sawdust and not directly on the wooden floor of the case. Should the case be rather shallow for

Fig. 1.—Vertical section of home-made milk refrigerator; S, sawdust, excelsior or other cheap non-conductor of heat; T, cylinder of tin or galvanized iron; C, can in which is placed the milk jar M, surrounded by broken ice, I; N, newspapers nailed to lid of case.

Fig. 2.—Horizontal section of home-made milk refrigerator; M, milk container; I, broken ice; C, can for holding ice; T, tin or galvanized iron cylinder to prevent sawdust, S, from falling into space when can is removed for purpose of emptying water.

the can, newspapers should be laid between the two. To prevent rusting a little soda may be placed in the can every day.

The apparatus described above will keep two quart bottles of milk, or four eight-ounce feeding bottles. The great majority of mothers in the tenements keep the day's supply of milk in a quart bottle and possess but two or three nursing bottles. As the ideal method is to have as many bottles as there are feedings in the course of the day, it was determined to make such minor modifications in the ice box as would allow of this procedure. To this end a tin can was obtained which was 8¾ inches in diameter and cost 30 cents. It was sufficiently large to admit a wire bottle holder

* From the Research Laboratory, Board of Health, New York.

costing 45 cents and containing eight bottles. A case 18 inches square was employed to hold it. The ice was cracked into smaller pieces than before, 6 or 7 pounds being used, and the wire holder with its bottles (previously cooled in running water) was then set on the surface of the ice, or rather gently pressed down into the ice. Within one hour the temperature of the milk fell from 67 to 55 F. and continued to fall. After twenty-four hours it was at 39 F. and the water at 38 F.

The bacterial content of the milk was 7,000 bacteria to the c.c. when it was obtained. After twenty-four hours the milk in the refrigerator had risen to 42,000 to the c.c. A sample of the same milk left at a temperature of 73 F. showed 12,360,000 bacteria to the c.c.

Will mothers take the trouble to improvise ice boxes of this description? From an experience with mothers who consult the dispensaries I can say that they are anxious to do all in their power to protect their babies. Many would be quick to profit from the lesson if they saw a model of the ice box, were told how cheaply it can be constructed, how it will economize ice, and, finally, how its employment will aid in saving the baby from an attack of the much-dreaded summer complaint. The cost of such ice boxes can be considerably reduced if they are made in large quantities, so that with private and municipal cooperation they could be supplied for much less than the above figures.

Refrigerators of this design, one and one-half feet square by fourteen inches deep, have been distributed among the children's dispensaries, dairy kitchens, nurses' settlements and kindred organizations in New York City, where they are being demonstrated to mothers. It is hoped that this article may encourage other communities to similar action in aid of the poor babies.

Therapeutics

SALICYLIC ACID.

Salicylic acid may be classed as an antiseptic, as a bowel antiseptic and as a "specific" in acute inflammatory rheumatism or acute arthritis. As a local antiseptic it is valuable, but too expensive for extensive use. Its greatest value as a local antiseptic is in powders and ointments. Salicylic acid in some form represents, perhaps, the best bowel antiseptic that can be administered. For this purpose some combination of it or some salt of it which does not break up and become absorbed as quickly as does salicylic acid or sodium salicylate is better. The antiseptic action then extends farther down the small intestine.

While, on the one hand, it is absurd even to consider the possibility of rendering the intestinal canal aseptic, it is just as absurd to believe that some form of salicylic acid can not render the upper part of the intestine less likely to become the abode of bacteria, because such would not be the fact. In other words, it is certainly possible and is clinically easily demonstrated that fermentation and putrefaction in the intestine may be diminished by the administration of a salt of salicylic acid, as represented by salol or phenylis salicylas. It is well recognized that the normal hydrochloric acid of the stomach tends to inhibit fermentation, not only in the stomach, but in the upper part of the intestine. It is also recognized that, while normally bile is not a germicide, it does inhibit putrefaction in the intestine. Salicylic acid has the same power, and perhaps much more

in acting as a bowel antiseptic. It may be able not only to prevent typhoid and other germs, especially the colon bacillus, from migrating to the upper part of the intestine, but after absorption it may be able to prevent these germs from coming to the upper part of the intestine, gall bladder, etc., by the lymph and blood streams. At any rate, it is a common and every-day demonstration that diarrheal disturbances, not chronic, but due to an acute infection or to poisonous articles of food, are stopped and prevented by salicylic acid in the form of phenylis salicylas.

Another advantage of phenylis salicylas is that it does not disturb the stomach, not being broken up there into its component parts of phenol and salicylic acid, i. e., not under ordinary conditions, it being only so decomposed in alkaline media.

Salicylic acid seems to have some stimulant action on the liver, and it is thought that more and better bile is excreted under its action.

It is somewhat irritant to the mucous membranes, and for this reason may cause nausea or vomiting and a reflex urticaria.

The signs of its full action are known as "salicylism" and are not unlike "cinchonism," i. e., there is a fullness of the head, perhaps headache, ringing of the ears and sometimes dizziness. With ordinary doses of a pure, natural product, i. e., preparations made from plants and not synthetically, the heart and circulation are not disturbed, although the surface blood vessels are dilated, and thus there is caused an increased perspiration. If salicylic acid is too long administered, by its power to increase nitrogen waste, impaired nutrition occurs, and debility is caused. The patient also may become anemic, with a tendency to hemorrhages and bleeding from the mucous membranes. Therefore, salicylic acid in any form should not be administered in any dosage but minute for longer than two weeks at a time as the outside limit. Many a patient has had a protracted invalidism following a rheumatic fever because salicylates were administered too long.

The specific action of salicylates in acute inflammatory rheumatism may be due to its bowel antiseptic action, to its antiseptic action on the blood (and rheumatic fever is doubtless a germ disease, and perhaps caused by several germs), or to the increased elimination of waste products which it causes, or it may act for good in all these ways.

INTERNAL ADMINISTRATION.

The ordinary dose of salicylic acid and of sodium salicylate are the same, as the former is less soluble than the latter, although the latter is naturally the weaker preparation. The adult dose in rheumatic fever is a gram (15 grains) of either of these preparations, administered four times in twenty-four hours, or for a few doses, perhaps, at four-hour intervals. Symptoms of "salicylism" occurring should cause the frequency or the size of the dose to be decreased. If an acute arthritis is not improved in four or five days, and certainly in a week, the salicylic acid should ordinarily be stopped. If there is improvement it may be continued in smaller doses, two or three times in twenty-four hours, for a longer period.

As the drug is very sweet, it is absurd in administering it to add any sweet preparation to disguise it, and generally the simplest method of administering a drug is the best. If the dose to be administered is very small, from 0.01 to 0.25 gram (from 2 to 4 grains)