A baby, six months old, was taking cow's milk diluted one-half. It was the custom of the mother to pasteurise a fresh supply in the evening for the baby's use during the night. The baby did not nurse more than twice. The milk was heated in separate bottles, submerged in hot water and then cooled, and the bottles were wrapped in a light woollen blanket and kept at the foot of the bed—a most convenient, if not entirely scientific, method of preserving milk. This did very well during the cold months, but as the weather became warmer the practice had to be discontinued and the milk kept on ice and heated as required. Almost the first warm night, the baby, after drinking his milk as usual, was taken sick and vomited thick, hard masses of sour curd. Exactly the same milk was used, and on investigation I could find no reason, either in the cow or its food, and so was satisfied to ascribe the trouble to a fermentation which had occurred on account of the heat in the room. The dilution of milk with lime water or attenuants, which has for years been generally practised with good results, undoubtedly acts by neutralising the acid of fermentation, so that an excess of acids is prevented.

I have alluded to the contamination of the milk in the barn, and have demonstrated that milk may be made practically sterile. There yet remains the transporting of the milk to the consumer and, a phase of the subject not often alluded to, the preservation of the milk in its purity in the home where it is to be used. Many dairymen now employ glass bottles, with a metallic or ligneous cap, and if the bottles are properly washed before the milk is put into them the plan is an excellent one and should be made compulsory. Milk properly strained, cooled, and bottled, kept at a low temperature in the house, and exposed no more than absolutely necessary, will keep sweet twenty-four hours.

Instead of this, consider for a moment our present methods. The milk is put into large cans, carted about the city here, there, and everywhere, in the dust and dirt of the business quarters, and the hot, close, unhealthy atmosphere of the tenement districts, uncovered and exposed at each stopping-place. The milk is poured into a can or pitcher, possibly not over clean, and then perhaps left on the doorstep until the cook has time to get it, or kept in the pantry or on the window-sill in the sun.

Given a milk declared by competent authority to be germ free as it leaves the barn, how long, think you, will it remain so? If we could have at hand a pure milk, cooled, bottled, and kept cool, I believe our results in infant feeding would be better than they now are. The fact that there is a chemical and physical difference between human and cow's milk is not the only difficulty. A child may to a certain extent adapt itself to a slight chemical difference, and we have repeatedly seen a child do well on its mother's milk when that milk analysed would fall far below the average of human milk. Adriance* gives analyses of several specimens of milk which, compared with the normal standard, would be considered abnormal, and yet babies fed with it were gaining in weight and appeared healthy.

The personal idiosyncrasy of the child is an important factor, and when a child thrives on the milk of unusual percentages of fats and proteids it does so because the milk is good for that particular infant. I would not discourage the chemical examination of milk in arranging a diet for a child, but I would emphasise the importance of having a good milk. Of what use is the fact that we have the proper percentage of the several constituents of breast milk, if that milk is also loaded with germs of fermentation? We cannot always be sure of our exact chemical relations; we can be and should be absolutely certain that the milk is good and pure.

The particular aerated milk employed in the experiment was delivered in bottles early in the morning, and its production was a matter of thought and care in every detail. Even with milk produced and preserved under the most favourable conditions, dilution could not be entirely avoided; the natural size of the particles would prevent that; but the milk could be given stronger, and so much of the trouble from too little fat would be overcome. Budin, by means of sterilisation with Soxhlet's apparatus, is enabled to give whole milk to even very young children, by giving only such quantity as the stomach will easily tolerate. This, although sterilised milk is now no longer used as a continued diet, emphasises the fact that many of the difficulties in infant feeding are due to conditions favouring an acid fermentation of the milk employed.

(*To be continued.*)

* Archives of Pædiatrics.

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