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PROPHYLAXIS AND TREATMENT OF INFANTILE SUMMER DIARRHŒA.*

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The variety of diarrhœa to which I propose to call your attention occurs during the summer months, and almost exclusively among children under two years of age who are artificially fed.

Eustace Smith says: "In bottle fed infants this disease is especially common, and is answerable for a large part of the mortality which occurs in cities during the first twelve months of life. Severe inflammatory diarrhœa appears to be almost confined to large towns, and the mortality from this cause is greatest during the months of July, August and September.

It is now generally admitted that the exciting cause of this disease is the presence of micro-organisms, or ptomaines in the alimentary canal, or the irritating, or poisonous substances which are formed in the processes of fermentation, or putrefaction, which are induced by these. The reason assigned for the prevalence of this disease only during the summer months is that a temperature of 60° F., or higher, is requisite for the active multiplication of germs.

The age at which this disease occurs being the period of first dentition explains why teething has in the past been considered one of its causes, but it is evidently only a coincidence, and not in the relation of cause and effect, as teething is a purely physiological process, many children passing through the whole period of dentition without having diarrhœa. If teething could produce it, it would be as common during the winter as during

the summer, whereas, it never occurs during the winter.

It is a well-known fact that children artificially fed are more subject to this disease than those nursed at the breast. Meinert, of Dresden, found in 500 cases only 20 cases among breast-fed children. Hope, of Liverpool, in a record of 1,000 deaths from infantile summer diarrhœa, gave the number of breast-fed children as only 30, or three per cent.

For artificial feeding, cow's milk is mostly used, and it has generally been thought that the difference in chemical composition between it and mother's milk was the reason why it did not agree as well with children as the latter.

However, Escherich found that when cow's milk was fed to an infant ten weeks old in quantities of one quart per day, an examination of the fœces disclosed an almost perfect digestion of the casein. This experiment has been repeated by others who testify to its correctness.

Cow's milk rarely disagrees with children during the winter, although the chemical composition remains the same throughout the year. Not so however with the bacteria which are present in large quantities during the summer, but almost entirely absent during the winter, as evidenced by the fact that milk can be kept for a long time during the winter without undergoing any change.

Ordinary market milk, which is that used in infant feeding in cities and towns, is well known to be loaded with bacteria during the summer months. In fact, from the time that it leaves the udder it is contaminated with impurities at every step until it reaches the consumer. In the case of breast milk the child receives it directly from the breast, and when the mother is healthy, the milk is free from germs. Escherich proved this by drawing milk directly from the milk ducts into sterilized capillary tubes under proper antiseptic precautions, and sealing these tubes hermetically; he found that this milk could be kept for a number of days exposed to the temperature of the body without undergoing any change. Ordinary market milk, when placed in similar tubes and subjected to the same temperature, decomposed within a few hours. Professor Vaughan, of Ann Arbor, tried a similar experiment upon cow's milk. He found that it also was sterile as it came from the milk ducts. I think it is quite evident that if mother's

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