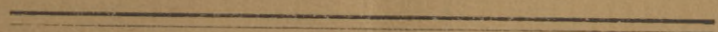
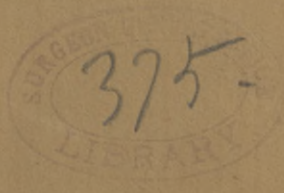


Adams, (S.S.)



THE
RELATION OF DENTITION
TO
DISEASES OF THE ALIMENTARY TRACT.

BY
SAMUEL S. ADAMS, A.M., M.D.,
WASHINGTON, D.C.



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THE RELATION OF DENTITION

TO

DISEASES OF THE ALIMENTARY TRACT.

It is now so generally admitted that the evolution of the deciduous teeth is a purely physiological process that further discussion of dentition as an etiological factor of the numerous ailments of infants would seem unnecessary. There are, however, so many intelligent physicians who join the multitude of credulous mothers in harboring the oldest theories and superstitions about dentition and its many dangers that silence would seem culpable. In fact, dentition seems to be their "Mascot" in time of need, and furnishes a diagnosis for all disorders from the mildest to the most fatal. By taking advantage of the "Law of Reflex Action," this class of thinkers is able to trace the effect to a cause, whether it be through the oral mucous membrane, just pushing it up in its endeavor to pierce it, or is some distance beneath it quietly forming. It pays no attention to the time and order of the eruption of the teeth, but is satisfied in thinking they are trying to reach the surface, cannot get through the gums until a way is cut for them, or, having once passed the barrier, are irritating the tender gingival structures. How singular that a physiological irritant applied to the terminal end of the fifth nerve should not only affect *its* central origin but also irritate remote as well as neighboring centres, thereby causing either the simplest transitory redness of the skin or the greatly-dreaded "second-summer diarrhoea!" A still more singular circumstance is that the disorders of "teething" usually are preceded or accompanied by some indiscretion on the part of the mother in her own diet, if the infant is nursed, or in the quality or preparation of artificial food.

Of course, it is not claimed that nursing infants, whose mothers endeavor to restrict their diet, do not suffer from



derangements of the alimentary tract during the period of dentition; but in such cases the cause may be sought in some factor to be revealed by close investigation.

In order to determine the relation of improper feeding to disorders of the alimentary tract during infancy a number of data have been kept and will form the basis of the argument. The cases herein cited are not selected, but have been taken from the records of one service of the Children's Hospital Dispensary, and include those treated during the months of June, July, August, and September for the ten years from 1879 to 1888 inclusive. The cases are not limited to any class of disease of the alimentary tract, but include every kind and degree from the slightest erythematous inflammation of the mucous membrane of the mouth to the most fatal form of dysentery. The data in some of the cases are incomplete, owing to the ignorance of those bringing the infants to the service, to their intentional misrepresentation, or to the carelessness and indifference of assistants, who failed to realize the importance of keeping correct notes of cases. Enough points, however, may be culled from the statistics to aid materially in the work.

No uniform law can be established for the eruption of the teeth, for while a certain order is recognized it is far from invariable. So much depends upon social and individual peculiarities that the first tooth may appear at any time from the third to the seventh month, or, as will be seen later, may not have made its exit at the end of the second year. Although recognizing such variability, it must be evident that in healthy infants the teeth make their appearance in the following order: Central lower incisors at the seventh month; upper central incisors from eighth to ninth month; lateral incisors at tenth month; first molars at twelfth month; canines at eighteenth month; and last molars at twenty-fourth month. In conformity with this classification infancy has been divided into four periods,—viz., under six months; from sixth to twelfth month; from twelfth to eighteenth month; and from eighteenth to twenty-fourth month.

The method of feeding is also of great importance; consequently, inquiry was made to ascertain whether the infant was

nursed, nursed and bottle-fed, nursed and table-fed, bottle-fed, bottle- and table-fed, and table-fed. In many cases the disturbance was caused by giving some nicknack, fruit, or other indigestible article. In many others the dietary was so comprehensive that they could not be placed in any class.

CHART I.

Showing method of feeding infants under six months, and the number of teeth in each case.

| Case. | White. | Colored. | Nursed. | Nursed and Table-Fed. | Bottle-Fed. | Bottle- and Table-Fed. | Table-Fed. | No. of Teeth. |
|---------|--------|----------|---------|-----------------------------|-------------|------------------------------|------------|------------------|
| 1..... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 2..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 3..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 4..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 5..... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 6..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 7..... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 8..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 9..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 10..... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 11..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 12..... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 13..... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 14..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 15..... | 1 | ... | 1 | ... | ... | ... | ... | 0 |
| 16..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 17..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 18..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 19..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 20..... | ... | 1 | ... | ... | ... | 1 | ... | 0 |
| 21..... | 1 | ... | 1 | ... | ... | ... | ... | 0 |
| 22..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 23..... | 1 | ... | ... | ... | 1 | ... | ... | 0 |
| 24..... | ... | 1 | ... | ... | 1 | ... | ... | 0 |
| 25..... | ... | 1 | ... | ... | ... | 1 | ... | 0 |
| 26..... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 27..... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 28..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 29..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 30..... | ... | 1 | ... | ... | ... | ... | 1 | 0 |
| 31..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 32..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 33..... | ... | 1 | ... | 1 | ... | ... | ... | 0 |
| 34..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 35..... | ... | 1 | ... | 1 | ... | ... | ... | 0 |
| 36..... | ... | 1 | ... | ... | 1 | ... | ... | 0 |
| 37..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 38..... | ... | 1 | ... | ... | ... | 1 | ... | 0 |
| 39..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 40..... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 41..... | ... | 1 | ... | ... | ... | ... | ... | 0 |

CHART I.—*Continued.*

| Case. | White. | Colored. | Nursed. | Nursed and Table-Fed. | Bottle-Fed. | Bottle- and Table-Fed. | Table-Fed. | No. of Teeth. |
|---------|--------|----------|---------|-----------------------------|-------------|------------------------------|------------|------------------|
| 42..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 43..... | ... | 1 | ... | 1 | ... | ... | ... | 0 |
| 44..... | ... | 1 | ... | ... | 1 | ... | ... | 0 |
| 45..... | ... | 1 | ... | ... | 1 | ... | ... | 0 |
| 46..... | ... | 1 | ... | ... | ... | 1 | ... | 0 |
| 47..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 48..... | ... | 1 | 1 | ... | ... | ... | ... | 2 |
| 49..... | ... | 1 | 1 | ... | ... | ... | ... | 2 |
| 50..... | ... | 1 | ... | ... | ... | 1 | ... | 0 |
| 51..... | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 52..... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 53..... | ... | 1 | ... | ... | 1 | ... | ... | 0 |
| 54..... | ... | 1 | ... | ... | ... | ... | 1 | 0 |
| 55..... | ... | 1 | 1 | ... | ... | ... | ... | 0 |
| 56..... | 1 | ... | ... | ... | 1 | ... | ... | 0 |
| Totals. | 14 | 42 | 13 | 5 | 7 | 5 | 2 | 4 |

TABLE A.

Showing method of feeding infants under six months.

| | White. | Colored. | Total. |
|----------------------------|--------|----------|--------|
| Nursed..... | 2 | 11 | 13 |
| Nursed and bottle-fed..... | ... | ... | ... |
| Nursed and table-fed..... | 2 | 3 | 5 |
| Bottle-fed..... | 2 | 5 | 7 |
| Bottle- and table-fed..... | ... | 5 | 5 |
| Table-fed..... | ... | 2 | 2 |
| Method not given..... | 8 | 16 | 24 |
| Totals..... | 14 | 42 | 56 |

In Class I.—under six months—there are 56 cases; of these 14 are white and 42 colored. It will be seen by reference to Table A that only 13 of the 56 cases were nursed, while 19 received supplemental food. It is also noticeable that 12 of the 19 received food from the table. Although the method of feeding is not given in 24,—nearly fifty per cent.,—it is fair to assume that a large proportion received supplemental food of such a varied nature that they could not be placed under any of the classifications adopted. Table-food seems to be the preferred article for the nursing as well as the bottle-fed infant. Two were fed exclusively upon table-food.

CHART II.

Showing method of feeding infants between six and twelve months, and the number of teeth in each case.

| Case. | White. | Colored. | Nursed. | Nursed and Bottle-Fed. | Nursed and Table-Fed. | Bottle-Fed. | Bottle- and Table-Fed. | Table-Fed. | No. of Teeth. |
|---------|--------|----------|---------|------------------------------|-----------------------------|-------------|------------------------------|------------|------------------|
| 1..... | ... | 1 | ... | ... | ... | ... | ... | ... | 3 |
| 2..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 2 |
| 3..... | 1 | ... | ... | ... | ... | ... | ... | 1 | 0 |
| 4..... | 1 | ... | ... | ... | ... | ... | ... | ... | 2 |
| 5..... | 1 | ... | ... | ... | ... | ... | ... | ... | 0 |
| 6..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 7..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 8 |
| 8..... | ... | 1 | ... | ... | ... | ... | ... | ... | 2 |
| 9..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 2 |
| 10..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 11..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 0 |
| 12..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 13..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 2 |
| 14..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 15..... | 1 | ... | ... | ... | ... | ... | ... | ... | 2 |
| 16..... | ... | 1 | ... | ... | ... | ... | ... | ... | 2 |
| 17..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 18..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 19..... | ... | 1 | ... | ... | ... | ... | ... | ... | 8 |
| 20..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 3 |
| 21..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 2 |
| 22..... | 1 | ... | ... | ... | ... | ... | ... | ... | 0 |
| 23..... | 1 | ... | ... | ... | ... | ... | ... | 1 | 8 |
| 24..... | 1 | ... | ... | ... | ... | ... | ... | ... | 0 |
| 25..... | ... | 1 | ... | ... | ... | ... | ... | ... | 2 |
| 26..... | 1 | ... | ... | ... | ... | ... | ... | ... | 0 |
| 27..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 0 |
| 28..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 29..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 0 |
| 30..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 31..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 0 |
| 32..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 33..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 34..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 35..... | ... | 1 | ... | ... | ... | ... | ... | ... | 2 |
| 36..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 37..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 0 |
| 38..... | ... | 1 | ... | ... | ... | ... | ... | ... | 2 |
| 39..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 40..... | 1 | ... | ... | ... | ... | ... | ... | ... | 8 |
| 41..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 1 |
| 42..... | 1 | ... | ... | ... | ... | 1 | ... | ... | 0 |
| 43..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 2 |
| 44..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 0 |
| 45..... | 1 | ... | ... | ... | 1 | ... | ... | ... | 0 |
| 46..... | 1 | ... | ... | ... | 1 | ... | ... | ... | 2 |
| 47..... | 1 | ... | ... | ... | ... | ... | ... | ... | 0 |
| 48..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |

CHART II.—*Continued.*

| Case. | White. | Colored. | Nursed. | Nursed and Bottle-Fed. | Nursed and Table-Fed. | Bottle-Fed. | Bottle- and Table-Fed. | Table-Fed. | No. of Teeth. |
|---------|--------|----------|---------|------------------------------|-----------------------------|-------------|------------------------------|------------|------------------|
| 49..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 50..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 51..... | 1 | ... | ... | ... | ... | 1 | ... | ... | 3 |
| 52..... | 1 | ... | ... | ... | 1 | ... | ... | ... | 0 |
| 53..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 2 |
| 54..... | 1 | ... | ... | ... | 1 | ... | ... | ... | 0 |
| 55..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 56..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 57..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 0 |
| 58..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 0 |
| 59..... | ... | 1 | ... | ... | ... | ... | ... | ... | 5 |
| 60..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 61..... | ... | 1 | ... | ... | ... | ... | ... | ... | 4 |
| 62..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 63..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 0 |
| 64..... | 1 | ... | ... | ... | ... | ... | ... | ... | 0 |
| 65..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 66..... | ... | 1 | ... | ... | ... | ... | ... | ... | 4 |
| 67..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 68..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 69..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 0 |
| 70..... | 1 | ... | ... | ... | ... | ... | ... | 1 | 0 |
| 71..... | 1 | ... | ... | ... | 1 | ... | ... | ... | 0 |
| 72..... | 1 | ... | ... | ... | ... | 1 | ... | ... | 6 |
| 73..... | ... | 1 | ... | ... | ... | 1 | ... | ... | 0 |
| 74..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 0 |
| 75..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 76..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 77..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 78..... | ... | 1 | ... | ... | ... | 1 | ... | ... | 0 |
| 79..... | 1 | ... | ... | ... | ... | ... | ... | 1 | 0 |
| 80..... | 1 | ... | ... | ... | 1 | ... | ... | ... | 8 |
| 81..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 4 |
| 82..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 83..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 84..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 85..... | 1 | ... | 1 | ... | ... | ... | ... | ... | 0 |
| 86..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 87..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 88..... | ... | 1 | ... | ... | ... | 1 | ... | ... | 0 |
| 89..... | ... | 1 | ... | ... | ... | ... | ... | ... | 4 |
| 90..... | 1 | ... | 1 | ... | ... | ... | ... | ... | 8 |
| 91..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 92..... | 1 | ... | ... | ... | ... | ... | ... | 1 | 2 |
| 93..... | ... | 1 | ... | ... | ... | 1 | ... | ... | 0 |
| 94..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 95..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 7 |
| 96..... | 1 | ... | ... | ... | ... | ... | ... | 1 | 8 |
| 97..... | 1 | ... | ... | 1 | ... | ... | ... | ... | 1 |
| 98..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 2 |
| Totals. | 27 | 71 | 10 | 1 | 17 | 7 | 9 | 15 | 125 |

CHART III.—*Continued.*

| Case. | White. | Colored. | Nursed. | Nursed and Bottle-Fed. | Nursed and Table-Fed. | Bottle-Fed. | Bottle- and Table-Fed. | Table-Fed. | No. of Teeth. |
|---------|--------|----------|---------|------------------------------|-----------------------------|-------------|------------------------------|------------|------------------|
| 29..... | ... | 1 | ... | ... | ... | ... | ... | ... | 9 |
| 30..... | 1 | ... | ... | ... | ... | ... | ... | 1 | 9 |
| 31..... | 1 | ... | ... | ... | ... | ... | ... | ... | 9 |
| 32..... | ... | 1 | ... | ... | ... | ... | ... | ... | 7 |
| 33..... | ... | 1 | ... | ... | ... | 1 | ... | ... | 12 |
| 34..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 35..... | 1 | ... | ... | ... | ... | ... | ... | ... | 20 |
| 36..... | ... | 1 | ... | ... | ... | 1 | ... | ... | 1 |
| 37..... | ... | 1 | ... | ... | ... | ... | ... | ... | 11 |
| 38..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 8 |
| 39..... | 1 | ... | ... | ... | 1 | ... | ... | ... | 6 |
| 40..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 10 |
| 41..... | 1 | ... | ... | ... | ... | ... | 1 | ... | 7 |
| 42..... | ... | 1 | ... | ... | ... | ... | ... | ... | 10 |
| 43..... | ... | 1 | ... | ... | ... | ... | ... | ... | 8 |
| 44..... | ... | 1 | ... | ... | ... | ... | ... | ... | 8 |
| 45..... | ... | 1 | ... | ... | ... | ... | ... | ... | 4 |
| 46..... | ... | 1 | ... | ... | ... | ... | ... | ... | 8 |
| 47..... | ... | 1 | ... | ... | ... | ... | ... | ... | 8 |
| 48..... | ... | 1 | ... | ... | ... | ... | ... | ... | 6 |
| 49..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 50..... | 1 | ... | ... | ... | ... | ... | ... | ... | 8 |
| 51..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 52..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 5 |
| 53..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 54..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 55..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 8 |
| 56..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 6 |
| 57..... | 1 | ... | ... | ... | ... | ... | ... | 1 | 13 |
| 58..... | 1 | ... | ... | ... | ... | ... | ... | ... | 4 |
| 59..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 2 |
| 60..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 0 |
| 61..... | ... | 1 | ... | ... | ... | ... | ... | ... | 4 |
| 62..... | ... | 1 | ... | ... | ... | ... | ... | ... | 12 |
| 63..... | 1 | ... | ... | ... | ... | ... | ... | ... | 19 |
| 64..... | 1 | ... | ... | ... | ... | ... | ... | ... | 0 |
| 65..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 13 |
| 66..... | ... | 1 | ... | ... | ... | ... | ... | ... | 10 |
| 67..... | 1 | ... | ... | ... | ... | ... | ... | ... | 4 |
| 68..... | ... | 1 | ... | ... | ... | ... | ... | ... | 6 |
| 69..... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... |
| 70..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 71..... | ... | 1 | ... | ... | ... | ... | ... | ... | 0 |
| 72..... | ... | 1 | ... | ... | ... | ... | ... | ... | 4 |
| 73..... | ... | 1 | ... | ... | ... | ... | ... | ... | 12 |
| 74..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 12 |
| 75..... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... |
| 76..... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... |
| 77..... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... |
| 78..... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... |
| 79..... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... |
| 80..... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... |
| 81..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 9 |
| 82..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 6 |

CHART III.—*Continued.*

| Case. | White. | Colored. | Nursed. | Nursed. and Bottle-Fed. | Nursed and Table-Fed. | Bottle-Fed. | Bottle- and Table-Fed. | Table-Fed. | No. of Teeth. |
|---------|--------|----------|---------|-------------------------------|-----------------------------|-------------|------------------------------|------------|------------------|
| 83..... | ... | 1 | ... | 1 | ... | ... | ... | ... | 10 |
| 84..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 2 |
| 85..... | ... | 1 | ... | ... | ... | 1 | ... | ... | 12 |
| 86..... | ... | 1 | ... | 1 | ... | ... | ... | ... | 2 |
| 87..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 12 |
| 88..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 0 |
| 89..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 0 |
| 90..... | 1 | ... | ... | ... | ... | 1 | ... | ... | ... |
| 91..... | 1 | ... | ... | ... | ... | ... | ... | 1 | ... |
| 92..... | ... | 1 | ... | ... | ... | ... | ... | 1 | ... |
| 93..... | ... | 1 | 1 | ... | ... | ... | ... | ... | 8 |
| 94..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 4 |
| 95..... | ... | 1 | ... | ... | 1 | ... | ... | ... | 9 |
| 96..... | ... | 1 | ... | ... | ... | ... | 1 | ... | 6 |
| 97..... | ... | 1 | ... | ... | ... | ... | ... | 1 | 12 |
| Totals. | 27 | 70 | 5 | 2 | 7 | 4 | 7 | 23 | 591 |

TABLE C.

Showing method of feeding infants between twelve and eighteen months.

| | White. | Colored. | Total. |
|----------------------------|--------|----------|--------|
| Nursed..... | ... | 5 | 5 |
| Nursed and bottle-fed..... | ... | 2 | 2 |
| Nursed and table-fed..... | 1 | 6 | 7 |
| Bottle-fed..... | 1 | 3 | 4 |
| Bottle- and table-fed..... | 1 | 6 | 7 |
| Table-fed..... | 8 | 15 | 23 |
| Method not given..... | 16 | 33 | 49 |
| Totals..... | 27 | 70 | 97 |

Table C shows that 5 of the 97 were nursed, and 43 received supplemental food, while the diet in 49 is not given. Thirty-seven received table-food, while only 11 had an exclusive diet of milk.

CHART IV.

Showing method of feeding infants between eighteen and twenty-four months, and the number of teeth in each case.

| Case. | White. | Colored. | Nursed. | Nursed and Table-Fed. | Bottle-Fed. | Table-Fed. | No. of Teeth. |
|--------|--------|----------|---------|-----------------------------|-------------|------------|------------------|
| 1..... | ... | 1 | ... | ... | ... | 1 | 10 |
| 2..... | ... | 1 | ... | ... | ... | 1 | 16 |
| 3..... | 1 | ... | 1 | ... | ... | ... | 4 |
| 4..... | 1 | ... | ... | ... | ... | ... | 16 |

CHART IV.—*Continued.*

| Case. | White. | Colored. | Nursed. | Nursed and Table-Fed. | Bottle-Fed. | Table-Fed. | No. of Teeth. |
|-------------|--------|----------|---------|-----------------------------|-------------|------------|------------------|
| 5..... | ... | 1 | ... | ... | ... | 1 | 20 |
| 6..... | ... | 1 | ... | ... | ... | 1 | 14 |
| 7..... | ... | 1 | ... | ... | ... | ... | 20 |
| 8..... | ... | 1 | ... | ... | ... | ... | 16 |
| 9..... | ... | 1 | ... | ... | ... | 1 | 10 |
| 10..... | ... | 1 | ... | ... | ... | 1 | 20 |
| 11..... | 1 | ... | ... | ... | ... | ... | ... |
| 12..... | 1 | ... | ... | ... | ... | ... | 16 |
| 13..... | 1 | ... | ... | ... | ... | ... | 20 |
| 14..... | 1 | ... | ... | ... | ... | ... | 6 |
| 15..... | ... | 1 | ... | ... | ... | ... | 20 |
| 16..... | ... | 1 | ... | ... | ... | 1 | 12 |
| 17..... | ... | 1 | ... | ... | ... | ... | 20 |
| 18..... | ... | 1 | ... | ... | ... | 1 | 10 |
| 19..... | ... | 1 | ... | ... | ... | ... | 10 |
| 20..... | 1 | ... | ... | ... | ... | ... | 10 |
| 21..... | ... | 1 | ... | ... | ... | ... | 20 |
| 22..... | ... | 1 | ... | ... | ... | ... | 16 |
| 23..... | ... | 1 | ... | ... | ... | 1 | 0 |
| 24..... | 1 | ... | ... | ... | ... | ... | 16 |
| 25..... | ... | 1 | ... | ... | ... | 1 | 16 |
| 26..... | ... | 1 | ... | ... | ... | ... | 14 |
| 27..... | ... | 1 | ... | ... | ... | ... | 8 |
| 28..... | ... | 1 | ... | ... | 1 | ... | ... |
| 29..... | 1 | ... | ... | 1 | ... | ... | 13 |
| 30..... | ... | 1 | ... | 1 | ... | ... | 8 |
| 31..... | ... | 1 | ... | ... | ... | 1 | 16 |
| 32..... | ... | 1 | ... | ... | ... | 1 | ... |
| 33..... | ... | 1 | ... | ... | ... | 1 | 10 |
| 34..... | ... | 1 | ... | ... | ... | 1 | ... |
| 35..... | 1 | ... | ... | ... | ... | 1 | 14 |
| 36..... | ... | 1 | ... | ... | ... | 1 | 10 |
| 37..... | ... | 1 | ... | ... | ... | 1 | 8 |
| Totals..... | 10 | 27 | 1 | 2 | 1 | 17 | 439 |

TABLE D.

Showing method of feeding infants between eighteen and twenty-four months.

| | White. | Colored. | Total. |
|----------------------------|--------|----------|--------|
| Nursed..... | 1 | ... | 1 |
| Nursed and bottle-fed..... | ... | ... | ... |
| Nursed and table-fed..... | 1 | 1 | 2 |
| Bottle-fed..... | ... | 1 | 1 |
| Bottle- and table-fed..... | ... | ... | ... |
| Table-fed..... | 1 | 16 | 17 |
| Method not given..... | 6 | 10 | 16 |
| Totals..... | 9 | 28 | 37 |

Finally, Table D shows that 1 was nursed and 20 received supplemental food; and of these 20 only 1 received milk. It

will be warrantable to assert that the 16, in which the diet is not mentioned, received table-food in greater proportion.

By analyzing Tables A and B, ages at which the diet should be milk, we see that 23 were nursed, 1 nursed and bottle-fed, and 14 bottle-fed, while 53 had table-food.

By Tables A, B, and C* we learn that 28 were nursed, 3 nursed and bottle-fed, and 18 bottle-fed, while 90 had table-food.

As the eruption of the teeth is said to have such a powerful influence in causing digestive disturbances, it will be instructive to study the number of teeth each infant had at the time of entrance.

From Chart I. it would seem to be the exception for an infant to have teeth prior to the sixth month. Two are recorded as having two teeth respectively, and it is worthy of mention, both infants were nursed exclusively,—a strong point in favor of nursing.

TABLE E.

Showing the number of teeth in infants between six and twelve months.

| No. | White. | Colored. | No. | White. | Colored. |
|--------------------------|--------|----------|-------------|--------|----------|
| 1..... | 1 | 1 | 7..... | ... | 1 |
| 2..... | 4 | 12 | 8..... | 5 | 1 |
| 3..... | 1 | 2 | None..... | 15 | 49 |
| 4..... | ... | 4 | | — | — |
| 5..... | ... | 1 | Totals..... | 27 | 71 |
| 6..... | 1 | ... | | | |
| Total with teeth..... | | | | 34 | |
| Total without teeth..... | | | | 64 | |

Table E shows the number of infants between six and twelve months having teeth and those without teeth; and it also shows the number of teeth that each infant had. Twelve white had teeth and 15 had none; and 22 colored had teeth and 49 were without them. Summing up, we find that 34 had teeth and 64—nearly two-thirds—had none.

* I have already expressed myself in favor of restricting the diet to milk until the eighteenth month. If, however, a more liberal diet is allowed it should be limited to farinaceous food. The infant should not be helped from the family table, as is so frequently done.

TABLE F.

Showing the number of teeth in infants between twelve and eighteen months.

| No. | White. | Colored. | No. | White. | Colored. |
|--------------------------|--------|----------|----------------|--------|----------|
| 2..... | ... | 7 | 14..... | 3 | 1 |
| 4..... | 3 | 6 | 16..... | 1 | 1 |
| 6..... | 3 | 9 | 20..... | 2 | ... |
| 8..... | 2 | 12 | None..... | 2 | 10 |
| 10..... | 4 | 8 | | — | — |
| 12..... | 2 | 9 | Totals | 30 | 69 |
| | | | Not given..... | 5 | 8 |
| Total with teeth..... | | | | 73 | |
| Total without teeth..... | | | | 12 | |
| Teeth not given | | | | 13 | |

Table F shows that 23 white and 51 colored had teeth,—74 in all; 12 had none and 13 were not recorded. It will be seen that only 2 white infants had twenty teeth and that 2 white and 10 colored children were without teeth.

TABLE G.

Showing the number of teeth in infants between eighteen and twenty-four months.

| No. | White. | Colored. | No. | White. | Colored. |
|--------------------------|--------|----------|----------------|--------|----------|
| 2..... | ... | ... | 14..... | 2 | 2 |
| 4..... | 1 | ... | 16..... | 3 | 5 |
| 6..... | 1 | ... | 20..... | 1 | 6 |
| 8..... | ... | 3 | None..... | ... | 1 |
| 10..... | 1 | 6 | Not given..... | 1 | 3 |
| 12..... | ... | 1 | | — | — |
| | | | Totals..... | 10 | 27 |
| Total with teeth..... | | | | 32 | |
| Total without teeth..... | | | | 1 | |
| Teeth not given..... | | | | 4 | |

Table G is of more than ordinary interest, for of the 32 infants with teeth only 8—twenty-three per cent.—had 16, and 7—twenty-one per cent.—had 20; and 1 colored child was without teeth.

The following table shows the condensed statement of the cases.

CONDENSED STATEMENT.

| | |
|----------------------------|-----|
| Total number of cases..... | 288 |
| Nursed..... | 29 |
| Nursed and bottle-fed..... | 3 |
| Nursed and table-fed..... | 31 |
| Bottle-fed..... | 19 |
| Bottle- and table-fed..... | 21 |
| Table-fed..... | 57 |
| Diet not given..... | 128 |

CONDENSED STATEMENT.

| | |
|------------------------------------|------------|
| Total number having teeth..... | 141 |
| Total number not having teeth..... | 131 |
| Total number not giving data..... | 16 |
| | <u>288</u> |

It will be more to the point to study the cases in which the diet is definitely settled. Hence by deducting 127, in which the data are not given, we have 161 cases with complete data. As I have previously expressed the opinion ("Encyclopædia of the Diseases of Children," vol. i. p. 338) that the infant's diet should be limited to milk until the eighteenth month, 21—being the number between eighteen and twenty-four months—should be deducted, leaving 140. In this last number there were 46 either nursed or bottle-fed exclusively, so that, strictly speaking, there are 94 out of 140 that received unsuitable food. As observation has shown that bottle-fed infants were sickened by imperfectly-prepared cow's milk or one of the many popular "infant foods," they may be consistently classed as wrongly fed, which increases the number to 106. How appalling that 106 out of 140 infants should have been so injudiciously as well as injuriously fed!

TABLE H.

Showing the method of feeding infants, without teeth, under eighteen months.

| Nursed. | Nursed and Bottle-Fed. | Nursed and Table-Fed. | Bottle-Fed. | Bottle- and Table-Fed. | Table-Fed. | Total. |
|---------|------------------------------|-----------------------------|-------------|------------------------------|------------|--------|
| 16 | ... | 17 | 13 | 14 | 13 | 73 |

From Table H it will be seen that, although the infants were without teeth, nevertheless, 44—or sixty per cent.—were partly or wholly nourished by table-food. If we deduct 11 nursing infants, who were under six months and were hardly expected to have teeth, we will have 70.96 per cent. without teeth fed from table-food. The only infant between eighteen and twenty-four months without teeth was fed exclusively upon table-food.

It being definitely settled that nearly seventy-one per cent. of infants without teeth were improperly nourished, and sought treatment for some disturbance of the alimentary tract, the question arose in the minds of those having supervision over them, whether it would not be more scientific to attribute it to a known factor—the indigestible food—than to a hypothetical one, the tooth still confined to its sac? The disturbances caused by indigestible or undigested food are well recognized

when applied to adult life, then why make an exception in the infant?

Again, in many "teething" infants the disturbance may be traced to indiscretion in diet of the nursing woman. Many honest and anxious mothers too frequently attribute ailments of their nurslings to dentition, while they continue to subsist upon the grossest food. This fact has been clearly demonstrated in numerous instances by restricting the mother's diet and the infant's ailment quickly ceased, and, too, without medication of either. Cabbage, turnips, watermelon, cantaloupe, and other vegetables and fruits not infrequently produce violent digestive disturbances in the nursling without any discomfort to the mother.

The histories of the cases herein cited unfold a tale of woe. More than once a "teething" infant—not yet three months old—was expected to receive nutriment for the support of life from an exclusive diet of "pot-liquor,"—the water in which cabbage and bacon has been boiled. Many sought advice for disorders of "teething," and requested lancing of the gums when there was no evidence of the formation of a tooth, quite overlooking the fact that the infant ate the family food.

It has been previously suggested that those classed under *bottle-fed* were not properly fed. The notes show that in many cases the food of the bottle-fed infant was an enigma. Improperly-prepared condensed milk, sour or foul-smelling cow's milk, one of the numerous foods, one of the farinaceæ in water, broth,—in reality a slop,—or crackers and tea was expected to nourish the infant while the supposed eruption of its teeth caused its ailment.

In order to emphasize the harmfulness of one of the substitutes for mother's milk the following interesting case is narrated:

I was called to see an infant, aged five months, that had been taking the homœopathic sterilized condensed milk. It had wasted to an extreme degree of emaciation, presenting the appearance of the last stage of cholera infantum. The mother, although she realized that the infant was on the verge of death, was loath to accept any other cause than that of "teething." Cow's milk had been tried but disagreed with

it, so this was ordered as being something new, and particularly applicable to such cases. Its digestion seemed to be perfectly normal, and my diagnosis was starvation. The fond parent yielded reluctantly to this suggestion and informed me that it had taken two cans of this spurious article every day. Fresh cow's milk was obtained and given to the voracious little one. This was retained. The following afternoon I was hastily summoned to this patient. Its family had become alarmed because it had slept so quietly, and imagined it was dying, when it was only enjoying the sleep usual to a well-fed infant. It continued to take properly-prepared cow's milk, and rapidly gained in weight.

A few days after this case was discharged my attention was called to a second, in about the same condition, which was taking the same article, and at the suggestion of the same physician.

The fact that disease of the alimentary tract occurs in those with teeth does not weaken the argument, for the first glimpse of the lower incisor seems to be a license for forcing upon the infant articles that neither its digestion can prepare nor its economy appropriate. I am at present attending three infants with dysentery. Neither has more than sixteen teeth, the youngest only six, but all are fed upon the grossest table-food.

In none of the cases was lancing practised, because the fault was always found, by close questioning, to be an error in diet rather than dental irritation.

Those advocating the influence of dentition in causing disease in infants may claim that the retardation of the eruption of the teeth in the cases reported should be charged to the constitutional diseases, from which dispensary patients so often suffer, rather than to improper feeding. Observation in this department has shown that infants with rickets or struma are more frequently affected by disorders which are the direct effect of exposure to cold than to the digestive disturbances, which are most frequent during the hot weather. Probably in a majority of the cases the unwholesome food caused the defective nutrition in summer which became manifest in winter as rickets.

It may also be claimed that race had its influence in causing

disease. By careful scrutiny it will be seen that, although more colored infants were treated, the proportion was greater in the white. However, it would seem at times as if the colored infant thrived upon a diet that would quickly kill his white neighbor.

After careful observation and study of the diseases of infants, during the period of dentition, I am free to assert that neither the evolution nor eruption of the teeth has ever been accepted as an etiological factor in any of them. I accept dentition as a purely physiological phenomenon which may be subject to perversion. I would not be dogmatic in the assertion that dentition is *never* a cause of disease, but such, indeed, has been my experience in pediatrics.

If those interested in this subject will pursue such an investigation they will eventually conclude that improper alimentation, and not "teething," is the most potent factor in causing the disorders of the alimentary tract of infants.

The best way to overcome the influence of the superstition is by emphasizing in our colleges the fact that dentition is a physiological process, that after-coming graduates may assist us in convincing mothers that the observance of the strictest regimen and diet during the period of dentition is the surest guarantee against "teething" disorders. To this end let us labor, and I doubt not that ere the ARCHIVES OF PEDIATRICS celebrates its first decade, a vast majority of intelligent mothers will look after the infant's diet, firmly trusting that the teeth will take care of themselves.

I cheerfully acknowledge the valuable assistance rendered by Dr. W. J. Dillenback, Resident Physician of the Children's Hospital, D.C., in the preparation of the data used in this paper.

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WM. PERRY WATSON, A.M., M.D.,

Attending Physician to St. Francis's Hospital and to the Central Dispensary (Department of Pediatrics);
Consulting Physician to St. Michael's Orphan Asylum, etc., Jersey City, N. J.

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