

It is passed by muscles of deglutition over epiglottis into œsophagus, which lies behind trachea and runs from pharynx to stomach (measuring seventeen inches). It enters stomach at cardiac orifice, and is acted upon by the gastric juices, and some of the peptones are absorbed by the mucous membrane which lines the stomach.

The residue is now a soft mass called chyme, and passes through pyloric orifice into the duodenum, which is the first twelve inches of the small intestine.

Here it is acted upon by the bile and pancreatic juices which enter by small ducts. It now becomes a milky fluid, containing peptones, water, salts, and emulsified fat. This is called chyle, and as such it enters the remaining part of the small intestine, namely: jejunum and ileum. This is lined with folds of mucous membrane called *valvulae conniventes*; these folds allow of a greater surface for absorption. Here we find numbers of finger-like projections called villi, and in their structures are lacteals and lymphatics. The lacteals convey the soluble peptones to the blood stream, and the lymphatics collect emulsified fat and carry it *via* the thoracic duct or receptaculum chyli to the junction of the left jugular and left subclavian vein.

The remaining partially digested food now passes into the large intestine, which consists of three parts: colon, caecum, rectum. Here the completion of digestion and absorption takes place and waste products are expelled.

The time taken for digestion varies between one to five hours, according to nature of food, white meats, *e.g.*, veal and pork, taking about four hours.

Ptyalin, the active principle of saliva, is not secreted during the first six months of life. This must not be overlooked when choosing diet for an infant, as so many patent foods contain a large percentage of carbo-hydrates.

HONOURABLE MENTION.

The following competitors receive honourable mention: Miss Elsie Hooper, Miss J. G. Gilchrist, Mrs. Farthing, Miss R. E. S. Cox, Miss L. D'Oyly-Watkins, Miss L. Morley, Miss E. O. Walford, Miss M. D. Hunter, Miss A. E. Cartwright, Mrs. J. Gotlob, Miss A. Douglas, Miss Jane McNeillie.

Miss Morley describes the stomach as a muscular bag lined with a mucous membrane which lies in wrinkles when the stomach is empty and smooths out when distended with food.

QUESTION FOR NEXT WEEK.

In what ways may a patient's breathing be affected, and what is their significance?

RELATIVE SIZE OF INFANT'S STOMACH IN CONJUNCTION WITH FOUR-HOURLY FEEDING.

By Miss J. B. N. PATERSON.

We are all familiar with Professor Rotch's diagram of the infant's stomach. This model, and the travestied pink copies which one sees at Welfare Centres, are now stumbling blocks to many who wish to adopt the four-hourly feeding of infants. It is well to remember that this diagram is merely anatomical, and that with the advent of X-ray and Bismuth it has been physiologically proved that some of the more fluid part of the milk passes quickly into the duodenum. Overfeeding still has harmful results, as evidenced by elongation of the intestine, with accompanying loss of tone and the typical "pot belly"; but it is misleading to tell the nurse or mother that a baby's stomach can only hold one ounce, and yet ask her to feed the child four-hourly instead of heretofore—two-hourly. They sense a discrepancy: either the baby will starve or be sick, or worse, that little "rubber bag"—the stomach—will be over extended! The mother's milk takes $2\frac{1}{2}$ hours to pass completely through the stomach, cow's milk $3-3\frac{1}{2}$ hours (Dr. Bolt, of Cleveland). To allow of complete digestion and emptying of the stomach the *least* interval should be obviously 3 hours. Hundreds of thousands of children have been fed four-hourly from birth with excellent results. In general, Dr. Truby King advocated four-hourly feeding, although he was inclined to advise three-hourly feeding in cases where extra stimulation was necessary for the mother's breasts, owing to deficient milk supply. Now the necessary stimulation is usually obtained on four-hourly feeding by massage and bathing of the breasts, and regulating the diet and life of the mother.

Regarding caloric estimation of the baby's requirement according to body weight, the full requirement of 50 calories per lb. per diem in the first quarter is not advisable or workable until the baby is in the fourth week of life. We find, by weighing a large number of normal babies before and after nursing, that the average normal requirement is:—

8 to 10 ounces	at the end of the first week.
13 to 15 "	" " " second week.
16 to 18 "	" " " third week.
20 to 22 "	" " " fourth week.

A normal baby one month old, weighing $8\frac{1}{2}$ lb., requires 50 calories per lb. per diem; $8\frac{1}{2}$ multiplied by 50 equals 425. Mother's milk averages 20 calories per ounce, therefore 425

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