

MARASMIC INFANTS AND VITAMIN D

A SPEECH of Mr. A. M. Samuel, the Financial Secretary to the Treasury, in which reference was made to the development of the British chemical industry, particularly in regard to vitamin D, has roused much interest. Nurses often wonder why some children respond less than others to cod-liver oil treatment. The probable explanation lies in the fact, discovered during recent research, that there are enormous variations in the vitamin D content (its most valuable property) in different batches of the oil.

In the "Lancet" this week Mr. Kenneth McFadyean, M.R.C.S., says that the work of Steenbock, Chick and Roscoe demonstrates the marked relative deficiency of vitamin D in ordinary cow's milk and its complete absence from the milk of cows fed on oil cake. "This deficiency is not increased in the smallest degree by scalding, for vitamin D resists oxidation even when exposed to 100 degs. C. for 12 hours. The fact that vitamin D deficiency appears to be largely responsible for marasmus in young infants and for rickets at a later period accords with some of the recent experiments of Chick and Roscoe. These workers showed that a diet deficient in vitamin D might result in arrest of growth, but that typical rickets is far from being an invariable result. In all cases vitamin D has been supplied in the form of ostelin, a proprietary preparation of the unsaponifiable fraction of cod-liver oil. An analytical record of the preparation has appeared in the 'Lancet.'

Mr. McFadyean gives details of two cases as specially interesting. "Both children were regularly exposed to the sun's rays and though both pigmented well, neither made any progress until vitamin D was added to the diet. One of these children was living under excellent hygienic conditions in the hands of a trained nurse. The second was in a nursing home for nine weeks from birth, under careful and constant supervision."

In the first case, the infant was delivered after artificial induction of labour at the end of the thirty-sixth week of pregnancy. The mother, aged 41 years, had severe toxic albuminuria of pregnancy, which terminated fatally. The infant, whose birth weight was 4 lb. 12 oz., was at first fed on cow's milk diluted (4 oz. of milk and 8 of water in 24 hours). It lost weight, regained it when citrated whole milk was given, but showed characteristic signs of marasmus. Vitamin C (orange juice) was added to each feed. Fifth week, child strikingly marasmic; weight 4 lb. 13 oz. Vitamin B (butter and malted carbohydrates) added to each feed. No orange juice. Seventh week, weight 5 lb.; 8th, 5 lb. 1½ oz. Vitamin D (ostelin) added to each feed. No orange juice, butter or malted carbohydrates given. Weight then increased; 9th week, 5 lb. 6½ oz.; 10th week, 5 lb. 13½ oz.; 17th week, 8 lb. 8 oz.; 32nd week, 14 lb. From first to last no alteration was made in the basic food, method of feeding, or other environmental factor.

Case 2.—The infant was delivered by normal labour at full term. The mother, aged 23 years, was healthy. Birth weight 8 lb. Natural feeding. By the 4th week it was marasmic in appearance. Artificial feeding with scalded cow's milk, milk diluted and vitamin C (orange juice) added, a proprietary food, diluted cow's milk again, whole milk, made little difference to the weight, which was 8 lb. 8 oz. in the 4th and the 20th week. Then vitamin D (ostelin) was added to each feed. The weight then increased as follows :—21st week, 9 lb.; 24th week, 11 lb.; 28th week, 13 lb.; 32nd week, 15 lb. 2 oz.; 36th week, 16 lb. 8 oz.

Ostelin, the preparation referred to above, is prepared by "Glaxo," the first firm, we believe after years of research, to produce a standardised concentrate of the anti-rachitic substance contained in cod-liver oil and known as vitamin D. One drop of ostelin contains the vitamin D of four ounces of cod-liver oil. It is therefore put up in various dilutions, and in the glycerine preparation four drops equal one teaspoonful of cod-liver oil.

IMMUNITY

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Theories of Disease

Probably one of the earliest notions of the cause of disease was a belief that an evil spirit or demon entered into or possessed the body of man and there wrought various ills. This is the belief still widely prevailing among the savage tribes and this demonistic conception of disease still finds expression in the practices of their medicine men and wizards. Two modes of treatment are possible: the spirit may be lured out by propitiatory sacrifices, promises, etc., or he may be forcibly evicted by powerful charms, beating of drums, or by beating or abusing the body of the patient. Examples of both methods of treatment may be found among the savage tribes.

As civilization advanced the demon or evil spirit theory lost ground and was superseded by the Hippocratic theory, called after Hippocrates, "the father of medicine." This was the dominant theory all through the middle ages. According to this theory the body contained four humours: blood, phlegm, yellow bile and black bile. Health consisted of a proper mixture of these four humours; disease occurred when the balance was disturbed. The efforts of the physicians were directed towards keeping the

(Read before the annual meeting of the Saskatchewan Registered Nurses' Association, April, 1927.)