

OBSTETRIC NURSING.

— BY OBSTETRICA, M.R.B.N.A. —

PART II.—INFANTILE.

CHAPTER IV.—INFANTILE FEEDING.

(Continued from page 125.)

At their completion, this Course of Lectures will be published as one of the Series of "Nursing Record Text Books and Manuals."

THE colour of human milk is bluish white, owing to its greater transparency as compared with cow's milk. The *proportion* of the component parts of milk to each other is a matter of much interest and practical importance, its average composition being 89 parts of water to 11 of solid constituents. These latter consist of lactose or sugar of milk, 4.5; saccharine matters, 3.5; of fatty matters or butter, 2.5; 0.3 of extractives, and 0.2 alkaline and earthy salts (phosphate of lime and magnesia). Now let us thoughtfully consider the *purpose* of each of these substances, or, if you will, its *destination* in the infant frame. We shall find some are *eliminated*, some *retained*, some *consumed*, and some *excreted*. And here I must pause to call your attention to the analogies that exist between blood and milk, which has been termed white blood. Both are *nutrient fluids*; both, under certain conditions, possess the property of *solidification*; but there is a point here to my mind of much interest—that this process tends to produce perfectly *opposite effects* in the human system. For instance, when from any cause the blood stream is diverted from the blood *current*, and poured into any of the cavities or other parts of the body and becomes *solid* or coagulated, its *nutrient value ceases*; it is no longer a source of *life*, but a menace to it, leading frequently to its extinction, as in severe cases of internal hæmorrhage. When the milk fluid *consolidates*, it is the first step towards *nutrition*, and were it not so it would cease to be the absolutely *perfect nutriment* it is. The whey of the milk in a measure resembles the serum of the blood. Both contain albumen, the one in a *soluble*, the other in an *insoluble* condition. In the fluid medium of one, blood corpuscles circulate; in the other, milk corpuscles are suspended, and both are pre-eminently necessary to the nutrition of the body. The one fluid is arterialised, the other is not. Blood is formed for the maintenance of life *within* the body, milk is secreted from the blood elements for the sustenta-

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tion of life *without* the body, and is absolutely useless to the individual from whom it flows, and under adverse circumstances may become a source of pain and disease to the maternal system.

Let us now pass under review the constituent elements of milk, and we will begin with the—most abundant—water which contains in solution saccharine, mineral, and earthy substances, which are made use of in the body. The water that is not required for the irrigation of the tissues, is eliminated through the renal organs. The cutaneous transpiration in infancy is very slight. I have no recollection of seeing a baby perspire except by the head. Of all the constituents of milk, we find the saccharine the most abundant, lactose or sugar of milk standing at 4.5. What is the purpose of this element? To support combustion. I pointed out to you in an early paper, of the present division of my subject, that the infantile heart-beats were excessively rapid, from 130 to 140 per minute; the pulmonary circuit short and *swift*, the ratio of respiration being from 20 to 30 per minute. The vital fire burns fiercely in infancy; and Nature, with unerring wisdom, provides extra *fuel*. The lactose, or sugar of milk, is conveyed in the blood of the pulmonary vein to the lungs, and eliminated in the form of carbonic acid and water; and you know that by the generation of carbonic acid the heat of the body is maintained, and the blood oxygenated. Our baby's blood is highly arterialised, and to this fact we owe the beautiful clear pink hue of the skin of a healthy, full-term, newly-born infant, especially after the bath. It always reminds me of the delicate *pink* lining of a sea-shell, and, to my knowledge, never recurs at any other period of life. I shall have to revert to the saccharine element in milk further on, when we discuss hand-feeding, as it then becomes a matter of great practical importance. I must remind my young readers that lactose is one of the non-azotised substances—that is, it does *not* contain nitrogen. They are sometimes called the hydro-carbons.

The next most abundant element is casein, the solid constituent of milk. It stands at 3.5. It is an azotised substance, nearly allied to albumen, and it is the sole form in which the young mammal receives albuminoid nutriment into its body during the period of lactation. In its composition it resembles albumen, and it is to that substance in an *insoluble* condition and in a state of minute division that milk owes its

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