

OBSTETRIC NURSING.

— BY OBSTETRICA, M.R.B.N.A. —

PART II.—INFANTILE.

CHAPTER V.—HAND FEEDING.

(Continued from page 273.)

TO bring this matter to your minds, we will make a few simple experiments (on paper); you can do them for yourselves when you have time. (1) Put two ounces of pure cow's milk into a clean tumbler. (2) Put one ounce of cow's milk and one ounce of water into another tumbler. You know as a matter of routine we Nurses are directed to dilute cow's milk to half, or even two-thirds more water than milk. I have selected the former rule. Raise the temperature of both the fluids slightly, say to feel or rather taste warm, add to each a small quantity—thirty to forty minims—of the Essence of Rennet, which you can get at almost any chemist's. Gently stir the contents of each tumbler, and after a short time (five minutes) stir them again, and then leave them alone for three or four hours or more. When we come to examine the milk, and the milk and water, respectively, we find, of course, that we have decomposed the milk into curds and whey, and the milk and water into curd and a very watery whey. We now take a good teaspoonful or more of the curd from each glass, and place them separately upon a clean napkin, marking out one from the other, and let them drain and dry for several hours, when I sometimes remove the curds on to a piece of filter paper or a fold of blotting-paper; but this is not necessary except as a means of taking out as much moisture as possible. We again examine the curds, and if you had not marked the distinction between them, I venture to assert you will not find out the difference. No. 3—Take three ounces of freshly-drawn breast milk from a lying-in patient, and treat it in a precisely similar manner, and judge for yourselves to what extent you have assimilated the two other curds to the curd of the human milk.

I shall have to revert to this subject farther on. In the meantime, I leave my young Nursing readers to try these little experiments for themselves, and judge for themselves as to how far we have assimilated the casein of cow's and human milk respectively by the process of dilution (?) with water, remembering also that the process we have simulated takes place in the infantile

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stomach as soon as the milk enters it, and that the *instant* separation of the solid from its fluid constituents is the first step towards making use of the food to supply the needs of infant nutrition.

With respect to the most abundant constituent of milk—the aqueous—we see that the excess of water in human milk over cow's is but slight, as nine to six—less than three per cent. upon the total sum of the elements tabulated, as you can see by putting your lactometer first into a test-glassfull of *breast* milk, and then into one of *cow's* milk, assuming it to be *genuine*. And yet we are instructed to add from fifty to seventy-five per cent. of *water* to cow's milk to weaken (*sic*) the casein! Sugar is the next ingredient we will consider. It is, like water, more abundant in human than cow's milk, 4.5 being the given proportion in the former, and this is *milk sugar*, and not the cane sugar we add, as a rule, to cow's milk, though many medical writers affirm that sugar of milk should be used for the infant's food. Speaking generally, it is made far *too* sweet. So far we find that *added* water to the cow's milk has left the *casein* much as it found it, or rather shall we say the casein *left* the water, and took away with it the fatty particles that we *failed* to find or skim off the cow's milk before we *adulterated* it. Of all the elements of milk we can best assimilate the oleaginous, by simply subtracting from the cow's milk, in our test-glass, any *superfluity* we may have the good fortune to find. With respect to the proportion of the solid matters, including the all-important mineral substances, we find them as 110 in human milk to 140 in cow's, the same ratio of proportion as water, that stands 890 to 860, but reversed; and we can understand that Nature requires a larger amount of *bony* material for a calf than a baby. These mineral constituents are for the most part held in *solution* in the milk, and made use of with the casein to consolidate the frame, and we can assimilate the proportions by adding *water* to the cow's milk we prepare for baby, as we can make it *sweeter* by adding sugar. The salts or saline ingredients are also diluted with water, and are as two in human to six in cow's milk.

To recapitulate, cow's milk can be assimilated to human milk—in its aqueous, mineral, and saline ingredients by *adding water*, in its oleaginous constituent by the *subtraction* of a portion of the fat, or butter, in its *saccharine* by the *addition* of sugar; but it remained for modern science to deal with the albuminous element (casein) with which at present we have done little.

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[previous page](#)

[next page](#)