The Artificial Feeding of Infants.

By a Baby Lover.

So many babies are "hand-fed" now-a-days that a knowledge of an infant's diet is indispensable to a trained nurse. How often is the question asked by an anxious mother, "What am I to feed my baby on?" And then comes the problem of the quality, quantity and frequency of the feeds.

A baby needs for its development proteid and mineral matter, fat and carbohydrates. Now all these substances are to be found in milk: the proteid in the form of casein and albumen, the mineral matter in the form of phosphate of lime (so necessary in the formation of bone), and phosphate of potash (for the development of muscle and the making of blood). Fat in the form of cream and carbohydrates in the form of lactose or milk sugar. We all know that no substitute, however good, can take the place of human milk, but in the event of it being impossible to put the baby to the breast, one must resort to cow's milk. Unfortunately, there is a difference between human and cow's milk, more perhaps in the quality of the principal ingredients than in their relative amount.

In human milk the proteid consists of equal parts of casein and albumen and is easy to digest, more especially as there is a certain amount of sulphur in the casein which aids digestion. Now in cow's milk the proteid is not only more in quantity, but consists of 6 parts of casein to 1 of albumen. It is, therefore, not so easily digested and the milk being slightly acid forms a larger and denser clot. The fat in human milk is oily and can be entirely absorbed; in cow's it is about the same in quantity but, owing to it being more solid, is only partially absorbed. The carbohydrates in the form of lactose, are the same in quality in both human and cow's and are entirely absorbed, there is however a lesser amount in the cow's. On the other hand there is a slight increase in the quantity of mineral salts in cow's milk, but this is of little importance as the child does not absorb more than it requires.

In preparing cow's milk as a substitute for human, it must be remembered that human milk as it leaves the breast (in a healthy mother) is practically sterile; cow's milk, due to contamination, by the time it reaches the infant may not be. By "sterilisation" and "Pasteurisation," cow's milk is, however, rendered as sterile as human. In "sterilisation" the milk is kept to above boiling point for twenty minutes, by placing it in a double saucepan and adding some salt to the water in the outer vessel. This has the disadvantage of altering the taste, coagulating the albumen, and rendering the fat and casein not so easy of digestion. In the "Pasteurisation" of milk it is only kept at a temperature of 160 deg. Fahr. for 20 or 30 minutes, which method does not destroy the germs so effectively, but by it the disadvantages of "sterilisation" are avoided. The simplest method is to place the required amount of milk in a bottle which is 3 parts immersed in water. The water is allowed to boil for 40 minutes, the bottle being then rapidly cooled and removed.

To make cow's milk a substitute resembling as much as possible human, take 2 parts milk to 1 part water, and to every 8 ounces of this mixture add 2 teaspoonfuls of white cane sugar and ½ ounce of cream.

Barley water can be used instead of plain water, as it aids digestion by reducing the density of the curd. It can easily be made from "Robinson's Patent Barley." Lime water is also good as it reduces the acidity of cow's milk. It can be made by taking a lump of unslaked lime and a pint of cold boiled water

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