CONTRIBUTED ARTICLES.

INFANT FEEDING.

By Miss Sutherland.

(Read at the Conference in Madras.)

"IN this paper I have only thought of normal infants, and have not gone beyond the age of 9 months, when they require more solid food than milk.

The feeding of infants naturally falls under one of two heads—(1) breast feeding and (2) artificial feeding.

There is no question which method is best, as mother's milk is the food specially prepared by nature for the child and it is adapted to its needs in every way. It is undoubtedly a nurse's first duty to do everything in her power to promote breast feeding for every infant of which she is in charge, provided that the health of the mother permits. Should the mother be suffering from tuberculosis, high fever of any kind or from anæmia, she is not fit to feed her child. Fever or anæmia may be passing debilities, but a tubercular mother should give up all thought of breast feeding, as it is too great a strain upon her strength.

The routine of ordinary breast feeding is known to us all, so I shall not deal with it here, further than just to say that the method I have found to be most satisfactory is that the child should have feeds from alternate breasts every three hours by day and, if necessary, once during the night. The night feed, however, is better left off as soon as possible. The "alternate breast" rule of course only holds good when the mother has plenty of milk. When it is scanty other measures have to be adopted.

There are just a few difficulties about breast feeding which I should like to mention. (1) Lack of mother's milk. This may be that the milk does not come at all or sometimes milk comes and quite suddenly stops and the mother has absolutely nothing for her child. Delay in the secretion of milk is often the result of not putting the child to the breast right from the beginning. After the mother has had some hours rest or sleep after the birth of the child, it should be put to the breast for a few minutes. This stimulates the breasts and also acts as a stimulant to the uterine muscles and aids involution. Many mothers—and their friends—will not allow a baby to be put to the breast until milk has come in, and it is with great difficulty that one tries to point out to them that the fluid—colostrum—in the breasts at first, is necessary for the child and that the act of sucking acts as a stimulant and helps the secretion of milk to be established. People *will* give a baby milk, sugar and water during it's first day. If nature intended the child to have milk, then it would be provided, but people will not see this, and think the child is being starved. Exceptions of course must be made with small premature infants or very large ones. Premature babies cannot afford to lose weight, and large ones as a rule lose so very

heavily that it is quite good to give some milk and water 1 in 3 six hourly. It is best in giving supplementary feeds to infants, not to sweeten them. The child soon learns to like the sweet taste and often refuses it's mother's milk. Let the breast milk be the more palatable of the two.

I have heard a good deal about the results obtained by Dr. Truby King's method of stimulating breasts, namely the application of hot and cold compresses, for about ten minutes before feeding. The method is simple. Two small basins with a piece of lint or flannel in each are required. Put cold water in one basin and very hot in the other. The hot flannel is wrung out and put on one breast and the cold one on the other. After a minute or so they are put back in their respective basins, again wrung out of the water and applied to opposite breasts [*i.e.*, the one which had the hot flannel first, now has the cold one, and *vice versa*]. This is repeated several times, the whole process taking about ten minutes. The child is then put to the breasts. If there is no milk it is only left at each breast for about two minutes. Then a supplementary feed of cow's milk or some artificial food is given. Gradually the breast milk increases and the supplemented feed is consequently reduced. I have proved this method over and over again and the results are really wonderful. The important point to notice is that the child does not suck too long from the breasts while they are empty as this is apt to cause cracking of the nipples. The mother should have milky food, and Glaxo, ovaltine or lactagol are good for her.

(2) Another difficulty with breast feeding is that the baby vomits almost as soon as it is fed. Of this there are several causes. (1) It may be because the milk is too rich. This is generally remedied by giving the baby a teaspoonful of hot water just before feeding. This dilutes the milk. A second cause may be flatulence, the result of the baby feeding too quickly. Short rests during feeding should correct this. Vomiting may also be the result of overfeeding, but a careful nurse or mother should notice this. It is difficult to estimate the amount of breast milk which a baby gets at each feed, but this can in a measure be done by weighing the child on accurate scales before and after feeding.

The next difficulty is when the mother's milk does not seem to suit the baby. It does not thrive, looses weight and perhaps has diarrhœa.

The first thing to do is to attend to the mother's diet. No hard and fast rule can be laid down, as what suits one mother and child, may be bad for others. Generally green vegetables, raw fruit, rich or highly spiced food should not be given to nursing mothers. Oranges may be an exception, but should be carefully given. I have found plantains to be most upsetting in some cases and to have no ill effects in others. It is a mistake for nursing mothers to be overfed. Give good simple food at regular times, and a glass of cold water two or three times a day is very good. When aperient is necessary for the mother, strong purgatives must be avoided as they affect the milk and upset the baby.

Another reason for shortage of milk or for its not agreeing with the baby, is worry or nervous excitement of any kind on the part of the mother. Some mothers fret so much that it is quite imperative that they should stop breast feeding. Everything should be done to prevent such mental upset, but it is often hard to do so and sometimes quite impossible.

Next we come to artificial feeding—a question upon which everyone has their own opinions. If for any good reason a baby cannot have its mother's milk, something as nearly like it as possible must be found.

First there is cow's milk. It is nature's food for a calf and therefore is proportioned to the needs of that animal. The needs of a baby are different and mother's milk is suited for it. The nearest approximation simply obtainable is to dilute cow's milk with water and add sugar and fat. An easy—although not quite accurate—way of remembering the percentages of protein, sugar and fats in cow's and mother's milk is to think of cow's milk as 4%, 4%, 4%, while human milk is 2% (protein), 4% (fats), 6% (sugar).

One school of opinion teaches that by the time a child is a month old, it is best to give it undiluted cow's milk with the addition of Sod. Cit. ʒi to milk ℥i, to make the curd formed in the child's stomach less dense and more easily digested. This throws an extra strain on the child's digestive system and the unused protein has to be excreted. Some of this appears in the motions as small particles of curd and must not be taken as an indication that the child is not digesting its food. It is really the residue after as much as possible has been digested and absorbed. The kidneys also have extra strain put upon them as part of their function is to excrete waste proteins. If excess is absorbed it just has to be excreted again. The extra strain then may not be noticed, but it is liable to impair the child's health later on.

There are various ways of making cow's milk suitable for infants, but as a rule one wants to advise a method which is easily carried out by the mother. In institutions with a trained staff, humanising and pasteurising can easily be done. In India especially I should think the simpler the method the better, as in emergency it may have to be left in the hands of ayahs or servants.

Get fresh milk morning and evening. It is most satisfactory to see the cow's milked. At once scald the milk by just bringing it to boiling point. Then put it in a scalded jug or basin and keep it protected from dust, in a cool place. At each feeding time, pour the required amount into a measure and add boiling water in the proportion necessary, also a little cane or milk sugar. The difficulty which I find in this country is the supplying of the necessary fats as reliable cream is hard to get. I have used Virol, and it seems quite satisfactory—a drop or two to quarter of a teaspoonful in each feed according to the age of the baby.

A more satisfactory method, but one which is not quite so simple, is the Soxhlet method. A special sterilizing pan with a stand inside for 10 bottles is used. The milk and water and sugar required for each feed is put into a bottle, a rubber disc covers the mouth, and the bottles are put into the stand

inside the sterilizing pan with cold water coming ¾ up the bottles. Bring the water to the boil and let it boil for 20 minutes. Lift out the stand and cool the bottles quickly. As each feeding time comes round, all that has to be done is to stand a bottle in a little basin of hot water till the milk is warm, remove the rubber disc and put on a bottle teat. The Virol would be added just before giving the feed. There is no need to buy an expensive apparatus. A bazaar tinman will make a pan and stand and ordinary small bottles can be used. Boiled corks will do quite well. Rubber ones are best if they can be got. Soda Cit. 3i—3i can be added to diluted milk if the child does not digest properly.

Goat's milk can also be used for infants. For the first few months it should be diluted and prepared in the same way as cow's milk, gradually adding less water. Eventually the child may suck the milk directly from the goat's udder.

A wet nurse is sometimes got when a baby's own mother cannot feed it. She should be selected with very great care. I have no experience with this method, so perhaps someone else would be good enough to tell of any advantages or disadvantages she knows.

Although fresh milk is undoubtedly the best artificial food for an infant, it is so very difficult in this country to get really reliable good milk, that one is often forced to use and recommend dried milks or artificial foods. They are certainly the safest things to use, although they, too, have their disadvantages. In the drying process, all the vitamens are lost, therefore something else must be given to make those up to the baby, or else it will become rickety and unhealthy. This may easily be done by giving a little fruit juice every day. Orange juice is good and easily obtained. Grape juice may also be used. I should be glad to know if anyone here has ever found Glaxo unsatisfactory for infants of a week old or so. I have several times found that the motions seem to irritate the buttocks and they get sore very quickly. It seems to suit babies who have had a good start of two or three months on breast milk.

Allenbury's Nos. 1, 2 and 3 I have found very satisfactory. Whatever the method of feeding, it must be remembered that, apart from actual feeds, the baby sometimes is thirsty and requires a drink of water. It is quite a good practice to give a baby regularly a drink of cold boiled water about two or three times a day, especially during hot weather.

In selecting 'Infant Feeding' as the subject of a paper, I have done so in the hope that there may be a helpful discussion following it. It is a matter which at all times requires much thought and care, but especially is that so in this country where climate has in many ways to be considered. My own special difficulty is to find a suitable food for unwanted Indian babies which are sometimes left with us. It is true that often they are handicapped by congenital disease, but in several cases we have tried first one thing and then another, and it has all been of no avail. Lately I came across a recipe for an emulsion which seems as if it might be very good, but I have not yet had occasion to try it. It is Milk Sugar 1 oz., Dried milk 1 oz., Cod Liver Oil ½ oz., Boiling water up to 4 oz. Of this emulsion use ½ to ¾ boiled water when required."

[Miss Sutherland has asked me to contribute a few remarks as to my method of dealing with the all-important subject of Infant Feeding. Personally —with *normal* babes—I prefer 4-hourly feeds from birth—omitting the night feed—which I consider is merely a bad habit of which it is extremely difficult to break the child, once established. I allow the infant to take as much as it can without "possetting" at each meal—starting at 6 a.m. and follow this feed with one at 10 a.m., 2, 6 and 10 p.m., respectively, giving cooled, boiled unsweetened water freely between meals, and offering the child nothing else at night should it cry. By this method I find good night habits are established very early—the babe learns that the night is meant for sleeping and not for feeding. With breast feeding I always use the "alternate breast" method, and should the child not be satisfied, supplement with a few teaspoonfuls of whole milk—unsweetened—the infant will then only take just what it requires to satisfy its hunger.

In cases where the mother is unable to nurse her babe—I always endeavour to secure the colostrum, and only start the artificial feeding at the time the mother's flow of milk should be established, allowing neither medicine (in the shape of castor oil), nor food to be given, prior to this. I then commence with milk ʒi, Soda Cit. ʒi. and a little white sugar. This will only satisfy for a day or two, and must be increased until the child is satisfied—sleeping soundly until within half an hour of the next feed with possibly a drink of water half way through. At the end of a fortnight, I generally add a small quantity of an emulsion of Cod Liver Oil (Kepler's, for instance) to three of the feeds daily, to make good the fat deficit.

I have not found that the excess of casein has any ill effect on the babe. The surplus merely adding bulk to the stools—nor do I see how the kidneys can be overworked since they deal only with proteins which have been digested and assimilated.

As regards the nursing mother, I find her flow of milk can be frequently increased by a liberal supply of vegetables (omitting peas, turnips and onions—radishes and garlic are best avoided also) and copious draughts of water—fruit with the exception of mangoes. Ovaltine too is beneficial. I have never found any but a very transitory improvement with the use of lactagol. A free ingestion of fluid in the shape of water is essential—overfeeding is bad and a frequent cause of indigestion and constipation.

By the 4-hourly method of feeding, I find the infants generally thrive and put on from 7 to 8 ozs. weekly, after the first month. Regularity must be insisted upon and the infant wakened up if asleep. The child does not vomit —its digestive juices are secreted with periodical constancy—the organs concerned have timed periods of rest, and the child soon falls into the paths of discipline—to the advantage of all concerned.]

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