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She must be ready to listen to the stories of wasted and unhappy lives, the sorrows of wives and husbands, parents and children, and sympathize and comfort, putting aside herself and her own interests, that she may be better able to help. The desire to help in the right way may be as broad and unselfish as was an incident which is said to have taken place at one of the famous Mohonk Conferences, when a Catholic priest, who was a fine musician, played one of Luther's hymns, in a Quaker house, the music having been written by a Jew.

INCUBATOR BABIES *

By MARY DABNEY SMITH, R.N.

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THE first notice we have of incubators being used to any extent was in 1897 when they were brought into prominence in England. Owing to the appalling death-rate of infants in England, and in London especially, Messrs. Samuel Schenkein & Martin Coney conceived the idea of show incubators for the Victoria Era Exposition, the idea being to use them in the interest of humanity, as the death-rate from premature babies was markedly increasing. The main features of their incubators (the Altman make, a modification of the *Lion* incubators) was that they claimed they worked automatically, needing no special attention for days at a time, and most remarkable is the assertion that they were so perfectly constructed *that skilled attendance was not required*.

In the following year, 1898, Barnum & Bailey, seeing where they could better themselves financially by having a Baby Incubator exhibit at the London World's Fair, started such a show. For as long as people are interested in such exhibitions and will pay a good admission fee these institutions will flourish. The feeling of the medical profession is against the show incubators, of this there can be no doubt, therefore it behooves them to throw safeguards around such exhibits.

It is only natural for us then to inquire into the advantages that one of these institutions has to offer.

(1) It is financially equipped to give good attention to premature

* Read at a meeting of the Graduate Nurses' Association of Virginia, Richmond, February 2, 1911.

babies, as it is an expensive project at the best. It has been said that each baby at the St. Louis Fair cost the Company \$15 a day, and as money is absolutely necessary in the saving of premature lives, it is questionable whether any hospital could undertake this work unless the state gave liberal support.

(2) Such institutions act as an educational factor, bringing to mind that premature babies can be saved and not allowing them to die as a matter of course.

(3) Such institutions serve the purpose of a hospital where premature infants may be scientifically studied, and in this way our knowledge advances and our methods of rearing them are improved.

There is one objection to these exhibitions which holds good for all hospitals and asylums, namely, the death-rate of infants is much higher than in private families, the danger of hospitalism cannot be denied. Now what we mean by the term "hospitalism" in a restricted sense, is a species of intoxication found in infant asylums and is characterized by malnutrition, atrophy, and death. In another sense it has been used to designate the poor resisting power of infants to all infectious processes.

The most rigid rules must be observed to prevent infection, the incubators should be kept as thoroughly disinfected as possible. It is a good idea to wipe them out with a 70 per cent. alcohol solution every day, as the odor from the alcohol rapidly disappears, and is not harmful to the babies. Each infant should have its own thermometer, which should be kept in carbolic solution, and washed before and after using. The bottles and nipples must be boiled after each feeding. It is well to keep them in a boric acid solution when not in use. The wet nurse's nipples should be thoroughly disinfected with boric acid after each feeding, as well as before feeding, especially where she nurses more than one baby, as thrush can be transmitted in this way. It is also well to remember that the sick and well babies should be separated, but unfortunately in most Baby Incubator institutions no such provision is made.

Clothing.—Premature infants should be very warmly clothed, and it is well to remember if they are two months or under term to wrap them in a cotton and then put on a flannel shirt. Too much clothing in premature infants requires so much manipulation that it exhausts the infants, so have fewer garments and those warm. Gauze diapers, with a small piece of cotton in them, are the best to use as they can be burned when removed. By no means use a diaper a second time without washing. It is well to keep a cotton and gauze cap on babies

that are under seven months' gestation, as their little heads are soft, and they can be handled much more safely, also the caps keep the infants warmer.

Bathing is looked upon differently by different doctors. Dr. Rotch favors rubbing the infant with olive oil every 48 hours, until it gets fairly well started, while Dr. Monti, another prominent obstetrician, favors giving a warm sponge at 98° Fahr., directly after birth, and once or twice daily thereafter, claiming that it stimulates circulation and raises the temperature.

The babies at the Jamestown Exposition had a mixed treatment, I suppose, as they were given a warm bath every morning, followed by an olive oil rub. For a rapid elevation of temperature a warm bath is the ideal thing. While some doctors do not favor the olive oil rub, therapeutically at least there are two reasons why it should be given some consideration. (1) The oiled skin prevents a too rapid heat loss, acting as non-conductor. (2) It presents to some extent the evaporation of water which, in a warm incubator, should always be guarded against.

Exercise.—Even the youngest term infant would have its arms free, for this permits some motion, this assisting in the respiration and circulation. A good cry several times a day is also very beneficial, as it assists oxygenation and all premature babies should be made to cry. A good plan is to smack them under their feet, no injury will result from this you may be sure.

Food.—Where it is possible, premature babies should be fed on human milk. No substitutes, however well prepared, can take its place. Where this is not possible, a modified cow's milk is next best. The babies can first be fed with a medicine dropper and as they grow older can be put on a small nipple until they get where they can nurse the breast themselves. The milk can be drawn from the breast by a pump, or can be milked into sterile glasses, and put on ice. The quantity given at each feeding depends on the baby's age. For the first day, commence on one-half to two drachms of diluted breast milk every two hours, and increase this amount daily as it is seen the baby can take more. The stools must be very carefully watched. Should they get green, or undigested curds appear, the milk should be diminished and diluted until this trouble is alleviated.

The modified milk should be prepared so as to be as sterile as possible. In the case of most premature babies the amount of sugar will have to be lessened to suit each individual need.

I shall not attempt to give any prescribed formulæ. It is almost

impossible to confine yourself to any one, for any length of time, as the food of these babies has to be watched very carefully and changed whenever the occasion arises. Care should be taken at all times not to overfeed or have the milk too strong. Feeding the babies every two hours in the day and every three hours at night is quite sufficient, oftener predisposes to indigestion. One to five drops of French brandy, three times a day, seemed to do our babies much good. It is claimed by some that premature babies should be kept in a darkened room. Jamestown Exposition babies were in a light room constantly, and I did not see any harm from it.

Great care should be taken in conveying a premature baby from one place to another as they are very susceptible to all changes of temperature. We had a covered basket padded with cotton and gauze in which were hot water bags, blankets, thermometer, etc., that we took our babies to the incubator in, and during the whole time of the exposition never a baby died on its way to or from the hospital.

As soon as they were received at the baby incubator, a warm bath and oil rub were given them, their temperatures taken, and they were put in the incubators. The temperature of the incubators was kept from 78° to 90° Fahr., according to the prematurity of the baby. Where it was possible, the temperature in the incubators was kept as low as practical, as a high incubator temperature usually predisposed the baby of indigestion and oftentimes caused cyanosis.

It is necessary at all times to have well-trained professional nurses to look after these babies. Wet nurses should have nothing to do with the incubators or their inmates.

The artificial conditions under which premature infants are reared predispose to inanition and atrophy, even when the imperfect development of the digestive apparatus is not considered. Still there can be no doubt that the careful supervision of the nutritive processes will entirely prevent this. As to the viability of the foetus, there is little or no proof that the age of viability has been reduced by modern treatment. The youngest foetus we had live at the Jamestown Exposition was a 24 weeks' gestation. I will give you a brief sketch of this one as it may interest you.

Baby Margaret was born in Norfolk, Va., at the end of the 24 weeks of gestation. She weighed at birth 1 lb. 1 oz., she was taken to the Baby Incubator Institution, where she was kept in the incubator at a temperature beginning at 90° Fahr., and gradually coming down to 78° Fahr. for a period of five months, after which time she stayed in the nursery for six weeks and was sent home when she was 7 months

old, weighing 9½ pounds and as normal as any baby could be. For the first three months in her life she was fed with a medicine dropper, after that a tiny nipple was made for her by puncturing the rubber bulb of a medicine dropper. She is now over three years old, can walk and talk as any baby her age, and is in every way a prize incubator baby.

Should the premature baby be sent to an institution? Unless the parents be very poor the answer will unhesitatingly be in the negative. No infant should be sent to an asylum, or hospital, when its need, though imperfectly, can be fulfilled at home, and this is true of the premature baby. The results in private practice are much better than in institutions.

During the two years I spent in the Lying-In Hospital in New York, we had remarkable results in rearing our premature babies, though there was not an incubator in the hospital. They were kept warm in a cotton-lined crib with plenty of hot water bags. They had a warm bath every morning, followed by an olive oil rub, and each day they had a sun bath in the window seat for several hours. As it was always convenient to get human milk, we did not have much trouble with their food.

From careful observation made while at the Lying-In Hospital it seems that female babies have a greater endurance than males, and premature girls will live while a boy born under like conditions oftentimes dies. It is also well to note that an eight months' baby has better chances to live than a seven months' baby, although much has been said to the contrary. A good incubator can be made at home out of a basket or box, and with a thermometer, blanket, and several hot water bags, a very even temperature may be maintained. But the most difficult task in rearing premature infants is not so much in the prevention of heat loss, but in maintenance of a proper nutrition.

CARE OF THE INSANE

By E. MAUDE JONES

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THERE is no class of nursing which calls for more intelligent and careful management than the care of insane. The first point to be observed is, I think, to gain the confidence of your patient. This, in many cases, involves the display of much tact, and careful study of her patient, on the part of the nurse, for the reason that many