food or it will die. The premature baby should have one-fifth of the body-weight in mother's milk daily. Commence on one-twentieth of the body-weight the first day—do not wait three days as we do with the normal baby, but commence to feed at once. It has no reserve store to sustain life. Every day the amount should be increased until it reaches one-fifth of the body-weight. It is best given with a dropper, a spoon, or, as Dr. Chapin has emphasized, with a catheter. One may get it down in six feedings, or it may take ten, twelve or even twenty-four, but the baby must receive one-twentieth of its body-weight during its first twenty-four hours.

L. R. DeBuys, New Orleans: The principal problem we have is to maintain the body temperature, and in doing this we have to be careful not to get it too high. A plan I have used is to make a gown of two layers of Canton flannel with one layer of cotton batting between. The baby is put in this and the warmth put externally—either hot bottles or hot-water bags. Covering all is a blanket. Another point that has not been mentioned is the placing of a thermometer inside the top covering and external to the baby's gown, to which it is pinned. You can tell then whether you are giving the baby enough or too much heat.

Dr. S. M. Hamill, Philadelphia: I, also, protest against the use of the older type of incubator, and emphasize one point in Dr. McClanahan's paper that seems to me important in the case of the premature infant, namely, supplying a sufficient amount of fresh air. I have not used an incubator for some years. I have been following much the same course that Dr. McClanahan has outlined. I had an experience a year and a half ago, which demonstrated that at least one premature infant was able to breathe an air of low temperature without detriment. I had the infant forced on me in the children's ward of the Polyclinic Hospital. None of the small rooms in the hospital were then available. Being an advocate of fresh air, I kept the windows open constantly, winter and summer. Having had this child brought into that ward it became necessary either to rob the children in the ward of their usual amount of fresh air, or to keep the windows open and endeavor to maintain the body-heat of the premature infant while at the same time letting it breathe the cold, fresh air of the ward. On the principle of doing the greatest good to the greatest number, I chose the latter course, and put the baby in a specially prepared clothes-basket close to a radiator. I succeeded in maintaining the heat about the body of the baby at from 90 to 95 F., whereas the temperature of the ward often fell as low as 50 or 55 F. at night. That baby did better than any premature baby I have ever seen. I have had experience in keeping these babies in room temperature of from 65 to 70 degrees for a short time, but never before at such a temperature as that above indicated. I am not advocating this as a proper procedure, but it illustrates the fact that these babies can breathe an air at low temperature without harm.

Dr. F. B. Talbot, Boston: Concerning the conservation of energy in the new-born, the new-born baby maintains his own body-heat after birth by using up the glycogen which has been deposited in the liver. In a certain number of instances when all the glycogen is used up, the body-fat is converted into sugar, and is used in this form. If the mother's milk comes in on the third day, and often later, they may not use their own body-fat at all. Under those circumstances they do not lose weight. If it does not come until five or six days they lose a good deal of body-fat and weight. The obvious conclusion to draw from this is that if the baby has not much fat, is not well developed, is a weak baby, it must be fed early to give it energy to keep its life, and to maintain its body-heat. This discussion goes with accurate scientific measurements of heat and determination of the respiratory quotient.

Dr. F. N. Rogers, Manchester, N. H.: One point I would bring out that Dr. McClanahan mentioned in his clothes-basket arrangement is that the weight a child would lift by respiration is simply the displacement of air. When cotton batting and pads are put about the child, there is apt to be more or less weight to be displaced, which takes energy.

Dr. Henry F. Helmholtz, Chicago: In those cases with syncopial attacks during the first or second day, I have used in two cases 6 per cent. dextrose solution with excellent results. The child in one instance was practically moribund, but responded quickly to an ounce of 6 per cent. dextrose solution. That was kept up at five-hour intervals. There was no breast-milk available and the child from that time on did very well. The following day we were able to obtain some breast-milk, and the child recovered. The dextrose was administered hypodermatically.

Dr. H. M. McClanahan, Omaha: Some years ago I bought what I thought was a model incubator, and all our premature babies died about the fifth or sixth day, until I became discouraged. In all the cases I cited in my paper I was called to the home. Gavage is not as convenient there as in the hospital. The infant should not go too long without food. I believe a thermometer should be constantly present in the basket, and the temperature of the basket should not go above 90 or 95. Secondly, I emphasize, also, the danger of letting a baby's temperature go to 104, 105 or 106. In the last child I lost, one I saw an hour before it died, the temperature was 106, I believe due to the carelessness of the nurse in letting the temperature of the basket get too high. The temperature should be taken as a routine measure every twenty-four hours at least.

INTRACRANIAL HEMORRHAGE IN THE INFANT

WITH HISTORY AND NECROPSY REPORT OF A CASE

J. W. SHUMAN, M.D., SIOUX CITY, IOWA

Recently I was called to conduct a necropsy in the case of an infant succumbing to some obscure lesion, and through the kindness of the attending physicians, Drs. J. W. Flageolle and G. S. Browning, the following clinical history was obtained:

History.—Dr. Flageolle was called Aug. 18, 1914, to see baby G. W., aged 6 weeks. The child had not been well since the sixteenth, but not ill enough to need medical attention. The history was negative as to traumatism or syphilis. He found the baby irritable when disturbed. There was considerable tenderness over the lower abdomen but no distention; the mother stated that the baby cried in his sleep and also when she attempted to pick him up. There had been no spasms, the Cheyne-Stokes respiration was present, the temperature was 98.6, pulse 90, and as no bowel movement had been secured since August 16, attempts were made per enemata to empty the bowel, but without satisfactory result. The following day at 9 a. m., Drs. Browning and Flageolle examined the child noting the following: pupils unequal (left dilated, right, "pin-point"); Cheyne-Stokes respiration, clonic spasms, some cervical rigidity and Kernig's sign positive. The clinical diagnosis of cerebrospinal meningitis was tentatively entertained. Death occurred without any change in symptoms at 1 p. m., of the same day.

Necropsy.—Necropsy was held at 4:30 p. m., the same day, showed a well-nourished child, with slight bulging of the fontanelles and rigor mortis pronounced; an elongated prepuce with pin-point opening was noted. There were bluish-red discolorations on the back and left leg (post-agonal).

The thoracic and abdominal findings were negative except as to the colon, the mucous membrane of which was dotted with numerous small ecchymotic areas, extending from the ileocolic valve to the anus, with a slight membrane present, which was easily washed away.

No ecchymosis or other evidence of traumatism on the scalp or exterior surface of the skull. On incising the dura mater the brain substance exuded, denoting increased intracranial pressure. The consistency of the brain tissue was extremely soft and pulpy rendering it impossible of manipulation; the cranial bones were normal. On removing the cerebrum subdurally and left posteriorly a well organized, dark blood-clot (1½ ounces) was found compressing, but no.

attached to the brain. The brain substance was so soft that definite localizing with it was impossible; no communicating vessel could be observed. A small amount of blood-tinged cerebrospinal fluid was present; smears made from it and examined proved negative for micro-organisms; the cerebellum and medulla evidenced no abnormalities and were normal in consistency.

Pathologic Diagnosis.—Cause of death (1) cerebral pressure, due to (2) subdural hemorrhage (left posterior); (3) cause (?); (4) mucocolitis (mild).

This instance is reported to call attention to the fact that a necropsy is invaluable in checking up the clinical diagnosis and in making a correct finding of the "cause of death." The greatest interest, however, centers in the question as to the cause of the hemorrhage. As noted, there was no sign of traumatism to the head nor was there any fever to indicate acute meningeal infection or brain abscess.

Had there been severe trauma during delivery sufficient to cause hemorrhage, symptoms would have developed before six weeks, but up to that time the child had been apparently normal. With no previous derangement, as convulsions or severe coughing to increase the intracerebral blood pressure, and no traumatism to the head, the cause of the hemorrhage remains an unsolved problem.

Choyce (A System of Surgery, iii) quoting Karl Henschen (Verhandl. d. Deutsch. Gesellsch. f. Chir., 1912) states that it is only comparatively recently that the head injuries that the child is liable to during birth have received due attention from diagnosticians and surgeons and that the frequency of intracranial hemorrhage in the newborn has been observed in several long series of necropsies and results have differed considerably. Some observers have found hemorrhage in 2 per cent. of all post-mortem examinations of young infants; others in as many as 12 to 13 per cent. It is certainly far from an uncommon injury and it must be remembered that probably a large number of infants recover from it with or without persistent symptoms. The frequency of the so-called congenital and infantile hemiplegias and diplegias confirms this view.

It is further claimed that the commonest lesion is the subdural hemorrhage; laceration of the veins entering the longitudinal sinus and laceration of the tentorium are the chief sources of the bleeding. Even abnormally quick labor and cesarean sections have been followed by it. The hemorrhage usually occurs at or in a few hours following birth, but may not manifest itself for days or even weeks, clinically, and it is probable that convulsions occurring within a few weeks of birth are due to traumatic lesions of the brain. The newborn's brain is very tolerant of compression and consequently the symptoms are apt to be slight or obscure. Definite localizing symptoms are frequently, perhaps usually absent. The tendency to hemorrhage not uncommonly present, especially in syphilitic infants, is probably an important factor in many cases.

A Suggestion Concerning Passive Congestion in Rheumatism.—I desire briefly to call attention to a little procedure commonly used by surgeons with benefit in treating infections and which may be useful in the treatment of acute articular rheumatism. I refer to passive congestion produced by constriction of an extremity or otherwise. Acute articular rheumatism is a systemic infection with particular affinity for joint structures, and this procedure, which aids Nature by flooding the involved portion with Nature's own antibodies, is sound in principle. Venous congestion does more than this, however, when salicylates are being administered. The ingested salicylates exist in the alkaline blood and tissues only as salicylates, and these have no germicidal action. However, in the presence of greatly increased carbon dioxide tension, some salicylate is converted into salicylic acid, and this is a powerful germicide. It is supposed that in the congestion of an inflamed joint this conversion takes place. Thus if the salicylates do have any direct effect on the organisms causing the disease, that effect is increased by retarding the venous circulation of a part involved.—J. S. LANCASTER, M.D., Los Angeles.

Therapeutics

PREVENTION IS GREATER THAN CURE

(Continued from page 1671)

VIII

DUST

We have already briefly referred to what is now understood as pure air, and the effect of stagnant and overmoist air on the individual. The injury caused by dust or impure air, however, has not been sufficiently emphasized.

The excellent discussion of this subject two years ago by Prof. Charles Baskerville of the College of the City of New York¹ has been used as a basis for this article.

For practical purposes the impurities of the air may be divided into two classes, dust, and fumes or gases. In the cities the dust contains pulverized excreta of human beings and animals, the material which is constantly being worn from the buildings and pavements, the waste from houses, stores and factories, micro-organisms, leaves, remains of fruit, and other parts of plants and trees. It is interesting to know that the air of subways contains many minute angular particles of iron.

In the country the dust consists to a larger extent of particles worn from the road. The substances of which the road is composed are more or less pulverized by the traffic. This dust is especially increased by heavy carts and automobiles. The country roads are disintegrated in part by the frosts of winter, in part by the wind, by the action of the falling rain, and by the transporting power of water. Oiled roads, as soon as they dry, give rise to particles of crude, irritant tar-oil which are wafted with the dust.

These components of the dust are all more or less irritating, not only to the mucous membrane of the respiratory tract, but also to the eyes. When the amount of dust is small the irritation may be slight, but when the amount of dust is large and when there is a considerable amount of tar-oil present, the irritation may be very troublesome.

The prevention of this dust is accomplished by care in the building and in the maintenance of the roads. The best structure for a roadbed and top dressing must be decided by the region, by the variations in climate, by the geography of the locality, and by the character of the traffic. There is doubtless no one best roadbed.

There is no question of the necessity for a city to water its streets. There, also, seems to be no question of the advantage of oiling turnpikes and country roads, if they are built of material that allows of oiling. Whether or not a city should oil its streets is a subject for discussion.

Baskerville suggests as a suitable disinfectant and agent for the diminution of dust a very dilute chlorinated lime solution. The chemical is cheap, and any outlay entailed would be more than covered by the decrease in dust-borne diseases. He also calls attention to Dr. Nesbit's work in ridding Wilmington, N. C., of flies by sprinkling the streets five times with an attenuated mixture of water with light pine-oil. An incidental effect of the suppression of the flies was the stamping out of a typhoid fever epidemic.

1. Baskerville, Charles: New York Med. Jour., Nov. 23, 1912, p. 1061 and Nov. 30, 1912, p. 1119.