

up and the child would only sleep a few minutes at a time. At the end of this time the bromide was stopped, and a single dose of five grains of chloral produced a sleep of ten hours, with the most happy results. In the convulsions of whooping cough the combination of bromide with chloral seems to give the best results; the bromide diminishing the quantity of blood in the brain, and the chloral relieving the spasm and producing sleep. If the child is much exhausted, along with these agents stimulants should be given, preferably alcoholics. Convulsions coming on in the course of any disease and depending on cerebral exhaustion are best controlled by stimulants. They are indicated in such diseases, particularly if there be a tendency to failure of heart-power. In the exhaustion which comes on in the course of a severe attack of summer diarrhea of children, convulsions are not infrequent. In such cases the stimulants need not be limited to alcoholics. Musk and camphor often do more good even than alcoholics.

Many cases of convulsions depend on elevated temperature. Some children's nervous systems are much more disturbed by elevation of temperature than others. I have seen children with a temperature of  $105^{\circ}$  with less constitutional disturbance than another with a temperature of  $102^{\circ}$ . Children will, as a rule, tolerate a high temperature much better than adults. Frequently no other cause can be found for the convulsion than the febrile movement. In such cases, quite recently the veratrum viride has been used most successfully. In its physiological action, not only is it a powerful vascular depressant, but it very decidedly diminishes the irritability of the spinal cord. From the reports of it thus far, in the treatment of convulsions in children, it is destined to a much more important place and more frequent use than it has hitherto had. It has one objection: it is liable to produce vomiting. But this can be to a great extent overcome by combining with it small doses of opium. I am able to testify to the good results in cases of convulsions where I have used the veratrum. Children tolerate relatively larger doses of the veratrum than adults. A child of six to eighteen months may be given two drops of the tincture every hour; and even if it does produce vomiting, it need not give alarm, because almost invariably when the vomiting occurs the temperature falls and a pulse diminishes in rapidity and the convulsions cease. If the temperature remains high and the veratrum fails to control the convulsions, then the cold bath is indicated. Uoma is quite frequent with the convulsions in these cases of high temperature. The child is in imminent danger unless the temperature be soon reduced. Nothing is equal to the cold bath for this. As in other cases of high temperature, the fever must be brought down and kept down by the bath. I

have named one more remedy—calomel. When a convulsion occurs at the beginning of an acute disease, or occurs in the course of an acute disease of the respiratory organs, I would give calomel; but in order to get its good effects a large dose must be given, that is, a sedative dose. To a child from one to three years of age give five grains. It usually produces not more than two to three evacuations from the bowels, and acts as a direct sedative to the nervous system. It will in many cases reduce the temperature, arrest the convulsive movements, and produce sleep. Along with the calomel, the veratrum viride is indicated; and if these two fail to reduce the temperature, the cold bath should be used.

In large cities, one cause of convulsions in children is heat stroke. It is responsible for many deaths from convulsions. As in the adult, so in children there are two forms of heat-stroke: one form is characterized by a very rapid and full pulse, great elevation of temperature, marked redness of the face, dilated pupils and hot head. The cold bath is always indicated in this form, and unless the temperature is quickly reduced and kept down, death will ensue rapidly. I believe if the cold bath were more quickly and boldly used, many cases of this kind might be saved. The other form of heat-stroke is characterized by a rapid but feeble pulse, very little elevation of temperature, great pallor of countenance and usually quite profuse perspiration. This form is much less frequent than the first. The indications are to combat nervous exhaustion. This can be best done by stimulants.

With a view to ascertain if the records of the Board of Health, of this city, contained any facts bearing directly on this subject of the influence of heat-stroke in the production of convulsions in children, I consulted them. Although they did not contain any positive facts bearing on the question, I was informed by Dr. Nagle that the mortality from convulsions during the hot summer months was greatly in excess of that during the remainder of the year. I will give some of the facts which I did ascertain from those records.

During the six years from 1871 to 1876, there died from convulsions of children under one year of age, 3,392. From one to two years of age, 686. Making a total under two years of age, 4,078. These were all cases in which the death certificate simply read "convulsions," without including those in which a cause for the convulsions was given.

In 1878 there were 478 under 1 year.

1879 " 515 "

In these six years from 1871 to 1876

the total number of deaths among

children under 1 year was.....51,452

Over 1 year and under 2 years.....17,810

Total under 2 years.....69,262