

that has not been impressed on the urban communities forcefully enough. That, to my mind, is the keynote of health work in rural districts. The centers where wealth is concentrated must reach out and help build up the less fortunate part of the state and nation. I have been twitted by my confrères from time to time for taking everything in sight from the International Health Board for Alabama. I have no apologies to make for it. New York City, with all its wealth, is reaching down into Alabama and actually giving us its money. The only thing it asks is proper accounting and proper investment in public health work. The United States Public Health Service and the International Health Board have made the state board of health of Alabama possible. They have given us money and lent us trained personnel. They have helped us to build the best health organization in the country, having anticipated in action the suggestions outlined in Dr. Ferrell's paper.

DR. J. A. HAYNE, Columbia, S. C.: The problems brought out by Dr. Ferrell have given us extreme concern. We feel in South Carolina that the county is the proper unit for government. We feel that the reason the health officers of the states passed out and new health officers took their places, was probably that these health departments had not found, or built health organizations on a rock. Probably they built on shifting sand, but in South Carolina we built on a rock. We have the finest health officers in the United States.

DR. SAMUEL STALBERG, Atlantic City, N. J.: Having practiced in a city and subsequently in a rural community, the contrast of control of communicable diseases in the two communities is very striking. I was especially pleased by the attitude taken by Dr. Ferrell and the other speakers that the subject of health control in rural communities should be made a matter of public concern. Possibly some of the conditions cannot be remedied; some of them probably can, but two years ago the following incident occurred in my practice in western Pennsylvania: A child who had been under treatment for laryngeal diphtheria died after forty-eight hours' treatment. There was a public funeral, open house; there was a school right across the street. The school children came in after school to view the body, and there was a church funeral. The place was never placarded. I reported the occurrence to the Pennsylvania Board of Health, with a view of preventing future occurrences of this kind, but no satisfactory action was taken. The health officer in my particular district had 15 or 20 miles to travel from where I lived; when a case was reported it would take two or three days in winter to travel by buggy over the snow before he could come to placard the house. It seems to me that this condition could be remedied, to a certain extent at least, by plans such as Dr. Leathers has expressed, where it could be made the concern of the body politic. Also in the case of a skilled medical inspection. I happen to have done school medical inspection both in Philadelphia and in the community mentioned above. In Philadelphia the medical inspector visits the school every day and each child is given a complete physical examination. A complete physical examination is also given to the rural child, but the follow-up is practically negligible, whereas in the city it is at a high standard of perfection.

DR. JOHN A. FERRELL, New York: It may be worth while to call attention to the discussion of Dr. Harris' paper. It emphasizes the fact that Chicago and other cities have a very real interest in health conditions on the eastern shores of Maryland and Virginia, and these sections, in turn, are interested in the cities as markets for their products. Although I designated the state as the political unit which might serve as the basis of territory in which to equalize facilities, many aspects of health service are interstate and even international. Accordingly, in dealing with many features of health work, the nation might properly be adopted as the unit in which to equalize health facilities.

Dysentery.—Protozoal dysentery . . . can be caused by two species of protozoa only. The commoner of these is the rhizopod *Entameba histolytica*, the other, the ciliate *Balanidium coli*.—Haughwout.

THE SPINAL FLUID IN THE NEW-BORN

WITH ESPECIAL REFERENCE TO INTRACRANIAL
HEMORRHAGE*

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The study of the spinal fluid in the new-born has attracted little attention until quite recent years. Indeed, when this study was begun, I was in doubt as to the true nature of the normal spinal fluid immediately after birth, and for this reason attention has been focused with equal interest on normal as well as on pathologic specimens.

This work was carried out in the new-born service of the Grady Hospital, Emory Division, a hospital for the treatment of negro patients. It was begun primarily to study intracranial hemorrhage in the new-born, and to determine, if possible, the true significance of this condition. Coincident with these investigations, certain observations regarding the nature of the normal spinal fluid in these infants have been made and will be briefly reported.

A total of 423 babies has been studied. A lumbar puncture was done on every infant without regard to the character of labor or the condition of the child at birth. The first hundred fluids were examined by routine for their cellular content and Wassermann reaction. In the last 327 cases, the blood drawn from the longitudinal sinus has been studied for its pigment content and Wassermann reaction. This group of cases presents interesting data, not only from the standpoint of hemorrhage but also from that of Wassermann reaction, since each patient had had the test for syphilis done on the cord blood, blood from the sinus, spinal fluid and blood from the mother.

It has been my practice to perform the punctures as soon after birth as possible, the great majority being studied within the first twenty-four hours. On many of these patients a subsequent puncture was done on the day of discharge, usually about the ninth day of life, and a few punctures have been done again as late as the fourth week.

The needle employed for the lumbar puncture is 1 inch long, 20 gage, with a stilet similar to that of the larger needle used in adult work. The tissues are of such delicate structure that it is essential that the needle be as small as possible; for most babies, three-fourths inch would be sufficient length, but occasionally one is encountered requiring the entire shaft of an inch needle.

For withdrawing the blood from the longitudinal sinus, a sharp, short beveled, 20-gage needle, three-eighths inch in length, was used. The posterior angle of the fontanel in the midline is preferable for this puncture, as here the sinus is more easily located. Occasionally the sinus is transfixed in spite of all precautions; however, I have never seen any ill effects from this accident.

The routine examination of the spinal fluid for cellular elements gave data of no unusual interest. The average cell count was 6.3 per cubic millimeter, the highest being 17, which occurred in a fluid giving a 4 plus Wassermann reaction, the lowest recorded being 2. The majority of fluids showing a positive Wassermann

* Read before the Section on Diseases of Children at the Seventy-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., May, 1925.