

0.1 cubic centimeter of guinea-pig's serum was added. To a second tube similarly prepared, besides complement, "syphilitic antigen" was added at the same time. In a third tube, 0.02 cubic centimeter of syphilitic serum, 0.1 cubic centimeter of complement and "syphilitic antigen" were put together. A fourth tube similar to the third but without "antigen" was also prepared as control. These were incubated for one hour at 37° C. and then one cubic centimeter of a one per cent. suspension of washed human corpuscles and two units of anti-human amboceptor (rabbit) were put into each tube. After further incubation hemolysis was observed in all but the third tube. A further analysis revealed that the precipitate formed by syphilitic sera and anti-syphilitic serum fixes the same amount of complement as that by a normal precipitate, *but the complement-binding property of the syphilitic serum in the presence of "syphilitic antigen" disappears after precipitin reaction takes place.* This phenomenon was found to be non-specific, as the antiserum for normal or leprous serum also caused a similar phenomenon. A positive reacting leprous serum could be made negative by any of the antisera in the same manner. No differentiation could, therefore, be made by the use of specific antisera between syphilitic and leprous sera both giving positive Wassermann reactions.

There is a close relation between the precipitin reaction and the disappearance of the Wassermann reaction in syphilitic and leprous sera. A precipitin-containing serum for human serum should not be employed as amboceptor in doing the Wassermann reaction by my system. To insure against this danger, the amboceptor should be produced by injecting rabbits with thoroughly washed human corpuscles.

12 (422)

The energy metabolism of parturient women.

By **THORNE M. CARPENTER** and **JOHN R. MURLIN.**

[From the Nutrition Laboratory of the Carnegie Institution of Washington, Boston, Mass.]

Experiments designed to compare the energy metabolism of mother and child just previous to and immediately following parturition were carried out with the bed calorimeter. Three subjects

were secured through the out-patient department of the McLean Lying-in Hospital. They were cared for in the New England Deaconess Hospital near the laboratory and were kept on a carefully regulated diet, which, except for the day of parturition and one or two days thereafter, was essentially the same throughout for each case. Early in the morning before breakfast was taken, the subjects were brought to the laboratory (in an ambulance when necessary) and were placed in the calorimeter for periods of two or three hours during which hourly determinations of the carbon dioxide output, the oxygen absorption, the heat elimination and the heat production were made.

The heat production was calculated also by the Zuntz method from the amount of nitrogen in the urine, the carbon in the expired air and the oxygen absorbed. A very satisfactory agreement was found between the two methods.

Two of the subjects were primiparæ and one was a multipara. In both primiparæ, the heat production of mother and child was found to be slightly larger just previous to parturition than it was after the temperature had returned to normal following parturition. In the multipara, it was slightly higher following parturition than before. The results, therefore, are in sharp contrast with results obtained by one of us¹ on the dog where the heat production as calculated from the excreta was very much greater following birth of the young.

The heat production of the mother alone was obtained by direct determination and that of the child by difference. The three cases agreed in showing a heat production per kilogram per hour for the child approximately two and a half times that of the mother under the same conditions.

¹ *Proceedings of the American Physiological Society*, 1909, xxiii, 32.