that the presence of circulating antigen in the blood be determined either by titration of its complement[1] or by antitryptic index,[2] and finally that the serum containing the circulating antigen be properly preserved and injected into patients between the anaphylactic attacks. The time of injections will be determined by antitryptic index, as the animal experiments have shown that such injections give best results at the time when antitryptic index is lowest.

ABSTRACTS OF THE COMMUNICATIONS, PACIFIC COAST BRANCH.

Fifteenth meeting.

San Francisco, California, December 6, 1916.

40 (1218)

Note on a toxic nucleoprotein obtained from rat carcinoma.

By THEODORE C. BURNETT.

[*From the Rudolph Spreckels Physiological Laboratory of the University of California.*]

Flexner-Jobling rat carcinomata of the strain used by Robertson and the author[3] were ground in a mortar with sand, extracted with M/6 NaCl solution, filtered and centrifuged to remove all foreign particles. The supernatant fluid was poured off, diluted with ten times its volume of NaCl solution, and CO_2 allowed to bubble through it for half an hour. A flocculent precipitate which settled in a few hours was the result. Phenol was added to make the suspension 0.5 per cent.

The original problem was to ascertain if such a substance, assumed to be cell globulin, would prove to be specific, using complement fixation as a test. An attempt was made to immunize a rabbit by intravenous injection, but the rabbit died within five

[1] Bronfenbrenner and Schlesinger, in press, these *Proceedings*.

[2] Bronfenbrenner, PROC. SOC. EXPER. BIOL. AND MED., 1915, xiii., p. 42.

[3] Robertson and Burnett, *Jour. Exper. Med.*, Vol. 21, 1915, p. 281.

minutes after the injection of 3 c.c. (about 50 mgm. dried substance) on the third day. In another rabbit 4 c.c. intravenously proved fatal in ten minutes. In another, 2 c.c. on the first day were without effect, but the following day 2 c.c. caused death promptly. The symptoms are convulsions and cessation of respiration before the heart beat. Immediate post mortem reveals nothing distinctive. In one case there were punctate hemorrhages in the thymus. Others have been negative. There is no intra-vascular clotting, but on the contrary the blood from the heart remains fluid for over an hour.

Intraperitoneal injections do not result fatally, but seems to affect the animal seriously with loss of weight and a generally poor condition of nourishment. Not enough work has been done, however, to be sure on this point. At any time during the intraperitoneal injections, an injection intravenously will promptly cause death. One attempt at immunization proved negative to complement fixation.

What has been said of rabbits is also true for white rats, excepting that intra-peritoneal injections make them sick for an hour or so, after which they recover.

As to the substance itself, it is tentatively assumed to be a nucleoprotein. It is weakly positive to the Biuret test, but the color develops slowly. It is negative to the xanthoproteic, positive to the Adamkiewicz and Millon's. It gives a positive test for pentoses with orcin. It is practically insoluble in water and 5 per cent. NaCl, but dissolves readily in tenth normal NaOH. The presence of a pentose places it in the group of nucleoproteins and as it is toxic and probably non-antigenic it behaves like a nucleohiston. Many questions at once suggest themselves and they will be discussed in a later communication. Meanwhile work on the original problem is being carried on.