

advisable, but one must see to it that the patient lies down immediately after the operation and for the rest of the day. The amount of fluid withdrawn should never exceed ten c.c. at the most. The operation should never be performed if there is reason to suspect the presence of a tumour of the brain.

A great number of physical and chemical properties of the fluid may be investigated, but in routine practice it is only necessary to study three features, the pressure, the proteid content and the cells present. The pressure is almost constantly raised in cases of general paralysis, frequently to four times the normal. The *proteid content* is always increased. The simplest way of determining this is by means of the ordinary Heller nitric acid test, applied as in urine testing. The extent of the increase can be fairly well gauged by the density of the ring formed at the junction of the two liquids, or by the time necessary for the formation of it when the fluid is diluted. The fact that this increase in the proteid content of the cerebro-spinal fluid is a constant feature in general paralysis was first demonstrated by Babcock of New York in 1896, though it was not until the publications of several French workers in 1903 that general attention was called to it. The proteid in normal cerebro-spinal fluid is probably globulin only, and it does not exceed half a gramme per litre. In general paralysis the amount is frequently four times this, and the proteid consists of both globulin and albumin, rather more of the former than of the latter. A matter of special theoretic interest is that the globulin is of a special kind; one of the varieties of euglobulin, and it has recently been shewn that it is this euglobulin which carries the peculiar Wassermann anti-body, of which we shall speak in a moment. Many methods have been employed for demonstrating this increase in euglobulin, but I will mention only the two which in my opinion are of the most service for this purpose. These were first described a few months ago, one by Noguchi, of New York, and the other by G. W. Ross, of Toronto, and