is required, the patient curves the body forward in order to obtain the greatest posterior convexity of the spinal column possible; in the case of a child, it is held across an attendant's knee. The needle may have to pass in from 2 to 8 c.m. to reach the fluid. The manometer shows that the normal pressure in an adult is 150 m.m.; Quincke found it sometimes to have reached 680 m.m. The fluid should be allowed to flow slowly, aspiration causes headache, Fürbringer has removed as much as 110 c.c. at a time; strict antisepsis must be observed, and when the needle is removed cover with iodoform collodion.

Its use has been followed in most of the instances by only temporary amelioration of the symptoms. Continuous drainage to remove toxines and micro-organisms, as well as relieve pressure, has been employed by Sahti and Wynter. Dr. Jacoby suggests puncturing the lateral ventricle, and placing a drainage tube and flushing out the entire cavity from the lumbar puncture with a boric acid solution. The employment of this method as a therapeutic means has been very disappointing in its results, but as a diagnostic measure it is of great utility. The fluid normally is quite transparent, colorless, alkaline, no histological elements, sp. gr. 1.010, albumen traces or none, and a substance like dextrose. The points to be observed in an examination are: 1. The pressure under which this fluid stands. 2. The presence and amount of albumin and sugar. 3. The presence of foreign substances in the fluid: (*a*) blood; (*b*) pus; (*c*) micro-organisms of various nature, particularly tubercle bacilli.

The degree of pressure is roughly estimated by the rapidity of the flow. The amount of albumin is important; it is increased in meningitis 1.6 per cent., in brain tumors only 0.4 to 0.8 per cent., so that over 1 per cent. of albumin favors a diagnosis of meningitis. The proportion of albumin increases after repeated punctures. Sugar is found regularly in tumors, and exceptionally in tubercular meningitis. Coagulation occurs more readily in meningitis than in the fluid, in brain tumor, purulent cerebro-spinal meningitis is readily diagnosticated by finding the streptococcus pus in the spinal fluid. Lichtheim found tubercle bacilli in 4 out of 6 cases of tubercular meningitis, and what might not be expected, the experience of Jacoby, Lichtheim and Fürbringer shows that the tubercle bacillus is found in the great majority of cases of tubercular meningitis; some care is required to find them, sometimes requiring repeated examinations. Dr. Jacoby states that the tubercle bacillus may be found in the cerebro-spinal fluid before grave cerebral symptoms appear. This method is a positive guide as to whether a case is one of tubercular meningitis when we find the bacillus; purulent meningitis when the fluid will be turbid, containing staphylococci, streptococci, or pneumococci; brain abscess when a clear fluid is found without micro-organisms of any kind. In cases of ventricular hæmorrhage blood has been found in the spinal sac. Care must be taken not to mistake local hæmorrhage at the