

cells nor fibrin, and is perfectly clear. In cases of meningitis the cerebro-spinal fluid is invariably clouded with fibrin; the degree of cloudiness is, to some extent, proportionate to the amount and character of the exudation in the meninges; it is sometimes so slight that close observation is necessary to detect it. This cloudiness is due to cells, the character of which differs with the form of meningitis. In cases of tubercular meningitis, the cells are chiefly small round cells, with a single nucleus, and very little protoplasm, resembling the lymphocytes found in the blood. Tubercle bacilli can only occasionally be detected. In purulent meningitis, the polynuclear leucocytes are very numerous, and the small round cells comparatively few in number. In epidemic cerebro-spinal meningitis, the specific micro-organism is almost always to be found, especially during the early stages of the disease. Occasionally the fluid withdrawn may be mixed with blood; this condition may be simply accidental, and due to the puncture itself, or it may be due to meningeal or ventricular hemorrhage. The former may be excluded, when repeated punctures bring forth a fluid showing the same quantity of blood. Positive conclusions, however, can only be drawn from positive, and never from negative, results of lumbar puncture. The operation, although a comparatively simple one, requires the strictest antiseptic precautions on the part of the operator; an antitoxin needle is preferable to the ordinary hypodermic syringe, as it is less liable to break and has a larger lumen, but aspiration is never necessary. Should the fluid not run well, a sterile wire may be passed through the needle *in situ*. The puncture is to be made, either between the 2nd and 3rd, or between the 3rd and 4th lumbar vertebra; with the left thumb marking the interval, the needle should be entered either directly in the median line, or about a centimeter to either side of it. At the depth of about  $\frac{1}{2}$  cm. in children, and 7 or 8 cm. in adults, the needle passes through the membranes, and the fluid oozes out. The pain given appears to be slight. If the needle does not enter the canal, or if it feels as if the point were not free, the needle should be withdrawn for a short distance, and then reintroduced. Lateral movements of the needle may give rise to a hæmorrhage, which would obscure the character of the fluid. General anæsthesia is quite unnecessary, but the local anæsthesia produced by ethyl chloride may be employed.

#### ANTIPEPTANIC SERUM IN THE TREATMENT OF TETANUS.

It would seem that serum therapy might almost claim another victory in the treatment of tetanus. This painful and fatal disease, that has for a very long time baffled the long and varied list of therapeutic agents that have been directed against it, must now yield to the steady patient labours of modern scientific medicine. It has been robbed of its terrors