

marked positive reaction. It is known that there is an excess of proteid in the cerebro-spinal fluid in no chronic disease of the nervous system apart from syphilis, and that agrees with our findings. In cases of acute infection, on the other hand, there is often an excess of proteid present, whatever be the nature of the infection. This was so, for instance, in the only case of this kind—one of tuberculous meningitis—that we have been able to examine.

The ammonium sulphate ring test was applied in all of the above cases except two of tabes. The results agreed absolutely with those obtained by the Noguchi test, being positive whenever this was positive and negative whenever this was negative, so that the list of cases need not be repeated. The amount of proteid present in normal cerebro-spinal fluid is insufficient to give a ring with ammonium sulphate, though it commonly gives one with pure nitric acid. In general paralysis the amount is increased tenfold, and far exceeds that reached in any other disease, except, of course, acute meningitis. In the differentiation of general paralysis from syphilis with no nervous manifestation, we would rely not on the mere excess of proteid in the former, for that occurs in both conditions, but upon the striking *extent* of the excess. This can be roughly estimated with the ammonium sulphate ring test in three ways—by noting, first, the density of the ring; secondly, the time that elapses before its appearance, and, thirdly, by the dilution with which it appears. The last point has greatly interested us, particularly, however, in connexion with the globulins of the blood serum in syphilis, a matter with which we are not here concerned. Our observations on the point are as yet incomplete, but it would seem that we have in the dilution test a means of readily estimating the amount of globulin present, and, therefore, the degree of certainty of the diagnosis. We have several times, for instance, obtained a positive reaction in fifteen minutes after diluting the cerebro-spinal fluid eightfold, a phenomenon that certainly never occurs in the normal.