pression was so complete in 8 of the 9 specimens experimented with, that barium chloride, even in solutions of 1/1000, had no effect on the intestine.

Two per cent suspensions of fresh poliomyelitis virus in normal saline solution also caused the same depressant action on the intestines of each of the 6 animals tested.

6801

Agglutinin Titer Value Changes in Blood Serums of Monkeys Experimentally Infected with Poliomyelitis Virus.*

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Blood serum of human beings convalescent from poliomyelitis has a higher agglutinin antibody titer for various enteric organisms than has human serum that is taken from the same patient at the onset of the illness.[1] Was this increased titer found in convalescence a new acquisition and the titer found at the height of the disease the normal titer level, or was the titer in convalescence merely a return to a normal level after a temporary decrease that occurred at the height of the disease?

The normal blood serums of twelve 4 to 8 pound *Macacus rhesus* monkeys were tested and found to be rarely higher than 1:80 in agglutinin titer for the several enteric organisms used (*B. typhoid*, paratyphoid A and B and various *B. coli* organisms). The monkeys were then injected with a mixed vaccine of killed typho-coli-paratyphoid organisms in increasing doses together with a mixture of toxins produced by growing the various organisms in broth for 10 days. These injections were given in small doses at intervals of from 4 to 7 days for a period of about 42 days.

After a rest interval, the blood serums were tested and were found to have an agglutinin titer of 1:640 at least and occasionally a titer of 1:2560 for the various enteric organisms used.

The animals were then injected intracerebrally with virulent poliomyelitis virus. It was found that with the advent of paralysis in the

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[1] Toomey, John A., in preparation.

animal the enteric agglutinin titer dropped sharply; with complete prostration and palsy, the titer value was reduced to 1:10 values and often to zero.

6802

Relationship Between Chloride Content and Blood Cerebrospinal Fluid Bromide Ratio.

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In previous investigations attempts were made to determine whether there were any relationships between the amounts of various substances contained in the blood and cerebrospinal fluid and the distribution ratio in these two fluids of bromide administered and determined by the Walter method. Of these substances, the chloride salts, by virtue of the very close relation that exists between them and bromides, were the first to attract our attention in this respect. It has been shown that the blood chloride content is lower than that of the cerebrospinal fluid (the ratio being about 0.80 to 1). Furthermore, in the cases of mental disease that we have been investigating, this ratio fluctuates within narrow limits. Our first investigation, then, was to determine whether there was any direct relation between these fluctuations and that of the bromide distribution. Such a relation could not be found to exist. In a series of cases of manic depressive psychosis we found a variation of the chloride ratio between 0.79 and 0.89, but this fluctuation did not bear any direct relationship to the changes in the bromide ratio.[1]

The technique of our method of determination of the bromide ratio, however, introduced a new factor, the fact that the blood serum had to be diluted with 2 parts of water before it could be compared with the spinal fluid, since the bromide content of the blood is usually about 3 times that of the spinal fluid. In previous investigations we have used distilled water for this purpose, but this meant that the chloride content of the diluted serum was brought down to one-third of its original content. The blood chloride content is usually about 0.6%, and the question arose, whether the

[1] Rothschild, D., and Malamud, Wm., *Arch. Neurol. and Psychiat.*, 1931, **26**, 829.