membrane and brain. A 10% suspension of this organ in broth was infectious for mice.

Conclusion. The Japanese encephalitis virus and the St. Louis encephalitis virus produce the same type of changes in the chorioallantoic membrane and in the brain of the chick embryo. The two viruses multiply in the egg to approximately the same titer as demonstrated by mouse inoculation. Whether these observations imply more than a similarity of action of the two viruses is not clear from data available from this study.

10661 P

Contractions of Frog's Gall Bladder and Its Possible Use as an Assay Method.

LLOYD D. SEAGER. (Introduced by John Auer.)

From the Department of Pharmacology, St. Louis University School of Medicine, St. Louis, Mo.

Contraction of the frog's gall bladder can be readily demonstrated by the intracardiac injection of crude secretin. The frog's gall bladder is usually bluish green, moderately full of bile, pear-shaped, flabby, and is easily observed when the abdomen is opened. After the intracardiac injection of a dilute secretin preparation, there is a latent period of 15 to 100 seconds; the gall bladder then changes to a rounded spherical form, and the organ develops a slight or marked opalescence; the surface may also show a slight or marked puckering; blood vessels over the surface may become tortuous; apparent volume changes may at times be noted. After 2-10 minutes, the surface again becomes smooth, opalescence disappears, and the bladder becomes flabby.

The ease with which the above could be duplicated suggested its use as an assay method for substances contracting the gall bladder.

A number of preparations have been compared using the following procedures as standard. Active dark colored male frogs weighing 25-35 g were selected; the cerebra were crushed, the cords pithed, and the animals pinned out on frog boards; the feet of the frogs were elevated 1-2 inches above the heads and the gall bladders were exposed; the blood flow to the gall bladder was directly observed microscopically and only preparations were used which showed a good circulation.

Secretin powder S I, (Ivy) which is relatively stable, was used as a standard.

A unit has been arbitrarily defined as the amount of gall bladder contracting material present in 0.2 cc of solution which, when injected intracardially into 30 g frogs, brings about contraction in 50% of 30 experiments.

The activities of 3 crude secretin preparations from dog duodena and a powdered cholecystokinin, prepared according to Ivy's pH 1802 method, have been compared to the standard S I powder. The powders were used in strength of 0.030, 0.025, 0.020, and 0.015% for the S I and 0.1 and 0.2% for the cholecystokinin. The crude secretin preparations were used in dilutions of 1:30, 1:25, 1:20 and 1:15. It was found that 0.2 cc of a 0.020% S I solution gave contraction in 47% of 32 experiments. Cholecystokinin powder in 0.1% solution gave contraction in 19% of 16 experiments while in a 0.2% solution, it gave a gall bladder contraction in 80% of 20 experiments. The crude secretin preparations A, A_1, and B in a dilution of 1:25 gave gall bladder contractions respectively in 50% of 8 experiments, 56% of 32 experiments, and 47% of 30 experiments. Converting these results into terms of units, 1 mg of S I would be the equivalent of 25 units. 1 mg cholecystokinin would be the approximate equivalent of 3 units. Undiluted secretin preparations would contain the equivalent of approximately 125 units per cc or the equivalent of 5 mg of S I per cc.

10662 P

Immunization of Mice by Intranasal Instillation of Nasopharyngeal Washings from Cases of St. Louis Encephalitis.*

S. E. SULKIN, C. G. HARFORD AND J. BRONFENBRENNER.

From the Department of Bacteriology and Immunology, Washington University School of Medicine, St. Louis, Mo.

The 1937 outbreak of encephalitis in St. Louis afforded an excellent opportunity for further study of the disease. Despite the fact that the virus of encephalitis has never been demonstrated in nasal secretions procured from patients during the acute phase of the

* This work was made possible by a grant from Special Fund for the Study of Encephalitis.