In our own studies we used guinea pigs averaging about 400 grams in weight and sensitized by subcutaneous administration of 0.05 c.c. horse serum. The atropin was injected intravenously five minutes before the toxic dose of horse serum which also was administered into the jugular vein.

The study shows that as the toxic dose of horse serum is increased the protecting dose of atropin must also be increased, but the increase in protecting dose is not proportionate to that of the horse serum. The curve of protecting dose rises much more sharply than that of horse serum and finally a point is reached where the animal succumbs to the dose of atropin. A 400-gram guinea pig is killed almost instantly by a dose of 0.060 gram atropin.

That the effect of the atropin is physiological and not due to any alkaloidal combination with the toxic fraction of the horse serum is shown by the fact that a mixture of atropin and horse serum incubated at 37° C. and dialyzed for four days killed sensitized animals whereas a control in the same proportions but not dialyzed saved the animals from anaphylactic death.

66 (591)

The effect of specific vaccines in the typhoid of rats and mice.

By **EDNA STEINHARDT** and **THOMAS FLOURNOY.**

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Owing to the impossibility of infecting small laboratory animals by feeding with typhoid bacilli, the immunity produced by specific vaccines has always been tested by subcutaneous or intra-peritoneal inoculations of the living culture.

These methods do not produce a disease comparable to human typhoid, but when rats and mice are fed with certain of the paratyphoid group they contract a disease whose pathology does closely resemble it; therefore these were used for the comparative study of the vaccines. The Danysz virus (one of the Gaertner group) was the test organism.

White mice were used in the first series and the vaccines tested were killed cultures, Vaughan's residue, sensitized bacilli (Bes-

redka's vaccine) and protective inoculations of serum, all the injections being given subcutaneously to make them more comparable with those in man. When later, these vaccinated mice were fed with living cultures, no protection was shown, sickness usually fatal occurred exactly as in the untreated cases. After an interval, all of the mice that recovered were re-fed with the living culture and all contracted the disease again, showing that no immunity had been established.

Rats being less susceptible than mice, the experiments were repeated upon them. The vaccinated animals when fed with living cultures were not protected but those which had been previously fed with small doses of the living virus, were completely immune to subsequent feeding with large doses. Experiments are now being carried out to see if these rats are also immune against intra-peritoneal and sub-cutaneous inoculations and if it is a strictly specific immunity.

Experiments on treatment, specific and otherwise, gave negative result in mice; in rats the investigations are still being carried on.

67 (592)

The relationship of the left suprarenal capsule to the sugar production of the liver in dogs.

By **J. J. R. MACLEOD, C. D. CHRISTIE** and **R. G. PEARCE.**

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We have obtained certain results bearing on the relationship between the left suprarenal capsule and the left splanchnic nerve-control of the glycogenic function of the liver which, in view of the topical interest in this subject, we believe it well to report at present, especially since it will take some considerable time to complete the investigation of which they form a part. The percentage amount of reducing substance in the blood of the inferior vena cava, opposite the hepatic veins, was determined by Reid's method at varying periods after stimulation of the left splanchnic nerve. In the first series of results given in the table the left suprarenal capsule was intact; in the second series this gland was excised.