

result in the production of distinct mental symptoms and in the partial excretion of the substances into the gastrointestinal tract. The disturbance induced by such substances is capable of producing nausea and vomiting.

- 45 (137). "**The formation of urea**": **L. B. STOOKEY** and **A. S. GRANGER**. (Presented by **R. A. HATCHER**.)

Subcutaneous injection of liver-extracts (dog) was found to lead, in the dog, to an increased elaboration of nitrogenous end-products into urea. Liver extracts which had been heated to 55° C. failed to manifest this stimulative action. These results might indicate an enzymatic formation of urea. Further experiments are in progress.

- 46 (138). "**The effects on embryonic development of the Röntgen rays acting on the spermatozoa of the toad previous to fertilization**": **C. R. BARDEEN**. (Presented by **EUGENE L. OPIE**.)

Experiments have shown that spermatogenesis may be inhibited by exposure to the Röntgen rays or to radium. The direct action of the rays on the spermatozoa has not, apparently, been studied. It occurred to the author that it would be interesting to see if spermatozoa could be injured by the Röntgen rays and, if so, what the effect would be on the development of ova fertilized by spermatozoa thus affected. During the short breeding season of the toads in the vicinity of Madison, Wisconsin, the author collected daily several pairs of toads, separated the males from the females, and from the males got enough sperm to make a slightly cloudy suspension in water. This suspension was divided into two parts, one of which was kept for control purposes, while the other was exposed for from an hour and a half to two hours and a half to Röntgen rays. Several of the females were then opened, until, when possible, one was found in which the eggs seemed abundant and ready to be discharged. Two short strings of eggs were removed and each string was divided into two parts; one part was placed in the control dish, the other in that which had been exposed to the rays. After about fifteen minutes each string was placed in a separate dish of water.

Several of the experiments proved of negative value either be-