## 4132

### Ciliary Currents in Oviducts of Turtles in Relation to Transportation of Spermatozoa.

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The oviduct of the painted turtle, *Chrysemys picta* (Schneider), measures about 15 cm. in length. The proximal two-thirds of it are concerned with the formation of the egg albumen, and the distal third with the production of the egg shell. The whole interior of the duct is ciliated. These cilia form 2 systems, one that covers most of the inner face of the duct and whose direction of stroke is toward the oviducal outlet—that is, away from the ovary (abovarian system), and a restricted system in the form of a narrow tract extending throughout the length of the duct with cilia beating toward the ovary (proövarian system). Living spermatozoa can make no headway up the oviduct against the beat of the abovarian cilia. Hence there is no ground for assuming that rheotaxis plays any part in the migration of the sperm. Neither does the muscular activity in the oviducal wall nor ciliary reversal contribute to this end. The spermatozoa are apparently transported from their region of deposit by the male near the oviducal outlet to the neighborhood of the ovary solely by the system of proövarian cilia, and this transportation of the sperm is doubtless the function of the proövarian cilia. The abovarian cilia keep the oviduct clear and help in part to move the eggs. Whether a proövarian system of cilia occurs in other reptiles than turtles, in birds or in mammals remains to be ascertained.

## 4133

### An Automatic Drop Recorder.

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This drop recorder was designed to meet the requirements of perfusion and excretion experiments where a continuous record of outflow is desired. It differs in principle from the mechanical type of drop recorder in that the conductivity of the solution itself is