in all but one case there was an increase in the carbohydrate metabolism as manifest by the high respiratory quotient and the calculated amount of carbohydrate burned. The plethora of carbohydrate in the blood stream might account for this stimulation of carbohydrate metabolism. All the evidence seems to point to the fact that the liver has a decreased ability to demobilize carbohydrate from the blood stream—or perhaps there is a hypermobilization rate.

56 (1638)

On a volatile sperm-stimulating substance derived from marine eggs.

By G. H. A. CLOWES and E. BACHMAN.

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Sea urchins eggs suspended in sea water secrete a sperm-stimulating substance studied by Jacques Loeb and H. M. Fuchs, as well as the sperm-agglutinating substance investigated by Frank Lillie and O. Glaser. From preliminary experiments carried out last season at Woods Hole, it appears that this sperm-stimulating substance may be derived from the eggs of the sea urchin, star fish and sand dollar; that it is non-specific and is a comparatively simple volatile, organo substance, a product of enzymatic action or fermentation within the cell.

This substance, the exact constitution of which is not yet known, may be distilled from a neutral, acid or alkaline extract, the first distillate exerting an effect almost equal to that of the original extract. It is not destroyed by heating in a sealed tube in an autoclave for several hours, in a neutral or alkaline solution, but is weakened by heating with acid. It is very rapidly destroyed by iodine and other oxidizing agents, a brief exposure to N/5000 or N/10000 iodine solution causing a lowering in its stimulating activity of at least 100 to 1. This substance, when added to quiescent or attenuated sperm, greatly increases the facility with which the eggs are fertilized by the sperm.

A large number of simple volatile organo substances of the type

of propyl, allyl and cinnamyl alcohol, were tested regarding their sperm-stimulating and fertilization promoting effects, and also their susceptibility to oxidizing agents and other chemicals, and were found to exhibit effects corresponding very closely with those exerted by the egg secretions and extracts. The exact constitution of the substance or substances present in the extract, has not yet been determined on account of the paucity of material at the end of the season, but it is proposed to continue this investigation next summer.

57 (1639)

On a method of producing chronic focal lesions in animals.

By HANS ZINSSER and EDWARD H. RAYMOND, Jr.

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Celloidin capsules are made by a method first used, we believe, by Dr. Clarke of the College of Physicians and Surgeons, though we are not sure of this, but certainly not entirely original with us. Small balls or globes of sugar in the form of some of the more commonly purchasable candies, are stuck to small silk threads with a hot forceps. These are dipped three or four times in celloidin, hardened for a short time in alcohol, and thrown into a jar with running water. The sugar diffuses in the course of ten or twelve hours, and a completely closed capsule is left. With a fine needle a hole is punctured through the capsule, the water drained out, and agar, inoculated with streptococci or other organisms desired, is injected into the capsule and allowed to harden. The puncture-hole is left open. The capsule is then dropped into the peritoneal cavity of a rabbit and the rabbit sewed up. In most cases the rabbits live for months. Some of them gradually emaciate, others will develop agglutinins. We have opened a number of rabbits from six weeks to four months after the capsule had been placed into them. In one case a rabbit into which the capsule had been placed in July was opened in the middle of November (over four months) and the capsule was found to contain living streptococci at this time. Apparently the