going marked changes. Steroid doses varied from 0.1 to 3.0 mgms. in 10 cc of sea water containing Sand Dollar eggs. Controls received a similar volume of the steroid vehicle. No effects of the steroid were observed on the following parameters: - morphology of the egg, fertilizability, time of development, and appearances of various stages of development up to the fully developed plutei.

Study Of The Lipoprotein Lipase Activity In The Gill System Of The Marine Dogfish (Squalus Acanthias).*

Stephen Zsoldos and H. Earl Ginn, Jr.
Columbia University

Considerable lipolytic activity with the characteristics of a lipoprotein lipase was previously demonstrated in the mammalian lung either by incubating minced tissue samples or by perfusing the whole organ with substrate. The present study was designed to determine whether similar activity could be demonstrated in the gill system of the Squalus acanthias. A substrate containing Ediol, albumin, dogfish serum, and Dogfish Ringer solution was maintained at 37°C and perfused through the gill system via the bulbus arteriosus. Duplicate samples of perfusate were obtained at the beginning of each experiment and at 15 minute intervals for determination of FFA. After 60 minutes varying amounts of either heparin or epinephrine, both known lipoprotein lipase activators, were added to the perfusate. Blank determinations were obtained by incubating substrate with and without heparin or epinephrine at 37°C without perfusion through the gills. Small increases in FFA concentration occurred with and without addition of heparin but these increases were similar to but never exceeded increases in blank substrate without perfusion. These results suggest that dogfish serum contains small amounts of a lipoprotein lipase, however, no enzyme activity could be detected in the gills.

*Supported in part by a grant from the National Institute of Health, U. S. Public Health Service. CCY-2332.

Turnover Of Unesterified Fatty Acids In The Marine Dogfish (Squalus Acanthias)

Stephen Zsoldas, and H. Earl Ginn, Jr.
Columbia University

This experiment was designed to determine the rate of disappearance of unesterified fatty acid (UFA) in the dogfish. One milliliter of labeled serum containing 5 microcuries of 1-C^{14}-Palmitic acid was injected in these fish into the ventral aorta. Aliquots of blood were taken at accurately timed intervals at 2, 4, 6, 8, 10 and 20 minutes. The fish were immediately sacrificed and samples of muscle and liver obtained. Samples of plasma and

tissues were immediately frozen. Chloroform-methanol (2:1) extracts of plasma and tissues were counted for total C^{14} activity in 0.2% diphenyl oxazazole in toluene-alcohol by a tricarb scintillation counter. C^{14} activity was also counted on separate fatty acid salts and neutral lipid fractions extracted by the Gellhorn modification of the method of Borgstrom (J.C.I. 40:925, 1961).

A rapid disappearance of total radioactivity was found in the plasma, less than 5% remaining after 20 minutes. No significant increase was noted in plasma neutral lipid counts in this period. Almost a radioactivity was found in the fatty acid fraction, with no activity in the neutral lipid fraction in the liver samples and minimal activity in the neutral lipid fraction of muscle. Total counts in liver and muscle tissues were approximately equal and were 10 times higher than terminal plasma samples, suggesting an accumulation of the fatty acids in the tissues.