These results are in sharp opposition to earlier reported work on males, and laboratory investigations will be necessary to determine why.

Swarms of Chironomids (Tendipedids) were found to respond to certain frequencies of sound, either pure tones or human voices by gathering near the sound source. The reaction was elicited by frequencies of 125 and 250 c.p.s., the latter being the more effective. The intensities needed were low — about 5-10 db above the ambient noise level. The biological significance of the reaction was not discovered. Specimens of the Chironomid which was studied were sent to Dr. S. Roback for identification and proved to be a new species which he is describing.

Claspers and Siphon Sacs of the Spiny Dogfish, Squalus acanthias

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Electrical stimulation of the clasper muscles of *Squalus acanthias* with an inductorium reveals that, during copulation, the clasper is flexed medially, forming an angle of ca. 90° with the long axis of the body. The copulatory position is therefore similar to that in *Scylliorhinus canicula* in which species the male coils about the cloacal region of the female and inserts but one clasper at a time. Once the clasper enters the oviduct, its distal end bends sharply and causes a prominent spur to project outward in the opposite direction. Simultaneously a cartilaginous hook or claw, the flat surface of which had previously rested against the rhipidion of the clasper, now revolves through 90° and, together with the spur, penetrates the wall of the oviduct thus securely anchoring the clasper. In this position sperm pass from the urogenital papilla into the clasper groove and thence into the oviduct. Secretions from the siphon sacs not only lubricate the clasper during intromission but may also contribute to the seminal fluid.

The siphon sacs are paired, subcutaneous, muscular epithelium-lined bladders, situated on each side of the midline between the skin and belly musculature. Each sac ends blindly anteriorly and opens into the clasper groove posteriorly. In *Squalus acanthias* they are relatively small, measuring ca. 12% of the total body length and each is capable of holding a maximum of 6 to 15cc of fluid. When the muscular walls of the sac are stimulated electrically they contract to 85% of their original length. The siphon sacs normally contain a small quantity (0.2 cc) of clear, sticky fluid which is secreted by numerous large goblet-like cells present in the stratified epithelium lining the lumen of the sac. The secretion has a pH of 5.8, and contains urea (56 - 188 mM), Na^+ (204-362 mN), Cl^- (265-403 mN), K^+ (5.8 mN), and 4.42 mg N/ml. Paper chromatograms fail to detect glucose, fructose, or sucrose in the secretion. There is no evidence that the siphon sacs are normally filled with sea water.

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Experiments on the Morphogenesis of Regenerating Fins In Fundulus Heteroclitus

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The fins of Fundulus heteroclitus regenerate by the terminal accumulation of undifferentiated cells derived from the connective tissue immediately proximal to the level of amputation. Osteoblasts which normally line the surfaces of the dermal fin rays, also migrate into the blastema where they are responsible for giving rise to the regenerated rays. The latter develop as a result of the initial deposition of bone in intimate association with the epidermal basement membrane.

The complete extirpation of ventral halves of fin rays from amputated fins results in the regeneration of correspondingly deficient structures. When parts of fin rays are removed for short distances behind the level of amputation, ray regeneration proceeds nomally from the more proximal level. Additional fin rays transported to the interradial regions of subsequently amputated fins bring about the formation of corresponding extra rays in the regenerate. When parts of fin rays are extirpated from otherwise intact fins, the missing portions are replaced by distally directed growth from the proximal ray stumps.

Totally denervated fins cannot regenerate after amputation, nor can individual fin rays repair injuries in the absence of nerves. It is concluded, therefore, that ray regenerates are formed only under the influence of osteoblasts derived from pre-existing ray stumps, and that this process is dependent upon the presence of adequate innervation.

Execretion of Sodium Bicarbonate by the Freshwater Catfish (Ameiurus nebulosus)

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It was reported previously (Am. J. Phys. 183:155, 1955) that in contrast to the marine dogfish, a carbonic anhydrase sensitive to inhibition by Diamox® does exist in the kidney of the freshwater catfish. In the latter species, intraperitoneal administration of sodium bicarbonate leads to alkalinization of the urine and increased renal excretion of sodium and