## Observations Concerning The Non Mineralized Skeletal Components Of E. parma.

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In a previous report it was suggested that the fibrous component of the skeletal system was elaborated by primary and (possibly) secondary mesenchyme cells. In subsequent studies this concept has been modified. Our observations indicate that a number of delicate fibers and fiber systems are elaborated before the skeleton is fabricated. These fibers appear to be formed by small stellate cells reminiscent of fibroblasts in in higher organisms.

In the skeleton these structures have the appearance of collagen fibers. They may be demonstrated by treatment with Mallory Azan but not by methods used to demonstrate reticular tissue. Under polarized light they reveal birefringence indicative of molecules oriented in a linear arrangement. Treatment with toluidine blue indicates that they are orthochromatic, and faintly PAS positive. The ground substance in which these fibers lie was shown by histochemical methods to contain a very soluble PAS (muco polysaccharide) component. This component could not be demonstrated by conventional PAS methods, but only after periods of combined precipitation and decalcification proceedures. The organic components of the skeleton of E. *parma* consists of a fibrous collagen-like component and a ground substance containing a muco polysaccharide. The structure and composition of these substances though similar in some respects differs in detail from analogous structures in higher organisms.

## Inhibition Of Calcification In Regenerating Teleost Scales Following Administration Of Tetracycline

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Adult Fundulus heteroclitus, weighing an average of approximately 5 grams each, were given daily intraperitoneal injections of 0.1 mg tetracycline in 0.1 cc distilled water. Control fishes were injected with equal amounts of distilled water. Scales were plucked from the left flanks of all fishes at the onset of injections, and the animals were maintained in running salt water aquaria at 20-22°C. After three weeks, the fish were sacrificed and their scales stained for calcium with the von Kossa technique.

Regenerated scales of control fishes had acquired several growth rings and were heavily calcified. Scale regenerates from tetracycline treated fishes were extremely flaccid in contrast with the stiffened control regenerates, and exhibited considerably less calcification. Calcium deposition