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Phylum Ctenophora: The Morphology of the Ciliated Rosette Cell

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Poster Presentation 18

**PHYLUM CTENOPHORA: THE MORPHOLOGY
OF THE CILIATED ROSETTE CELL**

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Comb jellies or ctenophores are delicate, transparent animals characterized by eight meridional rows of cilia. Ctenophores are for the most part pelagic animals with a few benthic species (Ruppert and Barnes 1994). These animals have two main body cavities, the gastrovascular system (gvs) and the mesoglea. The gvs is a series of canals in which digestion of food and circulation of nutrients and water occurs. The mesoglea is a connective tissue compartment situated between the gvs and the outer epidermis. The only known connection between these two compartments is provided by specialized cells called the ciliated rosette cells. The rosette cells form a canal that opens between the gvs and the mesoglea (Hernandez-Nicaise 1991).

With the exception of the work of Hernandez-Nicaise (1991), little is known about the structure of these cells in adults, and published accounts of the cells in larvae are lacking. The work presented here describes the morphology of the rosette cell in cydippids, the planktonic larvae of ctenophores. As in adults, the rosette cells in larvae are located on the meridional canals of the gvs. Two ciliated cells form a pair of superimposed rings lining each side of the aperture. The cilia are arranged in a conical tuft and beat synchronously with each other into the center of the canal created by the two rings (Hyman 1940).

The function of the rosette cell is unknown; however, Hyman (1940) proposes that they function to regulate water balance in the mesoglea. Although a selective excretory filter has not been identified, an alternative hypothesis of the function of the rosette cells is excretion of water and metabolites from the mesoglea into the gastrovascular system.