

PLANKTONIC TUNICATES

Although the description of urochordates in this text is based primarily upon attached ascidian tunicates, planktonic species are numerous and important in marine food webs. Dense tunicate swarms, hundreds of kilometers wide and many meters deep, are common in the open ocean. Swarms of larvaceans may contain up to 25,000 animals per cubic meter! Larvaceans filter organisms as small as bacteria ($0.1\ \mu\text{m}$ in diameter), and in turn, are fed on by other plankton feeders, such as sardines and herring.

Thaliacean tunicates also occur in large, dense swarms in the open ocean. Most are aggregations of solitary individuals; however, some form spectacular luminescent colonies. Colonies 10 m long

and 1 m in diameter are common. Individuals are oriented with oral siphons pointed outward and atrial siphons directed toward the center of the colony. Ciliary currents and contractions of body-wall muscles direct water toward a central cavity of the colony and slowly move the entire colony through the water. When chemical or mechanical stimuli stimulate a part of the colony, the part luminesces and ceases ciliary beating. The luminescence spreads over the entire colony, and the colony stops moving. This behavior may help the colony avoid unfavorable environments or may confuse or frighten predators.