diatoms, and green algae (Castagna 1975; Fay et al. 1983). Bay scallops are filter feeders that pump water through the mantle cavity and strain food matter on the gill cilia (Figure 5.2). Rate and duration of feeding is dependent on food particle densities (Kirby-Smith 1970). The filtration rate depends on body size, and the normal feeding position of adults is resting on the bottom on the right valve with an open shell (Fay et al. 1983). Water movement is from front (anterior) to back (posterior). When a scallop lands on the left valve it will flip itself over using its foot and expelling water (Fay et al. 1983). In coarse sand substrate, bay scallops have been found burrowed with the left valve exposed in the water to feed.

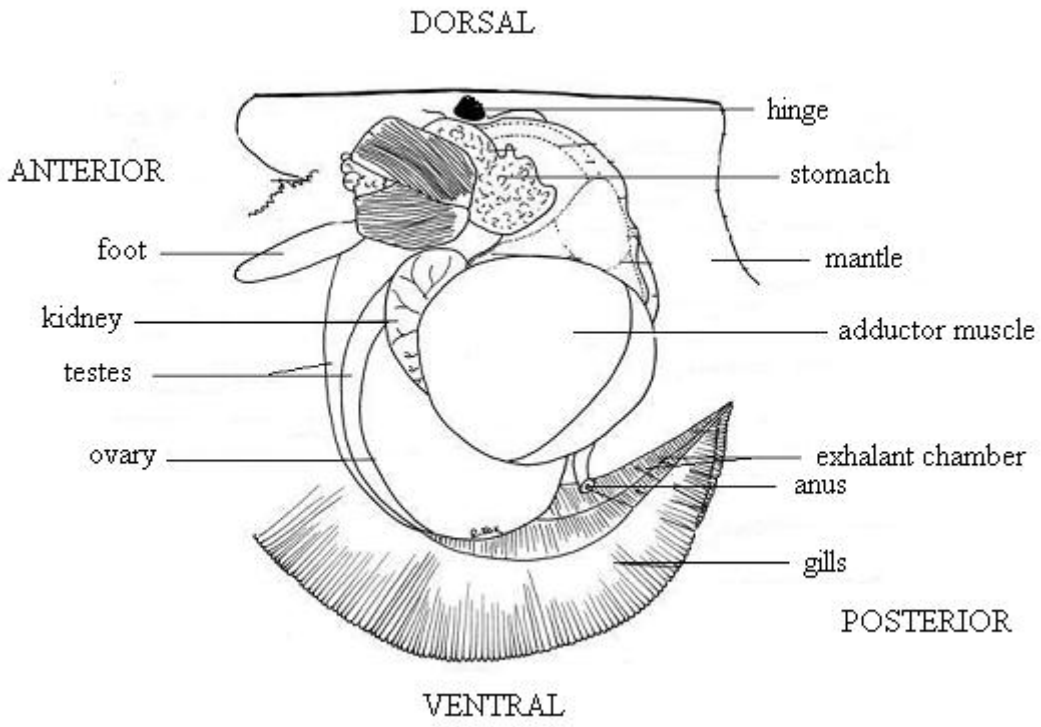

Figure 5.2. The left side of *Argopecten irradians*. The left valve, mantle skirt, and gill have been removed to reveal the organs underneath (Fox 2004).

5.1.4 REPRODUCTIVE BIOLOGY

The bay scallop is a hermaphroditic (containing both testes and ovaries when mature) bivalve. Only one type of sex product is given off at any one time, probably to prevent self-fertilization (Brousseau 2005). The short lifespan of the bay scallop (1-2 years) usually limits spawning to only once in their lifetime. There are considerable differences in the timing of the spawning season for bay scallops along its range (Gutsell 1930; Sastry 1966; Spitsbergen 1979). Variation in the timing may be an adaptive response to differences in water temperature and the timing of the maximum food availability (Sastry 1963; Sastry 1970). Spawning tends to occur later in the year in the more southerly populations (Sastry 1966; Barber and Blake 1985; Peterson et al. 1989; Brousseau 2005). Spawning in North Carolina occurs primarily in the fall during