Reproductive Strategy for a Surf Clam, Chion semigranosa (Dunker), Accumulating in the Intertidal Zone of Exposed Sandy Beach in Summer in Tsu, Mie Prefecture, Japan

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C. semigranosa is a small bivalve with a shell length of about 1.5 cm predominating in exposed sandy beach. Intensive field observations revealed that C. semigranosa accumulated around 610 individuals/m2 and moved actively using attendant waves at full tide and draft waves at ebb tide in the intertidal zone in summer by appearing shells onto sand surface just before approaching wave. Immediately after the waves drew, shells dove into the sand promptly. In late July reproductive gonads were developed, and many shells laid eggs or dispersed spermatozoa in the draft waves. After 27 hours of fertilization, veliger larvae appeared and were remained in the water of the intertidal zone. Then baby clams developed were expected to land in the sand of intertidal zone 1 to 2 weeks after fertilization. In the late August, 5 mm baby clams of shell length were found in the intertidal zone. The present study revealed that C. semigranosa selected the severe intertidal environment such as repeating dry and wet, remarkable temperature change, rough waves and easy to be found by predators, birds, of which most of organisms do not enter, for their reproduction and the subsequent development by adopting the environment. Rich foods consisting of plankton and high temperature in the intertidal zone could be beneficial for supporting their rapid growth of C. semigranosa.

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