

**A TEST OF RHEOTACTIC BEHAVIOUR OF THE BLUE MUSSEL
MYTILUS EDULIS L.**

By Per Dolmer, Magnus Karlsson & Ib Svane

The Royal Swedish Academy of Sciences, Kristineberg Marine Biological Station,

Kristineberg, S-15031 Fiskebäckskil, Sweden

ABSTRACT

Many marine invertebrates show rheotaxis. Marine mussels may orientate the inhalant siphon towards currents to optimize feeding and sanitary conditions thereby improving growth rates. The blue mussel, *Mytilus edulis* L., forms extensive beds on both hard and soft substrata. *M. edulis* is an active filter-feeder showing great mobility by constant reorientation and attachment by aid of a well developed foot and byssus threads. We predicted that mussels would show rheotaxis and orientate uniformly in relation to currents to optimize feeding. To test this hypothesis, orientation of mussels in the field were observed using underwater stereophotography. Furthermore, experiments *in situ* and in a laboratory flume were performed. The results showed that *M. edulis* lack rheotaxis. Movements within a mussel patch were highly dynamic indicating that rheotactic behaviour may be concealed by the difficulty in experimentally separating competition for space from competition for food.

