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Abstracts

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**The larval development and infectivity of *Mytilicola intestinalis* (Crustacea: Copepoda) parasitic in *Mytilus edulis*.** By J. M. GEE and J. T. DAVEY (Institute for Marine Environmental Research, Plymouth)

The *Mytilus/Mytilicola* system is the first in a series of studies designed to assess the significance of parasitism in estuarine ecosystems (or subsystems). Experimental studies have been made of some aspects of the transmission process using uninfected hosts from the Erme estuary and parasite embryos from infected mussels in the Tamar estuary.

The rate of development of embryos up to hatching is a function of temperature. *In vitro* hatching mortality is estimated at 10 % at optimal temperatures and salinities. The duration and mortality of the two nauplii stages are also a function of temperature and salinity (as the salinity reaches the lower tolerance limits mortality increases rapidly with a decrease in temperature). The first copepodite is the infective stage. Infectivity *in vitro* is generally low (about 30%) but with a high degree of individual variability, which may be the result of experimental procedure but is more probably due to inherent differences in larval infective potential and/or host resistance. At optimal temperatures and salinities copepodite mortality is taken as the number which fail to infect and will, therefore, depend on the above factors together with a number of others which can be grouped under the term 'host availability'.

After infection the parasite passes through another four copepodite stages before becoming adult. The rate of development has been shown to be a function of temperature but other factors, such as availability of food and parasite density within the host, may well exert a controlling influence. The mortality during development from 1 week after infection to maturity (approximately 11 weeks after infection at 16 °C) is about 75 %.

A preliminary flow diagram, which may form the basis of a model of the transmission cycle of this host/parasite relationship, is outlined.