寄生性橈脚類 Pseudomyicola spinosus室内飼育法

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Tsukuba Business-Academia Cooperation Support Center, Agriculture, Forestry and Fisheries Research Council Secretariat
Rearing Method of a Parasitic Copepod, *Pseudomyicola spinosus* (Cyclopoida), in Laboratory

SIR—A parasitic copepod *Pseudomyicola spinosus* (RAFFAELE & MONTICELLI) has been found in 39 species of pelecypods from Bermuda, West Indies, Mediterranean and Madagascar (HUMES 1968), and in 3 pelecypods from Japan (YAMAGUTI 1936. As *P. ostreae* is a synonym of *P. spinosus*, personal communication from Dr. J.-S. HO. HOSHINA & SUGIURA 1954, NAKAMURA & KAJIHARA 1979). The authors devised a rearing method of this copepod keeping in a Petri dish from generation to generation under the laboratory conditions.

**Hatching and rearing of nauplius:** The female copepods with a pair of egg sacs were collected by means of washing the mantle cavities of the host with filtered sea water in a glass Petri dish of 15 or 20 cm in diameter. For the observation of the hatching of eggs, an egg sac detached from female was placed in a plastic dish (9 cm in diameter, 1.5 cm in depth, with a cover) filled with about a half volume of filtered sea water. The dishes were covered with a sheet of black paper and kept at 20-25°C, without either aeration or changing the water. We observed successfully that the first nauplius performed six continuous moltings and became the first copepodid under these conditions (NAKAMURA et al. 1979). For the individual rearing, each nauplius was kept in a separate Petri dish (larger than 5 cm in diameter) with black cover, but the mortality rate was high. Nauplii cultured in a group gathered into a part of the Petri dish at the illumination of a spot light, showing positive phototaxis. All the materials, such as egg sacs, nauplii, copepodids and adult copepods, were picked up and transferred safely with a small pipet of about 15 cm in length and 2–3 mm in diameter at the tip with about 0.5 ml of water content in one suction. Filtered sea water of about 30% salinity was used through all the developmental phases, since the highest hatching and survival rates were obtained at 30% in the pre-experiments.

**Separated rearing of individual copepodid and adult:** A glass Petri dish with cover of 3 cm in diameter and 2 cm in depth was used for separated rearing of individual copepods from the first copepodid to the adult stages. A copepod and a piece of marine mussel's gill fragment of 5 mm width as food were placed in the dish with about a half volume of filtered sea water, without aeration, and then, the dish was covered by black paper. The exchanges of water and gill fragment were carried out usually at intervals of 2 or 3 days at 20°C, and on this occasion, the developmental stage of the copepodid was identified by the number of exuvia using a binocular microscope.

The sixth copepodid is considered as the adult stage; after this stage, both male and female did not molt. The copulation could be observed about one week after a new couple of virgin male and female was introduced into the small Petri dish being provided with a gill fragment. After a single copulation, a female was observed to lay eggs continuously at about weekly intervals until her death. It seems that a female has a pair of seminal reservoirs. Under the rearing conditions, it was observed that the male has shorter life span than the female. The most long lived female lived 1)

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1) Accepted 6 October 1980.
2) 寄生性機能類 *Pseudomyicola spinosus* の室内飼育法
over ten months after becoming an adult. Table 1 *spinosus* under the laboratory conditions. shows the time course of the development in *P.*

### TABLE 1. TIME COURSE OF HATCHING AND DEVELOPMENT OF *Pseudomyicola spinosus* IN THE LABORATORY. THE EGGS AND THE LARVAE WERE CULTURED IN THE SEA WATER OF 30% SALINITY AT 20°C.

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<th>Hatching and development</th>
<th>Average time (days)</th>
<th>Number observed</th>
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<tr>
<td>From an egg without an eye spot to the first nauplius</td>
<td>5.1±1.3</td>
<td>100 egg sacs</td>
</tr>
<tr>
<td>From an egg with an eye spot to the first nauplius</td>
<td>1.7±0.8</td>
<td>11 egg sacs</td>
</tr>
<tr>
<td>From the first nauplius to the sixth nauplius</td>
<td>about 1.5</td>
<td>54 individuals</td>
</tr>
<tr>
<td>From the sixth nauplius to the first copepodid</td>
<td>about 1.0</td>
<td>25 individuals</td>
</tr>
<tr>
<td>From the first copepodid to the sixth copepodid (male)</td>
<td>19.8±2.6</td>
<td>16 individuals</td>
</tr>
<tr>
<td>From the first copepodid to the sixth copepodid (female)</td>
<td>26.2±8.9</td>
<td>16 individuals</td>
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**Literature Cited**


