MORPHOLOGICAL CHARACTERISTICS OF MEDITERRANEAN SLIPPER LOBSTER, *SCYLLARIDES LATUS* (LATREILLE, 1803) (DECAPODA: SCYLLARIDAE) STAGE I PHYLLOSOMA

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Abstract

General morphological characteristics are given on phyllosoma stage I of Mediterranean slipper lobster, *Scyllarides latus*, Latreille, 1803. The phyllosomas were obtained from ovigerous female in the laboratory and put under periodical and dark regime of illumination. The first molt that was expected within 10-12 days was not achieved due to the inadequate feeding (starvation).

Keywords: phyllosoma, slipper lobster, laboratory rearing.

Introduction

Mediterranean slipper lobster, *Scyllarides latus* (Latreille, 1803), Mediterranean and temperate water species is common in southeastern Adriatic. It is of low economic importance due to the restricted catching localities and scarse populations. The published data on this species is limited to various reports on their planktonic larval stages (1) and biology of the adult stage (2).They lack defensive mechanisms, aside from its robust and heavy armour. Slipper lobster relies on fast swimming , escape, camouflage and shelter for defense (3). The reproductive strategy of slipper lobster relies on production of large number of eggs (more than 10000 in our case), because the period of larval development is very long. The aim of this paper is to present the results of spawning and larval rearing trial, as well as basic morphometric characteristics of phyllosoma stage I of *Scyllarides latus* larvae under laboratory conditions.

Materials and methods

Ovigerous female of *Scyllarides latus* 250mm TL, was wild caught, and kept in 0,5m3 aquarium, with running sea water (23,7°C, 35,4‰S). On July 19-th during the night and early morning hours several thousand (approximately 7-12000) I stage larvae hatched (ecclosed). The larvae were transfered into three black 0,4m3 tanks (at appr. 15 larvae per litre) similar to Kriesel containers used for rearing lobsters (4), with approx. two changes of seawater/day, with temperature 24, 1 - 24,9°C and salinity 35,9 - 36,5‰S. Two of those tanks were exposed to diurnal light cycle (12l/12d), and third was covered with non transparent black plastic. Larvae were fed rotifer Brachionus plicatilis (10-20 ind/ml) from day 3. Mortality was checked from samples. Samples of larvawe were collected daily, and preserved in 5% buffered seawater formalin. The larvae were examined on Wild Heerbrugg binocular microscope. Total length of each larva was measured from the anterior end of cephalic shield, between eyestalks to the posterior tip of the telson.

Results

In laboratory reared phyllosomas of stage I of *Scyllarides latus*: pereiopods I and II are well developed, with exopodites bearing five pairs of feather-like setae, pereiopodes III are longer than I and II, and their exopodites present only as buds in stage I. Buds of pereiopodes IV are visible between pereiopodes III and pleon at each side. Eyes not stalked. Pleon in stage I is approx. 25% if TL, rectangular in shape and with two sets of setae posterodorsal at each side: (Fig. 1b). Antennulae unsegmented, and bearing on the tip three setae and one short spine (Fig. 1d). Antennae are shorter than antennulae and biramous, with articulated endopodit bearing three spines on its tip. Exopodit little longer than endopodit, bearing two spines on tip (Fig. 1e). All phyllosomas under photoperiod were lost at the day 10, and under darknes at the day 12 (85% mortality at the day 10). TL measured at the day 2 (+25h) was: 1.691±0.1048mm, and at the day 10 (+245h) was: 1.735±0.0289mm. Increase coeficient for TL measure in 10 days was 0.00214. No trace of morphological change was detected in larvae collected on day 10, and 12 (light and dark regimes, respectively).

Discussion

There has been information on laboratory rearing and early life history of other Scyllaridean species of genera Jasus, Palinurus and Panulirus (5, 6), Thenus (7), *Scyllarus americanus* (8) and *Scyllarus demani* (9). As the mean duration of first phyllosoma stage for suptropic species *Scyllarides aequinoctialis* (Lund) at 24°C was 8,1 days (10), and for Ibacus peronii Leach at 23,3°C was 13,2 days (11), phyllosomas of *Scyllarides latus* were expected to ongo the first molt within first ten to twelve days at temperature of 24-25°C. We did not achieve molt probably due to the inadequat feeding. Kittaka (5) concluded that adding mussel tissue as food in the culture water is important for maintaining palinurid phyllosomas, which are generally more sensitive of water quality and stress. Kittaka and Abrunhosa (12) also note that phyllosoma larvae of *Palinurus elephas* exhibit strong predatory behaviour rather than filter feeding. So, the adequate live food, such as the *Artemia nauplii* must be used instead of rotifers, to acchieve transition between instars.

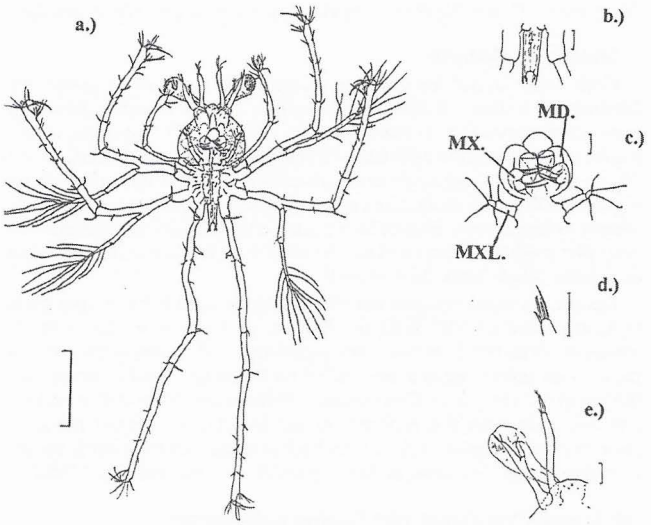

Figure 1. Stage I phyllosoma of *Scyllarides latus* (Latreille, 1803).
a.) ventral view (scale bar = 1mm); b.) ventral view of the abdomen with the buds of pereopodes IV; c.) oral field with MD – mandibula, MX – maxilla, MXL – maxillula; d.) tip of the left antennula; e.) left antennula and antenna. Scale bars: b, c, d and e = 100mm.

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