

## **The sea *Aspidochirotida* holothurians (Holothuroidea: Echinodermata) of the *Posidonia oceanica* meadow of Stidia area (Mostaganem, Algeria): Ecological role, microhabitat and feeding behavior**

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The *Aspidochirotida* holothurians or "sea cucumbers" are major component of the benthic compartment of the *Posidonia oceanica* ecosystem. Active actors of the sedimentary rehandling (by their mode of feeding "deposit feeding"), sea cucumbers play a major role in the recycling of the organic matter.

The sampling was carried out in July 2011 by scuba diving, in three stations (500 m<sup>2</sup> each) of the site of Stidia. The selectivity of the sea cucumbers (choice of the sediment grain size) was studied through the calculation of the index of selectivity.

This study reveals that there exists a certain micro-distribution of the sea cucumbers within the various biotopes of the *posidonia* meadow: *Holothuria (H.) tubulosa* and *H. (R.) poli* prefer the inter-mattes (medium not well protected and influenced by the hydrodynamism which disperses food); *H. (P.) forskali* and *H. (P.) sanctori* often meet between the *posidonia* rhizomes on the level of "tombants de matte" (protected medium which is characterized by a great availability of biodegradable materials). The rate of the organic matter found in the sediment of the guts and feces is high compared to that found in the sediment of the biotopes. Our results enable us to classify the studied holothurians species according to their selectivities: *H. (P.) sanctori* is the most selective species followed by *H. (P.) forskali* then by *H. (L.) poli*, whereas *H. (H.) tubulosa* constitutes the least selective species. It is supposed that the results obtained in this study are coherent with the feeding behavior of the marine "deposit-feeders", proposed by Thagon et al., (1978). This model share of the principle that these animals have tendency to select the smallest covered particles by important rate of organic matter, in order to maximize their profits in energy.

**Key words:** *Aspidochirotida* holothurians, *Posidonia oceanica* meadow, organic matter, selectivity, optimal foraging, Mostaganem.