

**Abundance, dispersion and microdistribution of aspidochirotid holothurians (Holothuroidea: Echinodermata) in the *Posidonia oceanica* meadow of the Sidi Fredj peninsula (Algeria)**

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The deposit feeders aspidochirotid holothurians, commonly known as sea cucumbers, represent the major component of the *Posidonia oceanica* benthic ecosystem in the Mediterranean Sea. They participate actively in the recycling of organic matter by ingesting the sediment layer and/or the bottom wreck. The particular biota and the sciaphilous behaviour of these animals make them particularly difficult to sample, restricting the possibility of the study of their distribution in the *Posidonia oceanica* meadow. In addition, few data on the factors influencing their distribution are available.

The present study deals with four aspidochirotid holothurians species — *Holothuria tubulosa* Gmelin 1788, *H. polii* Delle Chiaje 1823, *H. sanctori* Delle Chiaje 1823, and *H. forskali* Delle Chiaje 1823 — found in a small shallow-water area (500 m<sup>2</sup>, 0.5–3 m depth) of *Posidonia oceanica* meadow of the Sidi Fredj peninsula, situated 20 km west of Algiers. The sampling was done underwater by means of scuba-diving and consisted of counting individuals of each species using the Quadra method. To study the dispersion of each species, a relationship between the variance and the mean value of the monthly densities was established. To locate each holothurian species in the *Posidonia oceanica* meadow, we defined four biota ('herbier sur matte' (seagrass bed), 'tombant de matte' (slope of seagrass bed), 'intermatte' (interval between seagrass beds), and 'melange de blocs' (blocs mixtures)) in the studied area. The mean densities and the corresponding percentages have been evaluated on a surface corresponding to 19 quadras (1 m x 1 m each) for each biota, during one cycle (from March 1995 to February 1996).

The established census revealed a net dominance of *H.* and *H. polii*. The studied species dispersion was random to quiet aggregate. This situation was governed mainly by the feeding behaviour of these deposit-feeding species and by the essential ecological factors, especially food availability, hydrodynamism, and light. The micro-distribution was clearly different from one species to another, with *H. tubulosa* showing a preference for the sea grass (herbier) and blocs mixtures (mélange de blocs) biota, whereas *Holothuria polii* confine themselves in the 'inter-mattes.' *Holothuria forskali* were found mainly in 'inter-mattes' or 'tombant de mattes,' together with *H. sanctori*.