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"Coherent Species Packing of Planktonic Protists: Tintinnid Ciliates in the Oligotrophic Mediterranean Sea"

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ABSTRACT

Tintinnids are a monophyletic group of planktonic ciliates and compared to many groups of protists, relatively homogenous in terms of ecology and morphology. Nonetheless, tintinnids are a species-rich group with, for example, about 100 morpho-species found in the Mediterranean. The co-existence of so many apparently ecologically similar species remains difficult to explain. Given ecological equivalency of species, community composition should vary with distance, in the absence of distributional barriers or environmental gradients.

We compared tintinnid community composition in 2 oligotrophic areas, separated by 2500 Km, the Western and Eastern basins of the Mediterranean. The areas sampled were ecologically similar, characterised by low chlorophyll concentrations (0.15 ug/l avg 0–150m) and deep (>100m) chlorophyll maxima. Two sets of 7 stations separated by less than 40 Km were sampled in each basin.

Not surprisingly, within sets of stations, few differences were evident. Remarkably though, comparing the two geographically distant communities, we found communities very similar in total concentrations (5–10/l), species richness (36–42), overall species catalogues, as well as identities of core (found in all stations) and occasional species. Furthermore, the patterns of relative abundance distribution, whether in terms of species or size-classes (based on oral diameters), were nearly identical.

We conclude that different tintinnid species occupy distinct niches, at least that of a particular size-class, and that the assemblages or communities of tintinnids in the two basins are subject to very similar structuring factors.

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<http://www.obs-vlfr.fr/LOV/aquaparadox/>