



**EuroMarine workshop**

## **Management of bioinvasions in the Mediterranean Sea The way forward**

**Villa Dohrn-Benthic Ecology Center and Hotel Villa Maria  
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### **POSTER LISTS AND ABSTRACTS**

**(in alphabetic order)**

**The number next to the title indicates**

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## 7) THE TAXONOMY LAB: A SENTINEL FOR MEDITERRANEAN BIOINVASIONS

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Mediterranean Sea has a long history of bioinvasions. The total amount of records of non-indigenous species (NIS) increased continuously though the knowledge of the taxa remains scattered and their distribution is probably underestimated.

NIS range underestimation could be ascribable to the Taxonomy impediments; and the Taxonomy Lab of the University of Palermo performs researches focused to fill these gaps. Several studies deal with deepen knowledge on NIS, as the case of the amphipod *Grandidierella bonnieroides* Stephensen, 1948, an invasive alien species recently established along Israeli coasts. Its taxonomic key is built only on adult male stage, though abundance of males is commonly lower than females, and males change the shape of taxonomic characters during growth. The identification of this taxon resulted and still results difficult, and need further analyses.

On the contrary, remarkable taxonomic mismatches regarding *Parhyale plumicornis* (Heller, 1866), an endemic Mediterranean amphipod, overestimated NIS range, since caused previous wrong records of invasive alien species in the Mediterranean basin. A taxonomic revision, with genetic characterization, behavioural observations and ecological notes, allowed to clarify its diagnostic features, and also supported a recent record in the Red Sea, designating this species as the putative first anti-lessepsian amphipod.

As a matter of fact, the very few studies on the taxon Amphipoda (Crustacea) limit an hypothesis which could show the Mediterranean Sea as sink and source of bioinvasions, as regards some specific groups.

The scarce knowledge on what is, or what is not, present in the Mediterranean Sea often regards the rare species. *Caprella santosrosai* Sanchez-Moyano, et al, 1995, is an amphipod up to now considered Mediterranean endemic with a restricted distribution along the Strait of Gibraltar; however, recent records of this species, along the Atlantic Portuguese coasts, made this species lose its Mediterranean endemic status.

Studies on Population Dynamics or Population Genetics also helped to grow knowledge on species spread. *Portunus segnis* (Forskål, 1775) is an Indo-Pacific crab, recorded along the Tunisian coasts. Studies on morphometry and fecundity indicated that this species is well established with a structured population in that area; and studies on the population genetic structure of the mussel *Brachidontes pharaonis* (P. Fischer, 1870), a lessepsian species, gave information on the haplotypes diversity maybe implicated in its spread.

A further taxonomic approach integrated with DNA-Barcoding helped to *i)* identify *Eulalia ornata* Saint-Joseph, 1888, an Atlantic polychaete, as a new species within the Mediterranean Sea, mis-identified in the past as morphologically similar to *E. viridis* (Linnaeus, 1767), or, maybe, a new entry; and *ii)* identify *Kyphosus vaigiensis* (Quoy & Gaimard, 1825), one of the vagrant kyphosid fish species already recorded in the past more than one hundred years ago, thus, not exactly a new entry as previously thought.