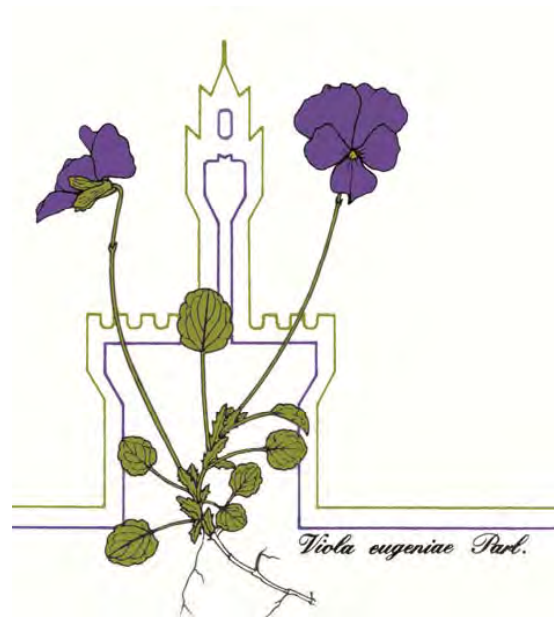


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ABSTRACTS

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4.3 = ROLE OF SICILY AND CIRCUM-SICILIAN ISLANDS AS RECIPIENT AND DONOR AREA FOR ALIEN MARINE MACROPHYTES IN THE CENTRAL MEDITERRANEAN SEA

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The spread of alien species is an ongoing phenomenon which is widely recognized as a major threat to biodiversity at all levels. The particularly high rate of alien introductions to the Mediterranean Sea has been mainly fuelled by the opening of the Suez Canal, by shipping, aquaculture and by a rising trend in seawater temperature (1). As far as marine macrophytes are concerned, a total of 134 species have been listed as possible aliens in the Mediterranean Sea (2, 3). Among the possible pathways of introduction, shipping is considered the dominant vector of unintentional species introduction in coastal marine systems worldwide (4). Traversing the Strait of Sicily, the chief passageway from south to north and from east to west, is considered crucial for extending the range from west to east or *vice versa* of alien species introduced into the Mediterranean Sea. Sicily and the circum-Sicilian Islands, as a consequence of their strategic position at the crossroads between the western and eastern Mediterranean and by virtue of the intense maritime traffic volumes skirting the region, are particularly congenial for and vulnerable to biological marine invasions (5, 6). In particular, the southern and south-eastern coasts, bordering the Strait of Sicily, deserve particular attention. The fact that many marine areas colonized by communities of alien species are located in the immediate vicinity of harbours, supports this hypothesis. The analysis of the first Mediterranean and/or Italian records made in the waters around Sicily, or in waters contiguous to those of Sicily (e.g. southern Italy, Malta, North Africa) and the fraction of aliens entering through the pathway of shipping (e.g. 63% of the alien macrophytes entering the Mediterranean Sea), led us to conclude that Sicily and the circum-Sicilian Islands are an important recipient area for marine non-indigenous species. Moreover, the intense maritime traffic in the area would produce a constant spillover of newcomers into surrounding areas, making this area a crucial transit zone and source for secondary dispersal, highlighting the key role it can play in the circulation of alien species within the Mediterranean Sea.

It has been already suggested that the invasion of the Mediterranean region by *Caulerpa cylindracea* Sonder and by *C. taxifolia* var. *distichophylla* (Sonder) Verlaque, Huisman & Procaccini might have originated along the southern coast of Sicily (7, 8). Moreover, Sicily would have been the source of the Maltese populations of *C. taxifolia* var. *distichophylla*, as a consequence of regular traffic between the two islands (9). The assessment of marine alien species distribution, of the areas at high risk of introduction, of the main pathways and of the vectors of introduction are all essential elements in designing an effective management and conservation program. Therefore, this area, due to its crucial position within the Mediterranean Sea, could be an important transboundary station for monitoring the entry and spread of marine alien species, as solicited in (10).

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