FIRST REPORT OF CAULERPA TAXIFOLIA VAR. DISTICHOPHYLLA (SONDER) VERLAQUE, HUISMAN & PROCACINI (CAULERPACEAE, CHLOROPHYTA) FROM NORTHERN CYPRUS

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Abstract

Caulerpa taxifolia var. *distichophylla* is an Australian species which was introduced into the Mediterranean Sea. Finally it was reported from the Levantine coast in 2007 (Gulf of Iskenderun, SE Turkey). Since then it has expanded, covering large areas of the eastern Mediterranean. *C. taxifolia* var. *distichophylla* has not been reported in any earlier marine floras of Cyprus. We report for the first time observing *C. taxifolia* var. *distichophylla* presence on the northern Cypriot coast describing its ecological and morphological features.

Keywords: Alien species, Algae, Cyprus Basin

Introduction

The marine alga Caulerpa taxifolia (Vahl) C. Agardh is native to several tropical and subtropical regions of the world (Phillips and Price 2002). Seaweed invasions are a growing concern around the world (Ribera and Boudouresque 1995). One of the most famous, or infamous, of these in the past decade was the establishment of an aquarium strain of tropical green seaweed, Caulerpa taxifolia (Komatsu et al. 2003). Accidentally introduced into the Mediterranean Sea in 1984, the tropical alga Caulerpa taxifolia has spread since then, reaching the Mediterranean coast. Invasive populations of C. taxifolia now occur at more than 100 sites where more than 13,000 hectares have been colonized (Meinesz et al. 2001; Galil 2008). Caulerpa taxifolia var. distichophylla (Sonder) Verlaque, Huisman & Procacini was reported only from the Iskenderun Bay (Mediterranean coast of Turkey) by Cevik et al. (2007 as Caulerpa taxifolia) and Sicily by Jongma et al. (2013). But it has not yet been reported from the Cyprus coast since then. In the present study, we carried out morphological analyses to identify the taxon and compared with the materials obtained from Iskenderun Bay (Cevik et al. 2007).

Material and method

Specimens with stolons were hand-collected with SCUBA diving in June 2009 in the northeast coast of Northern Cyprus. The physico-chemical characteristics of the colonized area were registered during the field study by using DKK-TOA WQC 24 Instruments, Multiparameter Water Quality Checker.



Fig. 1.

Cyprus coast-line and the sampling locality (arrowhead).

Results and Discussion

Current distribution, substratum structure and morphological variations; The colonies of *Caulerpa taxifolia* var. *distichophylla* were found at two regions in Ayios Philon Church Bay, Dip Karpaz, Northern Cyprus (35° 38' 12.52" N; 34° 22' 30.71" E). The general biotope structure (mainly depending on depth, substrata and flora communities) of the site shows a dense *Cystoseria* spp. on the rocky substrata with a very small part covered with *Posidonia oceanica* (L.)

Delile. The measurements at two points showed that C. taxifolia var. distichophylla spread within the depth limits of 6-8 m. Morphological variations and comparison of Cypriot and Iskenderun specimens; The specimens of Caulerpa collected in the Northern Cyprus do not exhibit the usual morphology of the species. It resembles the specimens collected in Iskenderun (Cevik et al. 2007). Compared with specimens of Iskenderun and Cyprus; the Cyprus stolons are less elongated in shape and its stolons, fronds and pinnules are more or less elongate and long then the Iskenderun material. Conclusions; In conclusion, C. taxifolia has been studied extensively in the western Mediterranean, as its impact on the marine ecosystem is well admitted. It colonizes all types of sea bottoms such as; rock, sand, mud and dead P. oceanica meadows, and invades indigenous biocenoses, modifying the biodiversity and the ecodiversity. The present study constitutes the first report of *Caulerpa taxifolia* var. distichophylla along the Northern Cyprus coast. It is spreading in two different regions which are close to each other. At the site, it is found that P. oceanica meadows are located 100 m away, but brown algae are present in nested appearance with C. taxifolia var. distichophylla. At both regions under C. taxifolia var. distichophylla invasion, it is observed that presence of molluscs, fishes and other species continues in usual manner.

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