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First report of the alien brown alga *Scytosiphon dotyi* M.J. Wynne (Phaeophyceae, Scytosiphonaceae) in Turkey

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Abstract

The alien brown alga *Scytosiphon dotyi* M.J. Wynne (Phaeophyceae, Scytosiphonaceae) is reported for the first time in Turkey. This species was collected growing epilithically in the midlittoral zone in the Dardanelles (Sea of Marmara, Turkey).

Keywords: Alien algae, brown algae, Phaeophyceae, *Scytosiphon dotyi*, Turkey.

Introduction

The genus *Scytosiphon nom. cons.* was established by C. Agardh (1820:160) based on *Scytosiphon filum* var. *lomentarius* (Lyngbye) C. Agardh. The currently accepted name of the type species is *Scytosiphon lomentaria* (Lyngbye) Link type cons., which was based on *Chorda lomentaria* Lyngbye (1819). Thalli in this genus are erect, tubular, parenchymatously constructed, each cell with a single plate-like plastid, plurilocular sporangia in sorus and with or without ascocysts. Compsonema-like, Ralfsia-like and Microspongium-like microthalli were reported for *Scytosiphon* (Nakamura, 1965; Wynne, 1969; Pedersen, 1980; Fletcher, 1987). At present, *Scytosiphon* contains 14 taxa (species and infraspecific) (Guiry & Guiry, 2011).

Two species of *Scytosiphon* have previously been reported to occur in Turkey: *S. lomentaria* from all shores of Turkey and *S. complanatus* (Rosenvinge) Doty from the Sea of Marmara (Taskın et al., 2008). In the present paper a third species, *Scytosiphon dotyi*, is reported from Turkey.

Material and Methods

*Scytosiphon dotyi* was collected as an epilithic form from Kilitbahir shores (40°07'52″N; 26°21'22″E), the Dardanelles (Sea of Marmara, Turkey) on 20 March 2011 by Ergun Taskın and was preserved in 4% formaldehyde in seawater. It was deposited in the Botanic Garden and Herbarium Center of Ege University (EGE 41065) of Izmir, Turkey. The identification of this alga was made according to the accounts in Setchell & Gardner (1925, as *Scytosiphon lomentaria f. complanatus minor* Setchell & N.L.Gardner) and Fletcher (1987).

Results

*Scytosiphon dotyi* M.J. Wynne 1969 p. 34.
Type Locality: California, USA.

Synonyms: *Scytosiphon lomentaria f. complanatus minor* Setchell & N.L.Gardner 1925, p. 534; *Scytosiphon lomentaria f. tortilis* Yamada 1935, p. 12; *Scytosiphon lomentaria f. cylindricus nanus* Tokida 1954, p. 105. These taxonomic synonymies were proposed by Wynne (1969).

Thalli were epilithic, forming erect, parenchymatous, brownish tubes, arising from discoid holdfasts, cylindrical or dorsiventrally flattened, without constric-tions, to 15 cm long and 1 mm wide (Fig. 1). Surface...
cells small, irregular with plate-like plastid with pyrenoid (Fig. 2). Plurilocular sporangia in sori, uniseriate, to 30 μm long, 3-5 μm broad, without ascocyst-like cells (Fig. 3). Unilocular sporangia unknown. Tufts of true hairs are present over surface of thallus.

This species was collected growing on rocky substrata in the midlittoral zone (-1 m) of Kilitbahir shores in the Dardanelles (Sea of Marmara, Turkey). Seawater temperature: 11.5ºC, salinity: 25.5 ‰. Other species that were present at the collection site: Ceramium ciliatum (J.Ellis) Ducluzeau, Codium fragile (Suringar) Hariot subsp. fragile, Colpomenia sinuosa (Mertens ex Roth) Derbès & Solier, Ectocarpus siliculosus (Dillwyn) Lyngbye, Feldmannia irregularis (Kützing) G. Hamel, Giraudia sphacelarioides Derbès & Solier, Gracilaria gracilis (Stackhouse) M. Steentoft, L.M. Irvine & W.F. Farnham, Halothrix lumbricalis (Kützing) Reinke, Kuckuckia spinosa (Kützing) Kornmann, Microcoryne ocellata Strömfelt, Myrionema strangulans Greville, Punctaria latifolia Greville, Ulva spp., and Striaria attenuata (Greville) Greville.

Discussion

The complanate form of Scytosiphon was described by Rosenvinge (1893) as Scytosiphon lomentaria var. complanatus Rosenvinge. Doty (1947) reported from Oregon the complanate Scytosiphon as S. complanatus (Rosenvinge) Doty based on S. lomentaria var. complanatus. S. lomentaria f. complanatus major Setchell & Gardner (1925) recognized two forms of Scytosiphon lomentaria, complanatus major and complanatus minor from California (North America, Pacific Ocean). Later, Doty (1947) reported that S. lomentaria f. complanatus major Setchell & Gardner as a synonym of S. complanatus. This species has a flat, hollow thallus with tufts of true hairs and without paraphyses when fertile, and Pedersen (1980) has shown based on culture studies that the absence of paraphyses is a reliable character. S. complanatus differs from S. dotyi by their greater length (up to 50 cm long) and breadth (4.5 mm broad) (Rosenvinge 1893; Wynne 1969).

Scytosiphon dotyi was described by Wynne (1969) with a type locality of Pillar Point, Half Moon Bay, San Mateo County, California. At that time Wynne reported
a distribution of his new species from Baja California, Mexico, northward to Oregon, USA, and its possible occurrence in the Kurils and Sakhalin, in the western Pacific Ocean. Scytosiphon dotyi differs from Scytosiphon lomentaria by the lack of constrictions in the tubular thalli, the absence of ascocyst-like cells and tufts of true hairs (Wynne 1969; Fletcher, 1987).

Taskin et al. (2011) reported 32 taxa (12 Rhodophyta, 13 Phaeophyceae, 6 Chlorophyta and 1 Magnoliophyta) at specific and infraspecific level of alien marine macrophytes occurring on the coast of Turkey. In this study, the alien brown alga Scytosiphon dotyi (Phaeophyceae, Scytosiphonaceae) is reported for the first time from Turkey. This species is established in the Mediterranean Sea and probably introduced into the Sea of Marmara (Turkey) by aquaculture or ballast water.

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