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Short Communication

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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) (Guıry & Guıry, 2011).

Two species of *Scytosiphon* have been reported from the Mediterranean Sea: *S. lomentaria* [= *S. simplicissimus* (Clemente) Cremades] and *S. dotyi* (Rıbera *et al.,* 1992). *Scytosiphon dotyi*, which was described by Wynne (1969), has been recorded from the Mediterranean Sea [Adriatic (Rıbera *et al.,* 1992), Italy (Furnarı *et al.,* 1999), and France (Verlaque, 2001)], the northeastern Atlantic [Britain (Fletcher, 1987), Spain (Bárbara *et al.,* 2005; Invernón *et al.,* 2009), and the Canary Islands (Haroun *et al.,* 2002; Gıl-Rodrıguez *et al.,* 2003; John *et al.,* 2004)], the North Pacific [California (Abbott & Hollenberg, 1976], the west coast of Mexico (Pedroche *et al.,* 2008), and Asia [Korea (Lee & Kang, 2001)].

Two species of the genus 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 (40º07’52″N; 26º21’22″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 constrictions, to 15 cm long and 1 mm wide (Fig. 1). Surface



Fig. 1: *Scytosiphon dotyi*. General view of plant.

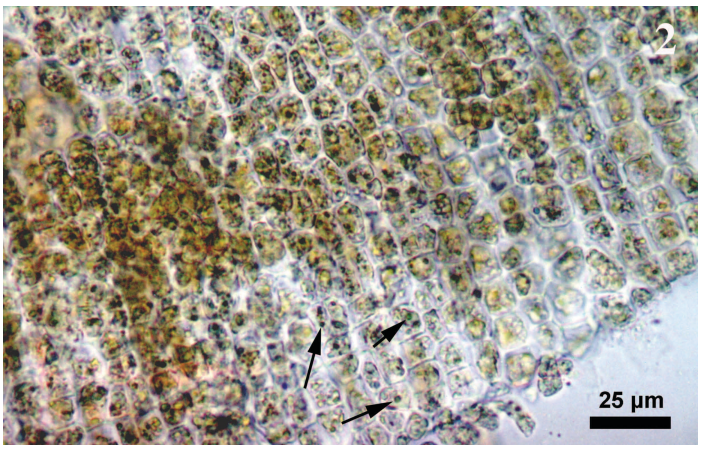

Fig. 2: *Scytosiphon dotyi*. Surface view and pyrenoids (arrows).

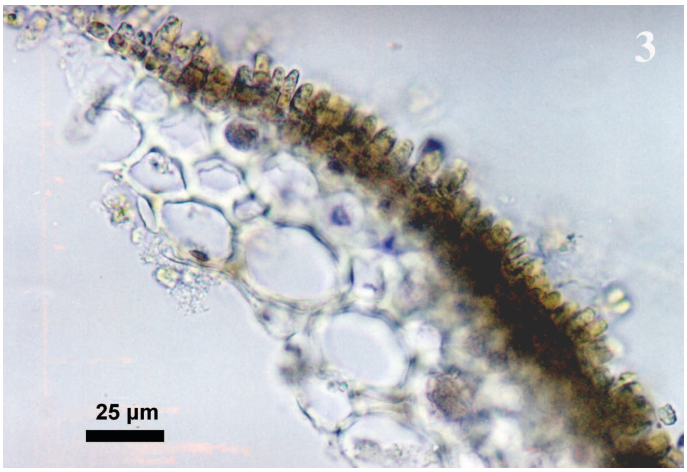

Fig. 3: *Scytosiphon dotyi*. Transection of thallus.

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*. 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 occurence 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).

Taskın *et al*. (2011) reported 32 taxa (12 Rhodophyta, 13 Phaeophyceae, 6 Chlorophyta and 1 Magnoliophyta) at specific and infraspecific level of alien marine macrophytes occuring 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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