

A RARE BROWN ALGA IN THE MEDITERRANEAN SEA: *COMPSONEMA SAXICOLA* (KUCKUCK) KUCKUCK (PHAEOPHYCEAE, SCYTOSIPHONACEAE)

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Abstract

Compsomena saxicola (Kuckuck) Kuckuck (Phaeophyceae, Scytosiphonaceae) is reported for the first time in the Aegean Sea (Turkey). It was collected growing as an epiphyte in the midlittoral zone (-0,5 m) from Ayvalik (eastern Aegean Sea, Turkey) and identified with its usual distromatic base. Only unilocular sporangia were observed.

Keywords : Aegean Sea, Algae.

Introduction

The genus *Compsomena* was established by Kuckuck [1] and *Compsomena gracile* Kuckuck [= *Compsomena minutum* (C. Agardh) Kuckuck] is the type species of the genus. *Compsomena saxicola* has been first described as "*Myrionema saxicola*?" from Helgoland in the North Sea [2], and it was subsequently transferred to the genus *Compsomena* [3]. *C. saxicola* (Kuckuck) Kuckuck has been reported from the Adriatic Sea and from the Gulf of Trieste (northern Adriatic, Italy) in the Mediterranean Sea till now.

The genus *Compsomena* has been assigned to the Ectocarpaceae [3], the Myrionemataceae [4], and more recently to the Scytosiphonaceae [5, 6]. The justification for placing this genus in the Scytosiphonaceae is based upon evidence from culture studies that demonstrate it to be a phase in the life history of *Petalonia* or *Scytosiphon* [5, 6]. *Compsomena minutum* shows two features which are characteristic for the Scytosiphonales [5]:

1. The presence of a single large lobed chloroplast per cell with a large pyrenoid in a pyrenoid sac.
2. A partly parenchymatous prostrate system morphologically similar to the knot filaments in the comparable thallus parts of *Scytosiphon* and *Petalonia*.

Material and Methods

Compsomena saxicola was collected in the midlittoral zone, as an epiphytic on *Chaetomorpha aerea* (Dillwyn) Kützing from Ayvalik (Aegean Sea, Turkey) in February 2005 and was preserved in 4% Formaldehyde in seawater. The identification of this alga was made according to the accounts in Kuckuck [2], and Fletcher [4].

Results

Compsomena Kuckuck 1899: 58

Compsomena saxicola (Kuckuck) Kuckuck 1953: 343

(*Myrionema saxicola* Kuckuck 1897: 381)

Thalli were epiphytic on *Chaetomorpha aerea* (Dillwyn) Kützing, 0,5 mm diameter, spherical and dark brown. In a squash preparation the thallus is seen to consist of a distromatic basal layer (Fig 1a). Phaeophycean hairs, unilocular sporangia and erect filaments arise from the basal cells. The erect filaments are simple, uniseriate, up to 10-15 cells long, the cells 7-11 μ m long, 8-10 μ m broad, and each cell contains one plate-like chloroplast with one pyrenoid. Unilocular sporangia are common, oval, 35-40 x 20-25 μ m, borne directly from the basal cells, sessile or 1-celled stalks (Fig 1b). Plurilocular sporangia are unknown in this species. The plants were observed occurring at a water temperature of 10 °C.

Compsomena saxicola has been reported from the Helgoland, England and Ireland, Scandinavia, the Azores, Italy and the Aegean Sea coast of Turkey (this paper).

Discussion

Compsomena saxicola was characterized as being lithophilic or saxicolous. But Turkish plants were determined as epiphytic on *Chaetomorpha aerea* in the midlittoral zone.

It has been showed a connection between a minute *Scytosiphon* (*Scytosiphon pygmaeus* Reinke) with *Compsomena sporangiiferum* Setchell et Gardner and *Streblonema anomalum* Setchell et Gardner. It has been reported that the Atlantic *Compsomena saxicola* is very similar to the Pacific *Compsomena sporangiiferum*. *C. sporangiiferum* was reported first time as epiphytic on *Nereocystis luetkeana* (Mertens) Postels et Ruprecht from Neah Bay (Washington, USA). *C. saxicola* was studied in culture by P.M.

Pedersen (unpubl.) and he reported that a connection with a parenchymatous, erect phase was not shown.

Compsomena saxicola is probably a summer annual, and it was recorded from April to October from England and Ireland [4]. It has been reported that the erect thalli were poorly developed in culture but were recognisable as like *Petalonia* or *Scytosiphon* [4]. It was also called that the environmental conditions played role, particularly temperature and photoregime in the relationship between the *Compsomena* microthalli and the erect macrothalli and *Compsomena*-like thalli showed maximum development in warm temperature/long day conditions.

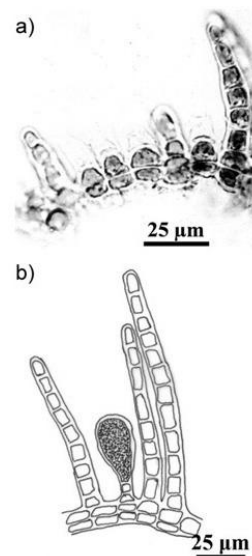


Fig. 1. *Compsomena saxicola*. a) Distromatic basal layer; b) nilocular sporangia and erect filaments.

References

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