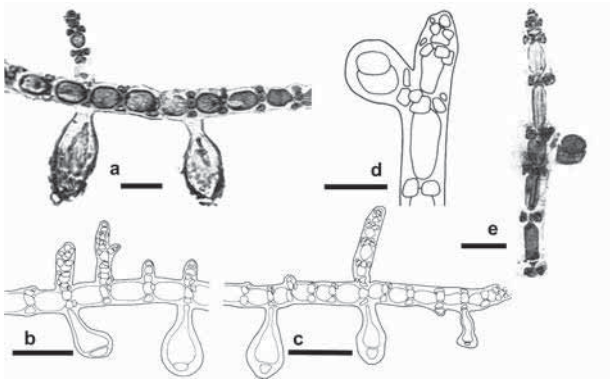
Ceramium bisporum D.L.Ballantine

Misidentification
Ceramium codii
(H. Richards) Mazoyer

a-c. Axes with rhizoids.
d, e. Apices with bisporangium.
Bars: a, d, e = 50 µm;
b, c = 100 µm.



Short description

Small (creeping axes less than 1 cm long), filamentous, uniseriate with cortication in nodes; prostrate axes branched, 40 µm in diameter, attached by two- (in the Atlantic) or three-celled (in the Mediterranean) rhizoids; short erect branches occasionally produced from the nodes of the prostrate axes, rarely to 1 mm in height: axial cells 25 µm in diameter; nodes of 4 squarish periaxial cells, 30 µm in diameter, normally undivided but occasionally with one additional cortical band produced acropetally; bisporangia, 35 µm in diameter, borne on a sporangial initial that is cut off from a periaxial cell; usually short, adaxial, single-celled involucral branch present; gametophytic plants unknown.

Distinguishing characteristics

The narrow axial cells, the nodes of 4 squarish and normally undivided periaxial cells, and the bisporangia up to 35 µm in diameter, are distinctive; confusion possible with:
- *Ceramium codii* (H. Richards) Mazoyer: diameter of the filaments greater (up to 75 µm); sporangia partially covered by multicellular involucre;
- *Ceramium inconspicuum* Zanardini: nodes with 2-3 transverse cell rows.

Biology / Ecology / Habitat

Deep subtidal communities, epiphytic on *Peyssonnelia rubra* (Greville) J. Agardh; present all year round.

Distribution

Worldwide: western Atlantic, described from Puerto Rico, (Ballantine 1990), Caribbean Islands, U.S. Virgin Islands. **Mediterranean**: recorded first in 1980 from Greece, north Aegean Sea (Athanasiadis, 1987, as *Ceramium codii*); successively recorded in Italy, Tuscan Archipelago (Sartoni and Boddi, 2002). The Mediterranean specimens differ from the Atlantic ones by the not-inflated tri-celled rhizoids and by the host (*Peyssonnelia* instead of dead calcareous foraminifers), so the identification requires confirmation by further investigations. Sartoni and Boddi (2002) and Cormaci *et al.* (2004) did not consider the species as introduced into the Mediterranean Sea.

Mode of introduction

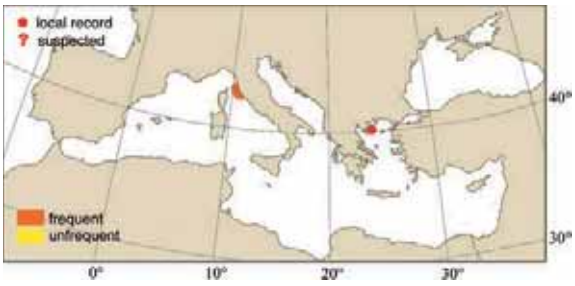
Shipping.

Establishment

Well established.

Importance to humans

None.



1st Mediterranean record
Aegean Sea, Greece, 1987 [1980].

Key references

• Athanasiadis A., 1987. *A survey of the Seaweeds of the Aegean Sea with taxonomic studies on species of the tribe Antithamnieae (Rhodophyta)*. Univ. Gothenburg, Suède, 174 p.
• Ballantine D. L., 1990. *Ceramium bisporum* (Rhodophyta, Ceramiales), an unusual new species from deep-water habitats in the Caribbean. *Phycologia,* 29:146-149.
• Cormaci M., Furnari G., Giaccone G. and Serio D., 2004. Alien macrophytes in the Mediterranean Sea: a review. *Recent Research Developments in Environmental Biology, India*, 1: 153-202.
• Sartoni G. and Boddi S., 2002. *Ceramium bisporum* (Ceramiaceae, Rhodophyta), a new record for the Mediterranean algal flora. *Botanica Marina,* 45: 566-570.