

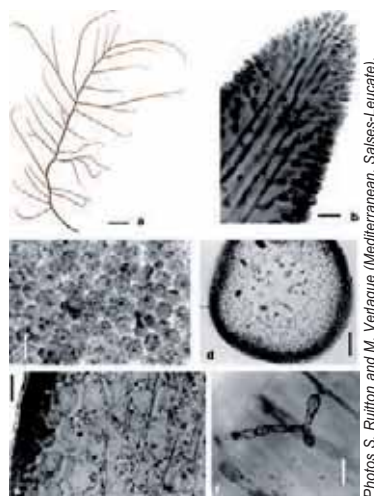
## *Solieria filiformis* (Kützinger) P.W. Gabrielson

### Relevant synonym

*Euhymenia filiformis* Kützinger

- a. Dried specimen. b. Longitudinal section of apex.  
c. Surface view. d, e: Transverse and longitudinal sections.  
f. Spur-shaped cell.

Bars: a = 1 cm; b, c, f = 20  $\mu$ m; d, e = 100  $\mu$ m.



Photos S. Ruitton and M. Verlaque (Mediterranean, Salses-Leucate).

### Short description

Medium (to 20 cm high), attached by an encrusting holdfast or free-floating, firm, cylindrical throughout, ranging from 0.5 to 1.5 mm in diameter; deep pink to purplish-red; usually densely branched to 2-3 orders; branches alternately, unilaterally or oppositely arranged; apices acute and long; apices with periaxial cells rotated about each axial file; medulla broad of lax entangled longitudinal filaments surrounded by large cells, grading into cortex of small pigmented cells; longitudinal medullary cells, 20-30  $\mu$ m in diameter, interspersed with rhizoidal filaments, 3-4  $\mu$ m in diameter; interconnecting spur-shaped cells present; many long plastids in surface view, becoming longer, slender to homogeneously filiform, forming delicate parietal loops in inner cortical cells; tetrasporangial plants with paler colour and more robust branches; tetrasporangia zonately to irregularly divided, distributed in outer cortex throughout the thallus, except main axes and apices; vegetative propagation by thallus fragmentation; fertile gametophytes never observed in the Mediterranean.

### Distinguishing characteristics

The thallus, 0.5-1.5 mm in diameter, usually densely branched alternately to unilaterally arranged, the many long plastids, the apices with periaxial cells rotated about each axial file, the medulla with spur-shaped cells and the absence of fertile gametophytes are distinctive; confusion possible with the other Solieriaceae introduced into the Mediterranean:

- *Agardhiella subulata* (C. Agardh) Kraft & M.J. Wynne: thallus broader, up to 2.5 mm in diameter; medullary filaments thinner, 10-12  $\mu$ m in diameter; plastids single and parietal in surface view, becoming dissected into small spherical bodies in inner cortical cells; spur-shaped cells absent; fertile gametophytes never observed in the Mediterranean;
- *Sarconema filiforme* (Sonder) Kylin and *Sarconema scinaoides* Børgesen: thallus subdichotomous throughout; fertile gametophytes observed in the Mediterranean; enveloping tissue around the carposporophyte absent;
- *Solieria dura* (Zanardini) F. Schmitz: thallus broader, up to 3.0-3.2 mm in diameter, laxly branched; branches divaricate, alternate, opposite to verticillate; fertile gametophytes observed in the Mediterranean; carposporophyte with a prominent enveloping tissue.

## Biology / Ecology / Habitat

Coastal lagoons; shallow subtidal communities; present all year round.

## Distribution

**Worldwide:** western Atlantic, described from Antigua, Caribbean (Kützing, 1863, as *Euhymenia filiformis*), North Carolina to Caribbean; eastern Atlantic, Canary Islands, Ghana, Gabon. **Mediterranean:** recorded first in 1922 from Italy, Mar Piccolo di Taranto (Cecere, 1990a, b; Perrone and Cecere, 1994); successively recorded in France at Salses-Leucate (Verlaque, 2000), Marseille (Klein and Verlaque, 2011); Italy, Venice (Curiel *et al.*, 2005); Israel (Einav, 2007).

## Mode of introduction

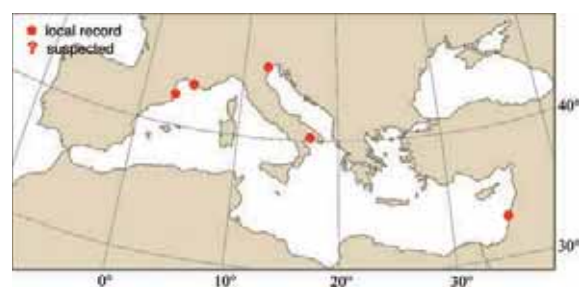
Shipping; secondary dispersal by oyster transfers.

## Establishment

Well established in coastal lagoons.

## Importance to humans

Can develop extensive drifting beds on the bottoms.



**1st Mediterranean record**  
Mar Piccolo di Taranto, Italy,  
1990 [1922].

## Key references

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- Perrone C. and Cecere E., 1994. Two solieriacean algae new to the Mediterranean: *Agardhiella subulata* and *Solieria filiformis* (Rhodophyta, Gigartinales). *Journal of Phycology*, 30: 98-108.