

Stypopodium schimperi (Kützting) Verlaque & Boudouresque

Relevant synonyms

Stypopodium tubruquense
Nizamuddin & Godeh
Zonaria schimperi Kützting

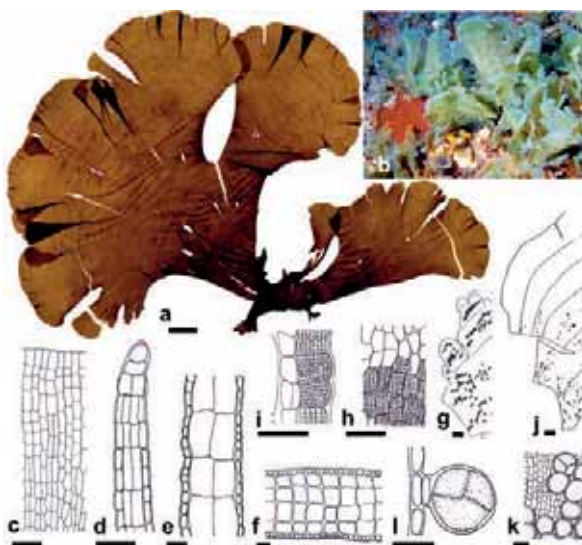
Misidentifications

Spatoglossum asperum
J. Agardh (?)
Spatoglossum solieri
(Chauvin ex Montagne)
Kützting
Stypopodium fuliginosum
(Martius) Kützting
Stypopodium zonale (J.V.
Lamouroux) Papenfuss

a. Dried specimen. b. Habit.
c. Surface view of apical
margin. d. Longitudinal
section of apical margin.
e. Longitudinal section of
upper portion.

f. Transverse section of lower portion. g. Arrangement of male sori on the blade. h. Surface view of male sorus. i. Longitudinal section of male sorus. j. Arrangement of tetrasporangia on the blade. k. Surface view of tetrasporangia. l. Longitudinal section with tetrasporangium.

Bars: a = 1 cm; c-f, h, i, l, k = 50 µm; g, j = 1 mm.



Photos a: S. Ruiton (Mediterranean, Cyprus). b: J.G. Hamelin (Mediterranean, Lebanon). Drawings: Verlaque and Boudouresque, 1991. c: (Red Sea), e-k: (Mediterranean), with the kind permission from the ADAC-Cryptogamie.

Short description

Medium (to 18 cm high); blades fan-shaped, irregularly branched, up to 10 layers of cells; growing margin flat; calcification absent; in transverse section cells sub-rectangular and arranged in regular rows; hairs in concentric lines; tetrasporangia external to the blade, with 1-2 stalk cells.

Distinguishing characteristics

The growing margin flat, the absence of calcification, the hairs in concentric lines and the tetrasporangia external to the blade are distinctive; confusion possible with other fan-shaped Dictyotales occurring in the Mediterranean:

- *Padina* spp.: growing margin inrolled; outer calcification;
- *Spatoglossum variable* Figari & De Notaris: hair tufts scattered; cells irregular and not arranged in rows in transverse section; tetrasporangia sunk in the thallus.

Biology / Ecology / Habitat

Shallow subtidal communities; annual (spring - autumn).

Distribution

Worldwide: Red Sea, described from Egypt, (Kützing, 1849, as *Zonaria schimperi*); Indian Ocean, Somalia; north-eastern Atlantic, Canary Islands (introduced, first observation in 1997; Sansón *et al.*, 2002). **Mediterranean:** possibly recorded first in 1973 from Israel (Lundberg, 1980, as *Spatoglossum asperum*); successively recorded in Israel (Hoffman and Dubinsky, 2010); Libya (Nizamuddin, 1981, as *Spatoglossum solieri*; Nizamuddin and Godeh, 1989, as *Stypopodium tubruquense*); Syria (Mayhoub, 1989, as *Stypopodium fuliginosum*); Egypt, Turkey and Cyprus (Verlaque and Boudouresque, 1991); Greece, Milos Island (Sartoni and De Biasi, 1999), south-eastern Aegean Sea, Rhodes Island (Tsiamis *et al.*, 2007), Messiniakos Gulf (Bardamaskos *et al.*, 2009), Chios Island (Katsanevakis and Tsiamis, 2009), south-west Aegean Sea and Crete (Tsiamis *et al.*, 2010), Cyclades Islands (S. Giakoumi in Nicolaidou *et al.*, 2012); Lebanon (Bitar *et al.*, 2000).

Mode of introduction

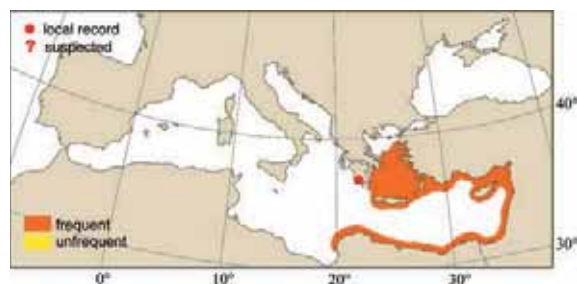
Via the Suez Canal.

Establishment

Invasive; very common in the eastern basin.

Importance to humans

May have an adverse impact on biodiversity (competition) and on tourism (cast ashore in large quantities on the beaches).



1st Mediterranean record
Israel, 1980 [1973] (?);
Libya 1981 [1977].

Key references

- Kützing F.T., 1849. *Species algarum*. pp. [i]-vi, [1]-922. Lipsiae [Leipzig]: Brockhaus.
- Lundberg B., 1980. Selectivity of food algae by the herbivorous fish *Siganus rivulatus* in the marine vegetation at Mikhmoret (the Mediterranean coast of Israel). PhD. Thesis, Hebrew University, 176 p.
- Mayhoub H., 1989. Envahissement de la côte Syrienne par une algue brune de mer Rouge. *Damascus University Journal*, 5(18): 65-79.
- Nizamuddin M. and Godeh M., 1989. *Stypopodium tubruquense* (Phaeophyta, Dictyotales) a new species from the Mediterranean Sea. *Willdenowia*, 18: 603-608.
- Verlaque M. and Boudouresque C.-F., 1991. *Stypopodium schimperi* (Buchinger ex Kützing) Verlaque et Boudouresque comb. nov. (Dictyotales, Fucophyceae), algue de mer Rouge récemment apparue en Méditerranée. *Cryptogamie, Algologie*, 12: 195-211, 69 figs.