

Family Timeidae Topsent, 1928

Klaus Rützler

Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, DC, 20560-0163, USA.
(ruetzler.klaus@nmnh.si.edu)

Timeidae Topsent (Demospongiae, Hadromerida) now contains only *Timea* because *Diplastrella* was moved to the Spirastrellidae. These sponges are thin, colorful (mostly red) crusts with choanosomal tylostyles arranged in vague tracts, ectosomal tylostyles in bouquet arrangement. Euasters occur throughout the body and form a dense layer at the surface. Species are cryptic and are found in shaded habitats of warm-temperate to tropical shallow-water environments.

Keywords: Porifera; Demospongiae; Hadromerida; Timeidae; *Timea*.

DEFINITION, DIAGNOSIS, SCOPE

Synonymy

Timeidae Topsent, 1928c: 145. Choanitidae de Laubenfels (subfamily Timeinae Topsent), de Laubenfels (1936a, 1950a). Spirastrellidae, in part, Wiedenmayer (1977b).

Definition

Crustose Hadromerida with tylostyles and euasters.

Diagnosis

Sponges form very thin crusts on shells or under rock. Tylostyles are arranged in tracts ending as bouquets at the sponge surface where they cause a hispid appearance. Additional tylostyles occur in criss-cross fashion between the tracts. Microscleres are euasters, which are dispersed throughout the tissue, denser at the substrate and toward the surface, and are forming an ectosomal crust.

Scope

Of three nominal genera only one, *Timea*, is recognized.

History and biology

All species known in this family are encrusting (1 mm thick, or less), and therefore have a similar body plan as many spirastrellids and clionoids. Tracts of tylostyles rise from the substrate toward and beyond the surface (ectosome), causing a velvety feel when touched. Microscleres form a protective crust at the surface. The major exhalant canals leading toward the oscula bulge up and give a radiating vein-like appearance. Color reported for Timeidae is generally red or brown. The sponges cover only a few square centimeters of substratum and are best found by examining the lower surfaces of rock or coral plates in shallow water. Nothing is known about reproduction or other aspects of biology.

Remarks

Recent authors treated *Diplastrella* as part of the Timeidae (Hartman, 1982; Hooper & Wiedenmayer, 1994). With the transfer

of *Diplastrella* to the Spirastrellidae (see Rützler, this volume), only one genus, *Timea*, remains in the family.

TIMEA GRAY, 1867

Synonymy

Hymedesmia, in part, Bowerbank, 1866: 149; 1874b: 71. *Timea* Gray, 1867a: 544. *Kotimea* de Laubenfels, 1936a: 147. *Halicometes sensu* de Laubenfels, 1950a: 99. Not *Halicometes* Topsent, 1898: 112.

Type species

Hymedesmia stellata Bowerbank, 1866 (by monotypy).

Definition

Same as family.

Diagnosis

Same as family.

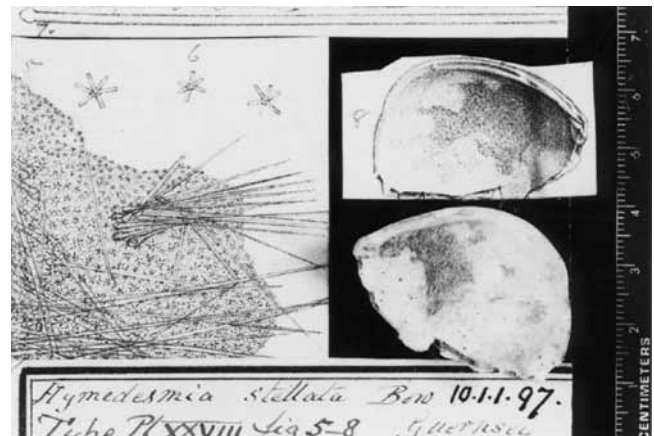


Fig. 1. *Timea stellata* (Bowerbank). Illustration original prepared by the author of the holotype and kept with the specimen in the collection of BMNH. It was the base of Bowerbank's (1874b) plate XXVIII figs 6–8.

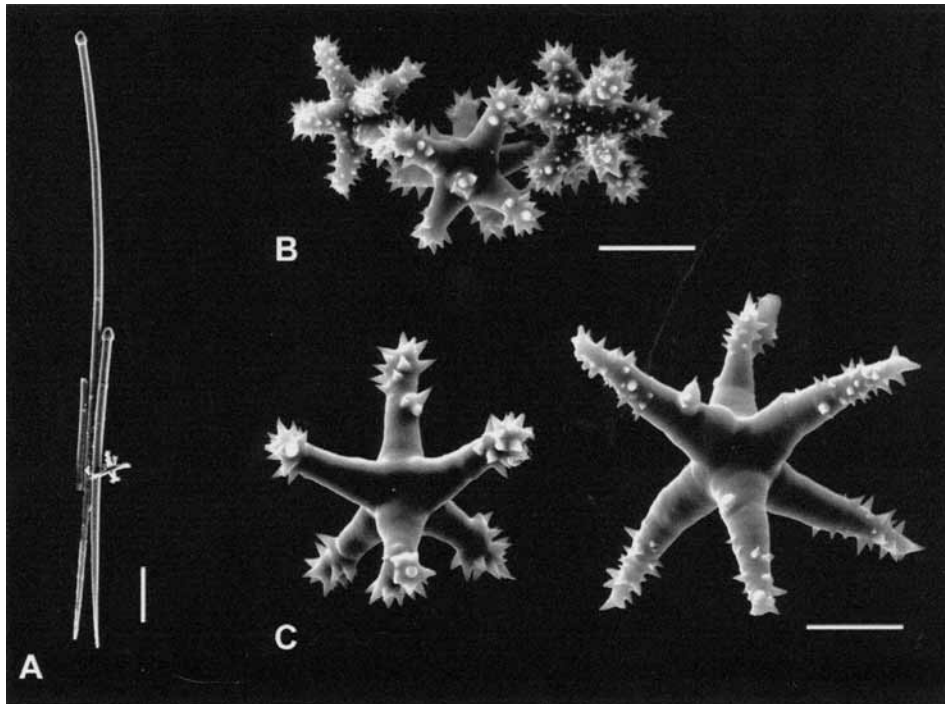


Fig. 2. *Timea stellata* (Bowerbank). SEM images of spicules. A, tylostyles of two size classes, and euaster (scale 20 μm). B, small euasters (scale 5 μm). C, large euasters (scale 5 μm).

Previous review

Hooper & Wiedenmayer (1994).

Description of type species

Timea stellata (Bowerbank) (Figs 1–2).

Synonymy. *Hymedesmia stellata* Bowerbank, 1866: 150; 1874b: 71, pl. XXVIII figs 5–8. *Timea stellata*; Gray, 1867a: 544.

Material examined. Holotype: BMNH 10.1.1.97 – Guernsey, Channel Islands, English Channel.

Description. The dry specimen is grayish drab and covers the interior surface of a bivalve shell. The thin (>1 mm) crust spreads over less than 2.5 cm². Tylostyles run in strands parallel to the substrate and are without orientation between the tracts; toward the surface they fan out and protrude from the sponge in bouquet fashion. Euasters occur throughout the body but form a dense crust in the ectosome. The tylostyles are straight or slightly curved, with

inconspicuous subterminal head and the opposite end gradually tapering to a sharp point. Many are broken in the slide preparation but there seem to be two size classes, 90–120 \times 2.5–3.5 μm and 190–230 \times 2.5–4.5 μm . The euasters have a small center and 6–8 (mostly 7) rays. The rays are either smooth or microspined along the shaft but are always spined near the distal end. Euasters occur in two size categories which measure 8–10 μm and 14–22 μm in diameter.

The species was recorded from the North Atlantic, the West Indies, and the Southwestern Pacific off East Australia but the conspecificity of the latter populations is doubtful (Hooper & Wiedenmayer, 1994).

Remarks. *Kotimea* was established by de Laubenfels (1936a) (with type species *Hymedesmia moorei* Carter, 1880b: 50, pl. 4 fig. 11, by original designation), for Timeidae with styles in addition to tylostyles. However, the type specimen is lost and neither Carter's description nor his figure indicate the presence of styles.