Systema Porifera: A Guide to the Classification of Sponges, Edited by John N.A. Hooper and Rob W.M. Van Soest

Order Amphidiscosida Schrammen, 1924

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Recent Amphidiscosida Schrammen (Hexactinellida: Amphidiscophora) consists of three families containing twelve genera, only one of which, *Hyalonema*, is divided into subgenera, presently numbering 12. The order is characterized by presence of amphidiscs and absence of hexasters as microscleres. All members are lophophytous, with body form varying from simple ovoid to cone, cup, cylinder, and bilaterally symmetrical variants of these. Dermalia and atrialia are pinular pentactins and, rarely, hexactins; supporting hypodermalia and hypoatrialia are oxypentactins. Basal anchors, where known, are toothed monactins. Families are distinguished by form of main choanosomal megascleres: diactins in Hyalonematidae, pentactins in Pheronematidae, and tauactins in Monorhaphididae.
Keywords: Porifera; Hexactinellida; Amphidiscophora; Amphidiscosida; Hyalonematidae; Pheronematidae; Monorhaphididae.

DEFINITION, DIAGNOSIS & SCOPE

Synonymy

Amphidiscaria Schrammen, 1924a. Amphidiscosa Reid, 1958a.

Definition

Amphidiscophora with amphidisc microscleres and without hexaster microscleres.

Diagnosis

Recent Amphidiscosida are distinguished from the other Amphidiscophora order, the fossil Hemidiscosida Schrammen, by amphidisc, rather than hemidisc, microscleres. All Amphidiscosida are lophophytous, with skeletons composed of loose (non-fused) spicules. Body forms are highly variable, including solid ovoids and cylinders, solid or hollow funnels or cups, and flattened bilateral variations of these. Some patterns of spicule form and location are consistent for all families, including pinular pentactins and rarely hexactins as dermalia and atrialia, oxypentactins as hypodermalia and hypoatrialia, basalia (where known) as monactins with one to many teeth at the lower 'center' end, three forms of amphidiscs and oxyhexactins as microscleres. Variation occurs in basalia (numbers of basalia, numbers of basalia bundles, compactness of basalia bundles, and numbers of head teeth), presence and form of prostalia (pinular diactins, monactine sceptres or none), and form of main choanosomal spicules. Families are presently distinguished most easily on the basis of the latter: principalia are diactins in Hyalonematidae, tauactins in Monorhaphididae, and pentactins in Pheronematidae.

Scope

Three families: Hyalonematidae Gray, 1857, Monorhaphididae Ijima, 1927, Pheronematidae Gray, 1870.

KEY TO FAMILIES

(1) Major choanosomal spicules are diactins ..... **Hyalonematidae**
Major choanosomal spicules other than diactins 2
(2) Major choanosomal spicules are tauactins ..... **Monorhaphididae**
Major choanosomal spicules are pentactins ..... **Pheronematidae**