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

Order Aulocalycoida Tabachnick & Reiswig, 2000

Henry M. Reiswig

Natural History Section, Royal British Columbia Museum, 675 Belleville Street, Victoria, British Columbia, Canada V8W 9W2 and Biology Department, University of Victoria, P.O. Box 3020 STN CSC, Victoria, British Columbia, Canada V8W 3N5. (hmreiswig@shaw.ca)

Aulocalycoida Tabachnick & Reiswig (Hexactinellida, Hexasterophora) contains two families and seven genera. The order is characterized by a loose dictyonal framework built around a primary set of longitudinal strands constructed of extended dictyonal rays. Meshes are irregular. The families are differentiated by details of strand construction. Strands of Aulocalycidae contain single continuous axial filaments which are unlimited in length. Strands of Uncinateridae contain overlapping axial filaments contributed by a series of hexactins; individual constituent dictyonal rays are elongate but not unlimited in length. The poorly supported frameworks of distal growing margins are delicate and flexible, unlike those of the hexactinosidans and lychniscosidans which are rigid and brittle throughout.
Keywords: Porifera; Hexactinellida; Aulocalycoida; Aulocalycidae; Uncinateridae.

DEFINITION, DIAGNOSIS, SCOPE

Synonymy

Aulocalycoida Tabachnick & Reiswig, 2000.

Definition

Basiphytous Hexasterophora in which a rigid dictyonal framework is constructed around a series of primary longitudinal strands formed of long extensions of dictyonal rays; strands are either uniaxial, each composed of a single dictyonal ray which is unlimited in length (aulocalycoid pattern) or multiaxial, each composed of overlapping rays of a longitudinal dictyonal series (paraulocalycoid pattern).

Diagnosis

Body form varies from system of branching tubes with sessile or extended lateral oscula to pleated calyx to branching or unbranched fan or tongue; channelization is absent or consists of shallow epirhyses and aporhyses, or schizorhyses, and possibly diarhyses; framework structural pattern is either aulocalycoid or paraulocalycoid; the aulocalycoid pattern (Aulocalycidae) consists of single continuous axial filaments, formed from single dictyonal rays which are potentially unlimited in length; hexactin centers are not appended to those strands which are mainly supported by synapticulae; paraulocalycoid strands (Uncinateridae) contain three or more overlapping axial filaments at any point; they consist of a series of hexactin centers, each contributing distal and proximal axial filaments to the strand, with individual dictyonal rays being elongate but not unlimited in length; primary framework components of all members are poorly supported by sparse synapticula or secondary dictyonalia near growing margins, hence the frameworks of these areas are delicate and flexible, unlike the more rigid and brittle margins of hexactinosidan and lychniscosidan frameworks; dermalia and atrialia are usually large rough pentactins, but may occasionally be smooth and sometimes atriailia are mainly hexactins; accessory parenchymal pentactins and hexactins occur in some species; sceptrules and uncinates are usually absent but occur in some members; microscleres always include regular discohexasters, to which may be added discohexactins, spirodiscohexasters or rhopalasters.

Scope

Two Recent families: Aulocalycidae Ijima, 1927 and Uncinateridae fam. nov.

KEY TO FAMILIES

(1) Longitudinal strands are uniaxial, unlimited in length ..... **Aulocalycidae**
Longitudinal strands are multiaxial, formed of overlapping rays in series ..... **Uncinateridae**