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Order Dendroceratida Minchin, 1900

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Dendroceratida (Demospongiae) contains two families and eight valid genera. Sponges are usually soft and fragile, always with a fibre skeleton but where fibres are reduced in relation to soft tissue volume, and the endosomal matrix is weakly infiltrated by collagen. Fibres are either dendritic or anastomosing, where in the latter case there is no clear differentiation between primary or other fibres. Fibres always contain pith, are thick, strongly laminated, pith in the fibres is markedly disjunct from the bark, and some genera have cellular (degenerate spongocyte) elements incorporated in the bark and to a lesser extent in pith. Free fibrous spicules occur in one genus.
Keywords: Demospongiae; Dendroceratida; Darwinellidae; Dictyodendrillidae.

DEFINITION, DIAGNOSIS, SCOPE

Synonymy

Dendroceratida Minchin, 1900.

Definition

Demospongiae in which a fibre skeleton is always present but, as compared to Dictyoceratida, is reduced in relation to soft tissue volume. The skeleton arises from a continuous spreading basal plate, and adopts either a dendritic or an anastomosing pattern. In anastomosing forms there is never any clear size distinction between primary and secondary elements. The fibres always contain pith and are strongly laminated, usually quite stout, and in some genera cellular (degenerate spongocyte) elements are incorporated in the bark and to a lesser extent in pith. Free fibrous spicules may supplement the main skeleton. The choanocyte chambers are eurypylous. Mesohyl cell population usually includes secretory cells (termed spumous cells), although their occurrence cannot yet be verified for all genera. Matrix volume is low in relation to chamber and canal volume, and the endosomal matrix is only weakly infiltrated by collagen. This, in conjunction with the light fibre skeleton, makes the sponges soft and fragile. The pith in the fibres is markedly disjunct from the bark, and in structure is close to that of the Verongida. It is common to find dark fibre pigmentation contrasting with the matrix pigmentation, the latter always being uniform throughout the sponge. Larvae are large, incubated parenchymellae, with complex structure, differentiated histology and a terminal clump of long cilia. Biochemically, members of this group are characterised by a moderate sterol content in conjunction with the presence of terpenes, which are always diterpenes.

Scope

Two families: Darwinellidae Merejkowsky, 1879 (including Aplysillidae Lendenfeld, 1883), Dictyodendrillidae Bergquist, 1980b.

KEY TO FAMILIES

(1) Fibre skeleton completely dendritic, with fibres always arising from a flat basal spongin plate, and fibres with strongly laminated bark surrounding central distinct pith region ..... **Darwinellidae**
Fibre skeleton is reticulate with perfectly regular to slightly irregular meshes, and fibres are strongly and coarsely laminate with pronounced pith ..... **Dictyodendrillidae**