Spongophloea, a new genus of red algae based on Thamnoclonium sect. Nematophorae Weber-van Bosse (Halymeniales)

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The red algal order Halymeniales contains a relatively high percentage of sponge-associated taxa. These species are predominantly classified in two genera, Thamnoclonium and Codiophyllum (and to a lesser extent, Carpopeltis), and are chiefly distributed in temperate waters along the South African and Australian coasts. Three rare species of Thamnoclonium (T. tissotii, T. treubii, and T. procumbens), however, were originally described by Weber-van Bosse from tropical localities in Indonesia, the Philippines, and northern Australia. These formed her new Thamnoclonium sect. Nematophorae and differ from typical Thamnoclonium in having a pseudoparenchymatous medulla in vegetative tissue and in the production of moniliform chains of cells from the cortex. Recent collections of T. tissotii from Western Australia included tetrasporangial and cystocarpic specimens, the latter previously unrecorded for the section. Phylogenetic analyses of rbcL sequence data generated from these and other specimens revealed that the genus *Thamnoclonium* is presently polyphyletic. Although the phylogenetic tree was not completely resolved, sponge-algal associations in the Halymeniales seem to have evolved independently at least four times. Specimens of T. tissotii formed a sister relationship with Codiophyllum. Thus, both morphological and DNA sequence analyses support the segregation of Thamnoclonium sect. Nematophorae as a new genus, for which the name Spongophloea is proposed, in recognition of its seemingly obligate relationship with the sponge that coats the thallus surface.

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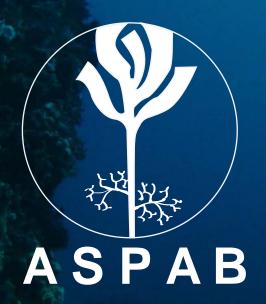






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