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

Huisman, John M.*[1,2], Olivier De Clerck[3], Willem F. Prud'homme van Reine[4] and Michael A. Borowitzka[1]

[1]School of Biological Sciences and Biotechnology, Murdoch University, Murdoch 6150, W.A.,

[2]Western Australian State Herbarium, Department of Environment and Conservation, George St, Kensington, W.A.,

[3]Phycology Research Group, Department of Biology, Ghent University, Krijgslaan 281, S8 B-9000 Ghent, Belgium

[4]Netherlands Centre for Biodiversity Naturalis (section NHN), Leiden University, P.O. Box 9514, 2300 RA Leiden, The Netherlands

Author contact: J.Huisman@murdoch.edu.au

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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