BLUMEA 38 (1993) 237–239

SPONGITES SULAWESIENSIS, A NEW SPECIES OF CORALLINACEAE (CORALLINALES, RHODOPHYTA) FROM THE SPERMONDE ARCHIPELAGO, SULAWESI, INDONESIA

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SUMMARY

A new species of coralline algae, *Spongites sulawesiensis*, is described. Its relationship to other species belonging to the genus *Spongites* is discussed. Also a new combination is made in the genus *Mesophyllum*, *M. funafutiense*.

INTRODUCTION

A critical study of the nongeniculate Corallinaceae (Corallinales, Rhodophyta) from the Spermonde Archipelago, Southwest Sulawesi, Indonesia (Verheij, 1992: fig. 1), has been carried out. More than 750 collections, including type and other relevant collections, were examined. Among these, there is one species new for science and one species is referred to another genus. In the present paper this new species is described and the new combination is proposed.

OBSERVATIONS AND DISCUSSION

Spongites sulawesiensis Verheij, *spec. nov.*

Spongites sulawesiensis characteribus generis *Spongites*. *S. sulawesiensis* a speciebus aliis generis *Spongites* differt corona circa pores tetrasporangiales absente, columella in centro conceptaculae tetrasporangialis presente, et tectum tetrasporangiale plus quam 15 strata cellularum crassum. — Holotypus: *Verheij 1184*, Kudingareng Keke Island, SW Sulawesi, Indonesia, depth 25 m, 16-vii-1990.

Plants encrusting or encrusting with branches. Crustose parts up to 10 mm thick. Thallus pseudoparenchymatous; cells of adjacent filaments connected laterally by cell fusions connections.

Crustose parts and sheet-like parts of thalli dorsiventral and monomerous; ventral region composed of filaments more or less parallelling the substratum and organized mostly in a noncoaxial manner (cells 6–12 μm in diameter and 15–20 μm long); dorsal region composed of portions of filaments curving outwardly from the ventral region towards the surface (cells 5–8 μm in diameter and 8–12 μm long).

Trichocytes (cells 8–13 μm in diameter and 15–20 μm long) present, usually occurring solitary, in vertical rows, or in small horizontal fields at the thallus surface, sometimes becoming buried.

Filaments each terminated by a single, rounded epithallial cell (cells 5–8 µm in diameter and 3–5 µm long) and one subepithallial meristematic cell producing new epithallial cells outwardly or additional vegetative cells inwardly.

Tetrasporangial conceptacles 650–800 µm internal diameter and 175–225 µm internal height, raised above the surrounding thallus surface. Tetrasporangial conceptacle roof 15–25 cells thick, formed by filaments surrounding the tetrasporangial disc. Cells, surrounding the pore canal, more or less parallel to the thallus surface orientated and protruding into pore canal. Old tetrasporangial conceptacles filled up and becoming overgrown. A large, central columella present.

Male conceptacles and female conceptacles not observed.

Carposporangial conceptacles (600–700 µm internal diameter and 175–225 µm internal height) raising above thallus surface.

Diagnostic features – *Spongites sulawesiensis* is distinguished from other species of *Spongites* examined in having the following combination of features:

— Trichocytes solitary, in vertical rows or horizontal fields.
— Tetrasporangial conceptacle dimensions (650–800 µm internal diameter, 175–225 µm internal height); roof 15–25 cell layers thick.
— Large, central columella present.
— Carposporangial conceptacle dimensions (600–700 µm internal diameter, 175–225 µm internal height).
— Gonimoblast filaments confined to the periphery of the fusion cell.

Remarks – Penrose (1991) presented an account to *Spongites fruticulosus*. *Spongites fruticulosus* differs from *Spongites sulawesiensis* in: a) presence of a sieve-like plug in immature tetrasporangial conceptacles, b) thickness of the tetrasporangial conceptacle roof (8–12 versus 15–25 cells), and c) diameter of the tetrasporangial conceptacles (350–595 µm versus 650–800 µm). Chamberlain (1993) referred two species to the genus *Spongites*, i.e. *S. yendoi* and *S. decipiens*. Both species differ from *S. sulawesiensis* in: a) the diameter of the tetrasporangial conceptacles (< 500 µm), b) the diameter of the carposporangial conceptacles (< 500 µm), and c) thickness of the conceptacle roof (< 10 cells).

Spongites sulawesiensis is in appearance difficult to distinguish from *Neogoniolithon brassica-floridum*; however, anatomically this is much easier.

Etymology – The proposed epithet *sulawesiensis* refers to the Indonesian Island where the species was found for the first time.

Representative specimens examined: Barang Lompo Island, depth 2–20 m, *Verheij 0041* (holotype), 13-xii-1988; *Verheij 0078*, 22-i-1989; *Verheij 0083*, 22-i-1989; *Verheij 0458*, 24-vi-1989; *Verheij 0687*, 18-x-1989. Bone Tambung Island, depth 20 m, *Verheij 1010*, 23-v-1990. Kudingareng Keke Island, depth 5–25 m, *Verheij 0409*, 15-viii-1989; *Verheij 0508*, 28-viii-1989; *Verheij 0554*, 22-ix-1989. Samalona Island, depth 5 m, *Verheij 0518*, 31-viii-1989. All from the Spermonde Archipelago, SW Sulawesi, Indonesia.

Mesophyllum funafutiense (Foslie) Verheij, *comb. nov.*

Lithothamnion philippii Foslie f. *funafutiense* Foslie, Kong. Norske Vid. Selsk. Skr. (1899) (2) 1–5 (*'funafutiensis'*). — *Lithothamnion funafutiense* (Foslie) Foslie, Bot. Tidskr. 24 (1901) 17.

ACKNOWLEDGEMENTS

Sincere thanks are due to Prof. Dr. C. Kalkman, Dr. G.M. Lokhorst, and Dr. W.F. Prud'homme van Reine, for critically reading the manuscript, to Dr. D. Penrose and Dr. Wm J. Woelkerling for fruitful discussions, and to Dr. H.P. Nooteboom who provided the Latin diagnosis.

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