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COMPENDIUM of marine species from New Caledonia



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Diversity of stylasterid corals (Cnidaria: Hydrozoa: Stylasteridae) in deep water habitats of New Caledonia

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Stylasterid corals are among the most important habitat-forming organisms on hard substrates in the deep-sea. Based on more than 3.000 specimens collected during the 2003 *Norfolk 2* survey off southern New Caledonia, I here present a report of the deep water stylasterid fauna discovered in the region. Morphological analyses of the collected specimens and comparison to type and non-type material deposited at the National Museum of Natural History, Smithsonian Institution, revealed 49 species (26 undescribed) in twelve genera (one of which new). The most speciose genera are *Crypthelia* (13 species, 9 of which undescribed), *Conopora* (9 species, 6 of which undescribed), and *Stylaster* (7 species, 3 of which undescribed). Previously known species are: *Adelopora crassilabrum*, *Adelopora fragilis*, *Calyptopora reticulata*, *Calyptopora sinuosa*, *Conopora anthohelia*, *Conopora candelabrum*, *Conopora laevis*, *Crypthelia cryptotrema*, *Crypthelia fragilis*, *Crypthelia polypoma*, *Crypthelia robusta*, *Inferiolabiata lowei*, *Lepidopora microstylus*, *Lepidopora polystichopora*, *Lepidotheca chauliostylus*, *Pseudocrypthelia pachypoma*, *Stylaster horologium*, *Stylaster imbricatus*, and *Systemapora ornata*. Another three species are tentatively assigned to *Lepidopora sarmentosa*, *Stylaster eguchii*, and *Stylaster multiplex*, but further studies are necessary to confirm these identifications. Diversity of stylasterids from southern New Caledonia (49 species) is greater than that of the entire Caribbean (42 species; Cairns, 1986), and is only surpassed by that of New Zealand (59 extant species; Cairns, 1991). Additionally, preliminary DNA-based analyses using mtDNA 16S (see Lindner, 2005, for methods) indicate the presence of putative cryptic species off New Caledonia (e.g., *Conopora candelabrum*). Moreover, non-exhaustive examination of specimens collected by previous expeditions in other regions of New Caledonia, indicate the presence of additional species. Therefore, it is possible that the ongoing study of stylasterids from New Caledonia will reveal that the region harbors the world's largest stylasterid fauna.

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