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The Azooxanthellate Scleractinia (Coelenterata: Anthozoa) of Australia

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ABSTRACT. A total of 237 species of azooxanthellate Scleractinia are reported for the Australian region, including seamounts off the eastern coast. Two new genera (*Lissotrochus* and *Stolarskicyathus*) and 15 new species are described: *Crispatotrochus gregarius, Paracyathus darwinensis, Stephanocyathus imperialis, Trochocyathus wellsi, Conocyathus formosus, Dunocyathus wallaceae, Foveolocyathus parkeri, Idiotrochus alatus, Lissotrochus curvatus, Sphenotrochus cuneolus, Placotrochides cylindrica, P. minuta, Stolarskicyathus pocilliformis, Balanophyllia spongiosa*, and *Notophyllia hecki*. Also, one new combination is proposed: *Petrophyllia rediviva*. Each species account includes an annotated synonymy for all Australian records as well as reference to extralimital accounts of significance, the type locality, and deposition of the type. Tabular keys are provided for the Australian species of *Culicia* and all species of *Conocyathus* and *Placotrochides*. A discussion of previous studies of Australian azooxanthellate corals is given in narrative and tabular form. This study was based on approximately 5500 previously unreported specimens collected from 500 localities, as well as a re-examination of most of the types and previously reported specimens from the Australian region.

Fifty-six species are recorded as new to Australia; 183 state range extensions are listed; and 96 worldwide bathymetric range extensions are noted. In order to characterize the Australian fauna, all 703 known azooxanthellate species were tabulated as to coloniality, method of attachment, and depth range: 187 species are colonial, 516 solitary; 373 are attached, 265 free, and 54 transversely dividing; and 200–1000 m is the most common depth range. Compared to all azooxanthellate species, those from Australia have a slightly higher percentage of species that are solitary and unattached (or transversely dividing), due to a disproportionate number of species in the families Flabellidae and Turbinoliidae. Bathymetrically they are typical of the worldwide fauna. Sixty-seven species are endemic to the Australian region. Both UPGMA cluster analysis and MDS ordination reveal two main regions: a northern tropical region and a southern warm temperate region, consistent with zonation patterns of shallow-water marine invertebrates.

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