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Eocene phymaraphiniid demosponges from South Western Australia: filling the gap

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We describe two new genera of phymaraphiniid lithistid sponges *Twertupia* gen. nov. and *Pickettispongia* gen. nov. from the upper Eocene Pallinup Formation of South Western (SW) Australia based on new, rich and very well preserved material. Type material of these two genera, earlier described from poorly preserved material, were originally attributed to *Thamnospongia subglabra* and *Stachyspongia neoclavatela* (in case of species of *Twertupia*), and to *Discoderma tabelliformis* (case of species of *Pickettispongia*). This is the first record of bodily preserved phymaraphiniid sponges from Eocene rocks, as well as from the southern hemisphere. We discuss extant and fossil representatives of Phymaraphiniidae and their geographical distribution, concluding that the present day occurrences of these sponges are the result of a much larger Mesozoic Tethyan distribution.

Key words: Lithistid sponges, Demospongiae, Phymaraphiniidae, Eocene, extant, Australia.

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