

New Species of Scalibregmatidae (Annelida) from Slope and Abyssal Depths off Eastern Australia

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ABSTRACT. Seven new species of Scalibregmatidae are described from deep waters off the east coast of Australia. Samples were collected as part of the RV *Investigator* voyage IN2017_V03 in May/June 2017 using a Brenke sledge and 0.25 m² box core. Sample depths reported in the present study were from the lower continental slope of about 2450 m to abyssal depths up to 4280 m. These collections provide the first scalibregmatid polychaetes to be described from deep water off Australia. The new species of Scalibregmatidae are in the genera *Asclerocheilus* (1), *Axiokebuita* (1), *Oligobregma* (4), and *Pseudoscalibregma* (1). Each of the new species is compared and contrasted with their known congeners. *Asclerocheilus* and *Oligobregma* are the largest genera of the family in terms of numbers of species; the known species of each of these genera are tabulated and compared. The Scalibregmatidae known from abyssal depths of about 3000 m and greater are reviewed and discussed.

Introduction

The present study is based on annelids of the family Scalibregmatidae collected as part of the RV *Investigator* cruise (No. IN2017_V03) along the eastern continental margin of Australia in May/June 2017 (Gunton *et al.*, 2021). Scalibregmatids occur globally and range from the intertidal to the deep sea, but most species occur deeper than 100 m; this study represents the first report of deep-sea annelids of this family from Australian waters.

A review of the Scalibregmatidae was recently prepared by Blake (2020). The family includes approximately 70 species distributed in 15 genera identified largely by a suite of overlapping characters. Because so many species (and genera) occur in deep water, or are otherwise in habitats that are difficult to sample, there have been few species for which molecular sequences have been obtained. To date

there have been no phylogenetic analyses, morphological or molecular, that would serve to support a systematic revision of the family (Blake, 2020).

Scalibregmatids have an areolated appearance due to the presence of one to six annulated rows of elevated pads per segment. Their bodies are typically either elongate with an expanded anterior end and narrow abdominal region (arenicoliform) or short, thick, and without an expanded anterior end (maggot shaped); a few species have long, linear bodies (Blake, 2020). Scalibregmatids typically have a bifid or T-shaped prostomium with frontal or lateral horns. Parapodia are biramous with simple podial lobes; dorsal and ventral cirri occur in posterior parapodia of some genera. Branchiae, when present, are limited to a few anterior segments and have numerous branches. Setae are all simple and include capillaries, furcate setae, and sometimes large recurved acicular spines.

Keywords: *Asclerocheilus*, *Axiokebuita*, *Oligobregma*, *Pseudoscalibregma*, polychaetes, benthos, deep sea, new species

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