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Lacydonia quadrioculata, a new lacydoniid (Polychaeta: Phyllodocida) from Oahu, Hawaii

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Abstract

A new species of the genus *Lacydonia* is described from shallow waters off Oahu, Hawaii. This species is unique among its congeners by the presence of two pairs of small eyes; other lacydoniids may have either one pair of large or small eyes or no eyes at all. The description of *Lacydonia quadrioculata* sp. nov., brings the number of valid species within *Lacydonia* to 10 but the taxonomy of this genus is still confusing as most species are very similar morphologically and the majority of the descriptions are based merely on the single type or very few specimens. We discuss the relevance of some taxonomic characters used in species-level descriptions and provide a comparative table with selected characters of all valid species.

Key-words: Lacydoniidae, *Lacydonia*, new species, shallow waters

Introduction

Lacydoniids are small polychaetes found from shallow waters to regions as deep as 5,700 m (Uschakov 1958). Shallow water species have been collected among encrusting algae on coral rubbles and also in coarse sediments and rock bottoms (Marion & Bobretzky 1875; Pleijel 2001). *Lacydonia gordia* Hartmann–Schröder, 1993 was collected from substrates composed of volcanic rocks up to 177 m depth but information on benthic habitats for the deep-water species has not been recorded. In addition, data on natural history of this small family are completely nonexistent as most of the described species are known from very few specimens, usually from the single type specimen. Fauchald and Jumars (1979) classify lacydoniids as subsurface deposit-feeders; although Gathof (1984) suggested that they may be carnivorous or omnivorous using their eversible proboscis to capture prey.

The most recent papers on lacydoniids discuss the taxonomic status of most species. Pleijel and Fauchald (1993) synonymized the scalibregmatid genus *Scalispinigera* Hartman, 1967 with *Lacydonia*, transferring two species to the latter and considered *Lacydonia antarctica* Hartmann–Schröder and Rosenfeldt, 1988 a junior synonym of *Lacydonia oculata* (Hartman 1967). Later on, Blake (1994) describes a new species from off California and provides a detailed historical perspective of all described species, discussing pitfalls of early works and providing a good introduction to the taxonomy of this genus. *Lacydonia incognita* Rullier, 1965 was described from a posterior end fragment; Blake (1994) considered it to be a *nomen dubium* and Böggemann (2005) questionably referred it to *Goniada congoensis* Grube, 1877 by similarities of parapodial structures between the two species. Böggemann (2009) synonymized *Lacydonia elongata* Hartmann–Schröder and Rosenfeldt, 1992 to *L. papillata* Uschakov, 1958 after examination of both holotypes and newly collected material. Therefore, Blake (1994) arranged the described species in three groups: i) species with large eyes, *L. miranda* Marion and Bobretzky, 1875 and *L. oculata* (Hartman, 1967); ii) species with small eyes, *L. mikrops* Ehlers, 1913; and iii) species without eyes, *L. papillata*, *L. cirrata* (Hartman and Fauchald, 1971), *L. laureci* Laubier, 1975, *L. gordia* Hartmann–Schröder, 1993, *L. hampsoni* Blake, 1994 and *L. eliasoni* Hartmann–Schröder, 1996.