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***Gorgonolaureus bicornutus* sp. nov (Crustacea: Thecostraca: Ascothoracida) from off South-East Taiwan with notes on morphology and distribution**

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Abstract

A new ascothoracidan species, *Gorgonolaureus bicornutus* sp. nov., has been discovered off south-eastern Taiwan at a depth of 227 m. Five females were found in permanent cysts on the branches of a plexaurid octocoralian alcyonacean (former “gorgonian”), *Echinogorgia* sp. These specimens are assigned to the genus *Gorgonolaureus* on account of their having an enlarged and inflated carapace with a long, slit-like aperture, long dorsal thoracic horns, no filamentary appendages associated with the first pair of thoracopods, and rudimentary telsonic spines. *Gorgonolaureus bicornutus* differs from its congeners in having two long, naked dorsal horns on thoracomeres 2 and 3, the number of seminal receptacles in the thoracopods, and the higher number of stout setae on the fifth antennular segment. The characters that unite the genus *Gorgonolaureus* are redefined as follows: *i*) the absence of filamentary appendages associated with the first pair of thoracopods; *ii*) the possession of 1–3 dorsal horns distributed singly among thoracomeres 1–3; *iii*) the absence of prominent proximal teeth medially on the mandibles; *iv*) the possession of short or rudimentary telsonic spines; and *v*) host preference, with most species infecting octocorals of the suborder Halaxonia (mostly of the family Plexauridae) and never the calcaxonian families Chrysogorgiidae and Isididae. The gorgonian-infecting genera *Gorgonolaureus* and *Isidascus* are Tethyan relics that have survived only in the Western Pacific and the Eastern Atlantic, respectively, while their relatives in the genera *Cardomanica* and *Thalassomembracis* have disjunct Western Atlantic/Western Pacific distributions, thus exemplifying a major pattern of Tethyan reliction.

Key words: *Gorgonolaureus*, Ascothoracida, taxonomy, morphology, distribution

Introduction

Species of the genus *Gorgonolaureus* Utinomi, 1962 together with the genera *Isidascus* Moyse, 1983, *Cardomanica* Lowry, 1985, *Thalassomembracis* Grygier, 1984, and probably *Flatsia* Grygier, 1991, represent a more advanced grade of morphological organization in the adult females of synagogid ascothoracidans compared with the most generalized (primitive) fully bivalved genera *Synagoga* Norman, 1888, *Waginella* Grygier, 1983 and *Sessilogoga* Grygier, 1990. *Gorgonolaureus* parasitizes colonies of halaxonid and calcaxonid octocoralian alcyonaceans (former gorgonians). The parasite is encapsulated and covered directly by a number of adjoining host polyps, forming a cyst. The inner body of *Gorgonolaureus* resides in an enlarged carapace with a slit-like ventral aperture. The adult stages have six-segmented, prehensile antennules and piercing mouthparts (especially maxillae). The dorsal sides of thoracomere 2, and sometimes thoracomeres 1 and 3, bear long dorsal horns. As in most Ascothoracida, these are dioecious species with large attached females and small motile cypridiform males, but these are described only for two species, *G. muzikae* Grygier, 1981 and *G. tricornutus* Grygier, 1991 (Grygier, 1981, 1991). Grygier (1981) originally interpreted these males as ‘protanders’, but later reinterpreted them as gonochoristic adult males (Grygier, 1987b). The true dioecious species of other ascothoracidans of the order Dendrogastrida having large modified females accompanied with dwarf cypridiform males have a different morphology of the ‘male’ and ‘female’ cypridiform larvae. However, the cypridiform larvae of *Gorgonolaureus*, as