



## A new species of the sessile crinoid *Holopus* d'Orbigny from the tropical western Atlantic, with comments on holopodid ecology (Echinodermata: Crinoidea: Holopodidae)

STEPHEN K. DONOVAN<sup>1</sup> & DAVID L. PAWSON<sup>2</sup>

<sup>1</sup>Department of Geology, Nationaal Natuurhistorisch Museum, Postbus 9517, NL-2300 RA Leiden, The Netherlands.  
E-mail: donovan@naturalis.nnm.nl

<sup>2</sup>National Museum of Natural History, Mail Stop MRC163, Smithsonian Institution, Washington DC 20013-7012, USA.  
E-mail: pawsond@si.edu

### Abstract

*Holopus mikihe* new species is only the sixth extant holopodid crinoid to be described. It differs from all other extant holopodids in having large and distinct raised tubercles in the center line of the aboral surface of proximal secundibrachials, giving it the appearance of a mailed fist. The holotype, from 758 m, also comes from outside the known depth range of the other tropical western Atlantic species, *H. rangii* d'Orbigny. Some comments are provided on the ecology of Caribbean holopodids, based upon data obtained during dives of the *Johnson-Sea-Link* manned submersibles.

**Key words:** *Holopus*, Crinoidea, systematics, ecology

### Introduction

Apart from the widely distributed, vagile comatulids, extant crinoids, mainly stalked taxa, are usually confined to depths greater than 100m, although *Gymnocrinus richeri* Bourseau *et al.* (1987) was collected recently near Vanuatu in the Pacific Ocean from a depth of only 80–90m (Richer de Forges, personal communication). Stalked crinoids are sessile under normal conditions (but see Messing *et al.*, 1988; Baumiller & Messing, 2007). The holopodids (Early Jurassic to Recent; Simms *et al.*, 1993, p. 505) are morphologically distinct from the comatulids and most stalked taxa. Holopodids have lost the stalk, but, unlike comatulids, they are not vagile and they cement directly to the substrate. The dorsal (=aboral) cup is a fused tube in which plate sutures are not apparent (Grimmer & Holland, 1990; Donovan, 1992). The short arms form a watertight seal when closed over the tegmen (J.C. Grimmer pers. comm. in Donovan, 1992, p. 667). This peculiar morphology has led to them being compared with barnacles (Bather, 1928, p. lxxv; Donovan & Jakobsen, 2004).

Five extant holopodid taxa have been described (Table 1). Herein we describe a sixth species, based on a specimen (USNM E41507) originally treated as *Holopus rangii* d'Orbigny by Donovan (1992, figure 1.2; Figure 1 herein). At the time that Donovan (1992) was being written, only one living species of *Holopus* had been described. However, a second species, *Holopus alidis*, was published by Bourseau *et al.* (1991) while Donovan's contribution was 'in press'. Although known from different oceans separated by physical barriers and large distances, these two taxa are closer in many aspects of gross morphology than our new species is to *H. rangii*. We now describe this specimen as the holotype of a new species of these enigmatic crinoids. The only fossil species, *Holopus spileccense* (Schlüter, 1878) (Eocene, Italy), is too poorly known for comparison (Manni, 2005).