NEW RECORDS OF THE RARE SHRIMP GENUS DISCIAS RATHBUN (DECAPODA, CARIDEA, DISCIADIDAE)

BY

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The caridean shrimp family Disciadidae Rathbun contains only four genera, of which the genus *Discias* is the best known and species rich with eight species (De Grave & Fransen, 2011). The genus as a whole is characterised by the highly modified first pereiopod (cheliped) in which the dactylus is semicircular, disk-like in appearance with a sharp cutting edge (Kensley, 1983). Of the known species, the majority is only known from a few specimens at most, although some do appear to be very widespread. For example, an unusually broad, disjunct distribution has been attributed to *D. atlanticus* Gurney, spanning the western and eastern Atlantic, but also including the Red Sea, Kenya and Australia’s Great Barrier Reef (Kensley, 1983). However, the range of morphological variation observed in this species may be more indicative of a species complex.

The paucity of records for all species is likely due to a combination of their cryptic lifestyle and small body size (pocl less than 5.0 mm). An association with sponges has been demonstrated or inferred for most species (Bruce, 1976; Kensley, 1983), although Columbian populations of *D. atlanticus* were observed in the tubes of the parchment tubeworm *Chaetopterus variopedatus* (Renier, 1804) (see Criales & Lemaitre, 1997).

Here we report on various records for three species of the genus, which fill in gaps in their geographical range or considerably extend their range. All material is deposited in the Zoological Collections of the Oxford University Museum of Natural History, Oxford (OUMNH.ZC). Post-orbital carapace length (pocl) is used as the standard measurement of size, expressed in millimetres (mm).
Infraorder CARIDEA Dana, 1852
Family DISCIADIDAE Rathbun, 1902
Genus Discias Rathbun, 1902
Discias exul Kemp, 1920
(fig. 1)

Discias exul Kemp, 1920: 138, figs. 1-3; Bruce, 1970: 315, fig. 1; Kensley, 1983: 13, figs. 10-11.

Material examined.— 1 female (pocl 1.9 mm), OUMNH.ZC.2008-08-004, Indonesia, Sulawesi, Tukangbesi Archipelago, Hoga Island, off Buoy 3, from Acanthella sp., 5 m depth, leg. J.

Fig. 1. Discias exul Kemp, 1920: A-G, female from Sulawesi (OUMNH.ZC.2008-08-004); H, ovigerous female from Iriomote (OUMNH.ZC.2015-07-001). A, rostrum, dorsal view; B, abdomen, lateral view; C, telson, dorsal view; D, left mandible, lateral view; E, right scaphocerite, distal half, dorsal view; F, right third pereiopod, distal propodus and dactylus, lateral view; G, right uropod, dorsal view; H, telson, dorsal view. Scale bars equal 0.25 mm.
Bell, 01.viii.2007; 1 ovigerous female (pocl 2.0 mm), OUMNH.ZC.2015-07-001, Japan, Iriomote, from unidentified sponge, 2 m depth, 24°22′23.9″N 123°44′47.8″E, leg. S. De Grave & M. Johnson, 08.vi.2014 (fcn IRI-119); 1 male (pocl 2.1 mm), 1 ovigerous female (pocl 1.9 mm), OUMNH.ZC.2015-07-002, Japan, Iriomote, from unidentified sponge, 3 m depth, 24°24′56.3″N 123°49′48.3″E, leg. S. De Grave & M. Johnson, 10.vi.2014 (fcn IRI-143).

Remarks.— The specimens agree well with the type description of Kemp (1920), as well as the re-description of the species by Kensley (1983). Diagnostic features are the lanceolate rostrum with serrated margins (fig. 1A), dorsomedial posterior tooth on second abdominal segment (fig. 1B), two-segmented mandibular palp (fig. 1D), and the non-serrated lateral margin of the uropod (fig. 1G). Typically, the distal margin of the telson harbours four pairs of spines (fig. 1H), although one specimen from Sulawesi (fig. 1C) had an aberrant number. The species is a sponge associate, having been recorded from a yellow sponge (Kemp, 1920), *Jaspis* sp. (Bruce, 1970), *Acarnus ternatus* Ridley (Bruce, 1976, as *D. mvitae* Bruce) and the present Sulawesi specimen from *Acanthella* sp., as well as an unidentified sponge for the Iriomote specimens.

The species has a wide distribution in Indo-Pacific waters, although based on sparse records from few specimens. Currently, *D. exul* is known from Kenya (Bruce, 1976), South Africa (Kensley, 1981), the Andaman Islands (Kemp, 1920), Sulawesi (present record), Australia (Great Barrier Reef, Bruce, 1970; Cartier Reef, Western Australia, Russell & Hanley, 1993), Japan (Kerama Islands, Nomura et al., 1996; Yaeyama Islands: Yonara Strait, Komai & Segonzac, 2003, as *D. cf. exul*; Iriomote, present record), Hawaii (Titgen, 1987) and northern New Zealand (Yaldwyn & Webber, 2011, as *D. cf. exul*).

**Discias musicus** Holthuis, 1981
(figs. 2-3)


Material examined.— 1 female (pocl 2.5 mm), OUMNH.ZC.2010-14-025, French Polynesia, Moorea, Opunohu Bay, Papetoai Forereef, from *Pocillopora* rubble, 6 m depth, 17°29′01″S 149°52′13″W, leg. M. Leray, i.2009.

Remarks.— The single specimen agrees well with Holthuis’s (1981) illustrated account, as well as the diagnosis in Kensley (1983). However, the dactyli of the third pereiopods have three instead of two distal spines (cf. fig. 2F and Holthuis, 1981’s fig. 2f). Diagnostic features are the rostrum shape and entire lateral margins (fig. 2A), second abdominal segment lacking a dorsomedial posterior tooth (fig. 2B), absence of a mandibular palp (fig. 2D) and the absence of a distal tooth on the scaphocerite (fig. 2E). *Discias musicus* was previously only known from three widely separated locations: Saipan, Mariana Islands (Holthuis, 1981);
Fig. 2. *Discias musicus* Holthuis, 1981, ovigerous female from Moorea (OUMNH.ZC.2010-14-025): A, rostrum, dorsal view; B, abdomen, lateral view; C, telson, dorsal view [distally damaged]; D, right mandible, lateral view; E, right scaphocerite, distal half, dorsal view; F, right third pereiopod, distal propodus and dactylus, ventral view; G, right fifth pereiopod, distal propodus and dactylus, dorsomesial view; H, right uropod, dorsal view. Scale bars equal 0.25 mm.

North East Herald Cay, Coral Sea Islands Territory, Australia (Davie & Short, 2001) and Shab Baraia Reef, north of Port Sudan, Red Sea (Bruce, 2005). The present record from Moorea (French Polynesia) significantly enlarges the known distribution, extending it further into the South Pacific. The ecology of the species remains poorly known, with the records of Holthuis (1981) and Bruce (2005) providing no details. Both the present specimen and the specimens in Davie & Short (2001) were obtained from dead (or live) coral, although an association with a cryptic species of sponge at the base of the coral cannot be excluded.
Fig. 3. *Discias musicus* Holthuis, 1981, ovigerous female from Moorea (OUMNH.ZC.2010-14-025): A, right first pereiopod, lateral view; B, same, distal chela, ventral (lateral) view; C, right second pereiopod, lateral view; D, same, distal chela, ventral (lateral) view. Scale bars equal 0.25 mm.
Discias serratirostris Lebour, 1949
(fig. 4)

Discias serratirostris Lebour, 1949: 1107, figs. 1-2; Wilson & Gore, 1979: 311, fig. 1; Kensley, 1983: 15, figs. 13-14; Cardoso & Young, 2007: 280, figs. 3-6.

Material examined.—1 female (pocl 1.1 mm), OUMNH.ZC.2004-22-029, Tobago, House Reef, Man-O-War Bay, sediment dredge on sparse Caulerpa bed, 6 m depth, 11°19.221′N 060°33.100′W,

Fig. 4. Discias serratirostris Lebour, 1949, male from Tobago (OUMNH.ZC.2004-22-009): A, rostrum, dorsal view; B, abdomen, lateral view; C, telson, dorsal view; D, right mandible, lateral view; E, right scaphocerite, distal half, dorsal view; F, right uropod, exopod, dorsal view. Scale bars equal 0.25 mm.

Remarks.— The present specimens agree well with the illustrations of the holotype, as well as the species’ diagnosis in Kensley (1983). Diagnostic features are the lanceolate, apically acute rostrum with serrate margins (fig. 4A), dorsomedial posterior tooth on second abdominal segment (fig. 4B) and the mandibular palp comprised of a single elongated segment (fig. 4D), which serve to distinguish the species from the other two Atlantic representatives (D. atlanticus Gurney; D. vernbergi Boothe & Heard) of the genus. The species appears to be associated with sponges, including Sphecospongia vesparium (see Westinga & Hoetjes, 1981), although the majority of records are either from unidentified sponges (e.g. Kensley, 1983; present records) or without habitat information.

The species is widespread in the western Atlantic, although with sparse records, based on few individuals. Currently, D. serratirostris is known from Bermuda (Lebour, 1949), Florida (Wilson & Gore, 1979; Kensley, 1983), NE Gulf of Mexico (Kensley, 1983), Cuba (Martínez-Iglesias et al., 1993), Curaçao (Westinga & Hoetjes, 1981), Tobago (present records) and Brazil (North Chain seamounts, Coelho Filho, 2006; Espírito Santo, Coelho & Ramos, 1972, as Discias sp. A in part., see Torres et al., 1990; and Atol das Rocas, Cardoso & Young, 2007).

REFERENCES


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