

Notes on crabs of the families Goneplacidae and Dorippidae (Decapoda: Brachyura) from the Dampier Archipelago, Western Australia

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Abstract – Nineteen specimens representing four species in the brachyuran families Goneplacidae and Dorippidae were collected during a four year biological survey of the Dampier Archipelago, in northwest Western Australia, conducted by the Western Australian Museum. Two of the species are goneplacids, *Eucrate affinis* and *E. dorsalis* and the other two are dorippids, *Dorippe quadridens* and *Paradorippe australiensis*. Notes on range extensions, habitats, etc., are provided for these four species.

INTRODUCTION

The knowledge of the marine fauna of the Dampier Archipelago, on the northwest coast of Western Australia, remains incomplete. To increase our understanding of the fauna of the Dampier Archipelago, the Western Australian Museum conducted a four-year marine biological survey of the marine flora and fauna from the waters of the Dampier Archipelago. The survey consisted of a series of marine expeditions – two diving surveys (October 1998 and September 1999), a dredging and trawling expedition (July 1999), mangrove fieldwork, and a marine biological workshop (August 2000). Herein, I report on the crabs of the families Goneplacidae and Dorippidae collected as a part of this survey. Notes on range extensions, habitats, etc. are provided for four species.

The family Goneplacidae has long been a heterogeneous grouping for species that did not conveniently fit the diagnosis of another family. Guinot (1969a, b, c; 1971) made the most significant steps in clarifying the phylogenetic relationships of the Goneplacidae. Although she recognized six separate groups within the Goneplacidae, she did not formalize any of these groups nomenclaturally. Ng (1987) was the first to formally remove any of the lineages that were recognized by Guinot when he transferred the subfamily Rhizopinae from the Goneplacidae to the Pilumnidae. In 1986, Guinot recognized the subfamily Troglolacinae for the monotypic genus *Troglolax* Guinot, 1986; however, Davie (2002) later elevated the Troglolacinae to full family status. Serene (1984) recognized a new subfamily, Planopilumninae, in the Pilumnidae, which was later regarded as a goneplacid taxon (see Ng and Clark, 2000a, b; Ng *et al.*, 2001). In 1994, Ng and Wang resurrected the subfamily Pseudoziinae Alcock, 1898, within the

Goneplacidae for the genus *Pseudozius* Dana, 1851. Subsequently, Ng and Liao (2002) recognised the Pseudoziinae as a full family which encompasses the subfamilies Pseudoziinae and Planopilumninae. More recently, there has been growing evidence supporting the elevation of the Euryplacinae, Carcinoplacinae, and Chasmocarcininae to full family status (see D'Udekem d'Acoz, 1999; Karasawa and Kato, 2003; Števcic, 2005; Karasawa and Schweitzer, 2006 for discussion); however, until additional support is provided for the elevation of these three subfamilies, I recognize the Goneplacidae as containing four subfamilies: Goneplacinae, Carcinoplacinae, Euryplacinae, and Chasmocarcininae. This manuscript includes the Goneplacidae as defined above.

MATERIALS AND METHODS

A complete synonymy for each species or complete references to all original species descriptions are not presented. Abbreviations used in this manuscript include: meters (m), carapace length (cl), carapace width (cw) and ovigerous (ovig.). Measurements are given in millimeters (mm). All materials examined have been deposited at the Western Australian Museum (WAM), Perth, Western Australia.

SYSTEMATIC ACCOUNT

Family Goneplacidae MacLeay, 1838

Subfamily Euryplacinae Stimpson, 1871

Eucrate De Haan, 1835

Eucrate affinis Haswell, 1881

For synonymies prior to 1969, see Campbell (1969).

Material examined

Western Australia, Dampier Archipelago. WAM C 27063 (1 male, cw 4.0 mm, cl 3.1 mm), stn DA2/99/94, ~ 0.6 n. mls SE of King Pt, East Lewis I. (20°38.37'S, 116°38.41'E to 20°38.39'S, 116°38.52'E), fine mesh scoop box dredge, 14.5–16.0 m, 27.07.1999; WAM C 25429 (1 male, cw 5.85 mm, cl 4.80 mm), stn DA2/99/38, ~ 2.1 n. mls WSW of Marks Pt, West Lewis I. (20°37.47'S, 116°35.37'E to 20°36.91'S, 116°35.33'E), rake box dredge, 11.0–13.0 m, 19.07.1999; WAM C 27107 (1 male, cw 7.80 mm, cl 6.25 mm), stn DA2/99/99 ~ 1.05 n. mls WSW of Rocky Head, Enderby I. (20°37.36'S, 116°26.85'E to 20°37.02'S, 116°26.44'E), rake box dredge, 17.0–19.0 m, 28.07.1999; WAM C 27105 (1 male, cw 9.6 mm, cl 7.3 mm), stn DA2/99/29, ~ 4.35 n. mls W of Cape Bruguieres (20°24.64'S, 116°44.05'E to 20°24.76'S, 116°43.65'E), rake box dredge, 27.0–28.0 m, 17.07.1999; WAM C 27087 (1 non-ovig. female, cw 8.5 mm, cl 6.7 mm), stn DA2/99/57, ~ 1.05 n. mls N of Roly Rock (20°29.03'S, 116°30.45'E to 20°29.18'S, 116°30.06'E), rake box dredge, 32–33 m, 21.07.1999; WAM C 27054 (1 non-ovig. female, cw 8.9 mm, cl 6.7 mm), stn DA2/99/81, ~ 2.35 n. mls N of W point of Kendrew I. (20°26.51'S, 116°31.57'E to 20°26.37'S, 116°31.73'E), rake box dredge, 38 m, 25.07.1999; WAM C 27093 (1 non-ovig. female, cw 9.9 mm, cl 8.0 mm), stn DA2/99/65, ~ 2.4 n. mls NW of light on East Intercourse I. (20°38.31'S, 116°38.46'E to 20°38.77'S, 116°38.54'E), rake box dredge, 10–15 m, 23.07.1999; WAM C 27088 (1 non-ovig. female [carapace damaged]), stn DA2/99/58, ~ 1 n. ml NNE of Roly Rock (20°29.11'S, 116°30.78'E to 20°29.35'S, 116°30.55'E), rake box dredge, 25–25.5 m, 21.07.1999.

Remarks

The specimens examined generally agree with the diagnosis given by Campbell (1969). However, the median carinae of the third and fourth teeth of the anterolateral margins are slightly weaker than those described by Campbell (1969).

Distribution

Limited to the coastal waters of Australia, Port Denison (type locality, Haswell, 1881) (New South Wales), Port Molle (Miers, 1884) (Queensland); Dampier Archipelago (Western Australia).

Habitat

Sublittoral, in depths of 10 to 40 m; substrate sandy mud with rocks interspersed to coarse shelly gravel with rocks.

***Eucrate dorsalis* (White, 1849)**

For synonymies prior to 1969, see Campbell (1969).

Material examined

Western Australia, Dampier Archipelago. WAM

C 27104 (1 male, cw 9.3 mm, cl 11.8 mm), stn DA2/99/17, ~ 3 n. mls ESE of Sloping Pt, Burrup Pen. (20°32.99'S, 116°54.71'E to 20°33.47'S 116°54.97'E), rake box dredge, 16.5–17.0 m, 16.07.1999; WAM C 27106 (1 male, cw 6.5 mm, cl 8.0 mm), stn DA2/99/64, ~ 2 n. mls N of light on East Intercourse I. (20°37.43'S, 116°40.77'E to 20°37.79'S, 116°40.76'E), rake box dredge, 12.0–14.0 m, 23.07.1999.

Remarks

The diagnostic large red spot in the center of the carapace as noted by Campbell (1969) is visible even in alcohol preserved specimens.

Distribution

Limited to the coastal waters of Australia; Moreton Bay (Brisbane) to Gulf of Carpentaria (Campbell, 1969) (Queensland); Dampier Archipelago (Western Australia).

Habitat

Sublittoral, in depths of 10 to 20 m; substrate mud to mud with rubble and small gravel.

Family Dorippidae MacLeay, 1838**Subfamily Dorippinae MacLeay, 1838*****Dorippe* Weber, 1795*****Dorippe quadridens* (Fabricius, 1793)**

For complete synonymy prior to 1990, see Holthuis and Manning (1990).

Material examined

Western Australia, Dampier Archipelago. WAM C 27117 (1 male, cw 5.1 mm, cl 5.5 mm), stn DA2/99/11, ~ 5.9 n. mls NNW of NW point of Delambre I. (20°20.75'S, 117°01.16'E to 20°20.19'S, 117°01.18'E), rake box dredge, 32.0–34.0 m, 15.07.1999; WAM C 27124 (1 male, cw 7.2 mm, cl 7.0 mm), stn DA2/99/91, ~ 1.4 n. mls ESE of Tish Point, Rosemary I. (20°30.48'S, 116°36.53'E to 20°30.27'S, 116°36.86'E), rake box dredge, 9.0–10.0 m, 26.07.1999; WAM C 27120 (1 male, cw 7.3 mm, cl 7.4 mm), stn DA2/99/46, ~ 2.4 n. mls WNW of Rocky Head, Enderby I. (20°35.90'S, 116°24.60'E to 20°35.48'S, 116°25.52'E), rake box dredge, 17.5–18.0 m; 20.07.1999; WAM C 27121 (1 male, cw 10.1 mm, cl 10.5 mm), stn DA2/99/62, Flying Foam Passage, ~ 0.9 n. mls NE of S tip of Angel I. (20°30.69'S, 116°48.58'E to 20°31.17'S, 116°48.33'E), rake box dredge, 7.0–9.0 m, 22.07.1999; WAM C 27123 (1 male, cw 15.0 mm, cl 16.6 mm), stn DA2/99/74, ~ 1.95 n. mls SE of Rocky Head, Enderby I. (20°38.34'S, 116°29.18'E to 20°38.83'S, 116°28.85'E), rake box dredge, 10.5–11.5 m, 24.07.1999; WAM C 27118 (1 female, cw 18.5 mm, cl 18.7 mm), stn DA2/99/25, ~ 5.2 n. mls N of

Rosemary I. (20°22.29'S, 116°35.56'E to 20°22.62'S, 116°35.44'E), rake box dredge, 39.0 m, 17.07.1999; WAM C 27122 (1 female, cw 28.0 mm, cl 27.5 mm), stn DA2/99/73, ~ 3.25 n. mls S of Rocky Head, Enderby I. (20°40.14'S, 116°27.69'E to 20°39.93'E, 116°27.96'E), rake box dredge, 12.5 m, 24.07.1999.

Distribution

Holthuis and Manning (1990) reported this species from throughout the Indo-West Pacific. Within the coastal waters of Australia, it occurs from Moreton Bay (Queensland) northward and westward to Shark Bay (Western Australia), interrupted by an apparent gap in the northern extremes of Australia (Holthuis and Manning 1990). For more details, see Manning and Holthuis (1990).

Habitat

Sublittoral, shallow water, in depths of 7 to 39 m in the current study; substrate shelly sand or mud to sand and rocks. Holthuis and Manning (1990) reported that this species most commonly occurs in depths of 1 to 30 m, on soft mud or sand/mud bottoms.

Paradorippe Serène and Romimohtarto, 1969

Paradorippe australiensis (Miers, 1884)

For complete synonymy prior to 1990, see Holthuis and Manning (1990).

Material examined

Western Australia, Dampier Archipelago. WAM C 27119 (1 immature, cw 8.4 mm, cl 8.3 mm), stn DA2/99/36, ~ 4.0 n. mls WSW of High Pt, on island NE of West Lewis I. (20°33.58'S, 116°36.87'E to 20°33.88'S, 116°36.25'E), rake box dredge, 13 m, 19.07.1999; WAM C 26230 (1 female, cw 11.4 mm, cl 10.9 mm), stn DA2/99/59, ~ 1.8 n. mls S of Courtenay Head Light, Malus I. (20°32.23'S, 116°41.63'E to 20°32.09'S, 116°41.16'E), rake box dredge, 17.0–19.0 m, 22.07.1999.

Distribution

Moreton Bay (Queensland) northward and westward to Garden Island (Western Australia), interrupted by a gap in the northern extremes of Australia. Davie (2002) reported this species from Irian Jaya.

Habitat

Sublittoral, shallow water, in depths of 13 to 19 m in the current study; substrate shelly mud with rocks. Holthuis and Manning (1990) reported this species from depths of up to 22 m, on a variety of substrates including reef flats, mud, and sand substrata.

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