

## The Albuneidae (Crustacea, Anomura) of the Dampier Archipelago, Western Australia

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**Abstract** – The albuneid fauna of Western Australia is summarized with two species, *Paralbunea dayriti* (Serène and Umali, 1965) and *Squillalbunea mariellae* (Serène, 1973), being recorded as new to the Western Australian fauna south of 20°S. Both of these species, as well as *Albunea occulta* Boyko, 2002, are recorded as new to the Dampier Archipelago, bringing the total number of albuneids known from this region to four. Western Australian distribution maps for the three taxa represented by new material are provided.

### INTRODUCTION

Eleven species of albuneids have previously been reported from Western Australia: *Austrolepidopa trigonops* Efford and Haig, 1968, *A. caledonia* Boyko and Harvey, 1999, *Leucolepidopa sunda* Efford, 1969, *Paralbunea dayriti* (Serène and Umali, 1965), *Squillalbunea mariellae* (Serène, 1973), *Stemonopa insignis* Efford and Haig, 1968, *Albunea speciosa* Dana, 1852, *A. elioti* Benedict, 1903, *A. groeningi* Boyko, 2002, *A. occulta* Boyko, 2002, and *A. thurstoni* Henderson, 1893 (see Boyko, 2002). This represents an impressive 23% (11/47) of all recognized Recent albuneid taxa and includes several of the rarest albuneids (e.g., *S. insignis* and *L. sunda*). However, only four records of albuneids occurring in Western Australia south of 20°S were previously known: two records of *A. speciosa* (22°41'S, 113°38'E [WAM C 23398], 22°43.50'S, 113°39.50'E [WAM C 23399]), one record of *A. occulta* (20°54'S, 115°19'E; WAM C 23392) (Boyko, 2002), and a single record of *Albunea groeningi*, from near Rosemary Island (WAM C 23386; Boyko, 2002). *Albunea groeningi* represents the only albuneid specimen reported from the Dampier Archipelago.

A small collection of albuneids obtained during the 1999 Dampier Archipelago Survey of the Western Australian Museum-Woodside Petroleum Partnership are reported herein, adding a further two species, *P. dayriti* and *S. mariellae*, to the Western Australian fauna south of 20°S. Both these species, plus *A. occulta*, are new to the Dampier Archipelago fauna. The only albuneids that might be considered "common" (i.e., known from more than a very few records) in Western Australia are *P. dayriti*, *A. groeningi* and *A. occulta*.

It should be noted that the key given by Boyko (2002: 230) for species of *Albunea* is in error in that

the thickness of the setae in couplet 16 was inadvertently reversed. The couplet should be written as follows:

16. Male telson with indented median ridge lined with **thin** setae ..... 17  
– Male telson with inflated median ridge lined with **thick** setae ..... 20

### MATERIALS AND METHODS

Abbreviations used in the text are as follows: cl, carapace length as measured from the midpoint of the anterior margin (including rostrum, if any) to the midpoint of the posterior concavity; mm, millimeters; n. mls, nautical miles; stn, station; WAM, Western Australian Museum, Perth.

### SYSTEMATICS

#### *Paralbunea* Serène, 1977

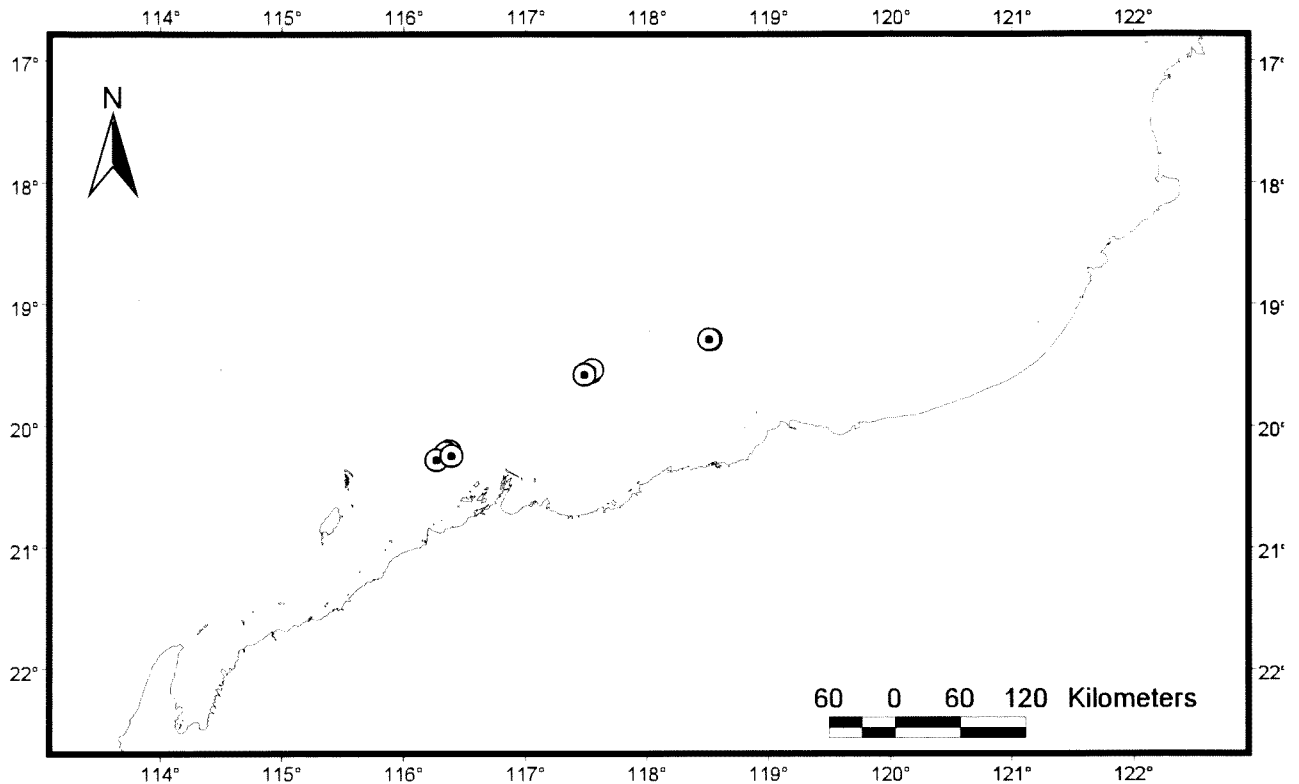
##### *Paralbunea dayriti* (Serène and Umali, 1965)

*Albunea dayriti* Serène and Umali, 1965: 103.

*Paralbunea dayriti*. – Serène, 1979: 97.

#### Material examined

**Western Australia, Dampier Archipelago.** WAM C 26237 (1 male, cl 5.9 mm), stn DA2/99/24, ~ 5.5 n. mls N of Lady Nora I. (20°21.79'S, 116°38.05'E to 20°22.00'S, 116°37.81'E), rock and sand bottom, 38.5 m, 17.07.1999; WAM C 26238 (1 male, cl 6.7 mm), stn DA2/99/25, ~ 5.1 n. mls N of Rosemary I. (20°22.29'S, 116°35.56'E to 20°22.62'S, 116°35.44'E), muddy sand bottom, 39.0 m, 17.07.1999; WAM C 26242 (1 female, cl 10.5 mm), stn DA2/99/55, ~ 3.2 n. mls NW of Roly Rock (20°28.45'S, 116°27.43'E to



**Figure 1** Distribution of *Paralbunea dayriti* (Serène and Umali, 1965) in Western Australia. Data from Boyko (2002) and herein.

20°27.98'S, 116°27.54'E), mud, sand and rocky rubble bottom, 37.5–38.0 m, 21.07.1999; WAM C 26246 (1 male, cl 8.6 mm), stn DA2/99/87, ~ 2.2 n. mls ENE of E point of Brigadier I. (20°25.48'S, 116°39.07'E to 20°25.23'S, 116°39.32'E), fine sand bottom, 33.0–33.5 m, 26.07.1999.

#### Bathymetric Range

Within Dampier Archipelago, depth range 33.0–39.0 m; over entire range, 6.1–45.5 m (Boyko, 2002).

#### Distribution

Southern Japan southward to Western Australia and eastward to New Caledonia, the Marshall Islands and Tahiti (Boyko, 2002).

### *Squillalbunea* Boyko, 2002

#### *Squillalbunea mariellae* (Serène, 1973)

*Albunea mariellae* Serène, 1973: 261, pl. 1.

*Squillalbunea mariellae*. – Boyko, 2002: 215, figs 70, 71.

#### Material examined

**Western Australia, Dampier Archipelago.** WAM C 35466 [ex C 26237] (1 male, cl 5.9 m), stn DA2/99/24, ~ 5.5 n. mls N of Lady Nora I. (20°21.79'S, 116°38.05'E to 20°22.00'S, 116°37.81'E), rock and sand bottom, 38.5 m, 17.07.1999; WAM C 26245 (1

unsexable, unmeasurable specimen [fragments]), 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), coarse shelly gravel and rock bottom, 25.0–25.5 m, 21.07.1999; WAM C 26247 (1 male, cl 6.1 mm), stn DA2/99/89, ~ 1.85 n. mls N of Gordon Pt, Rosemary I. (20°27.33'S, 116°34.39'E to 20°27.17'S, 116°34.72'E), coarse shell and rubble bottom, 27.0–28.0 m, 26.07.1999.

#### Bathymetric Range

Within Dampier Archipelago, depth range 25.0–38.5 m; over entire range, to depth of 82.3 m (Boyko, 2002).

#### Distribution

Indonesia; Western Australia and Queensland, Australia; and the Marqueses Islands (Boyko, 2002).

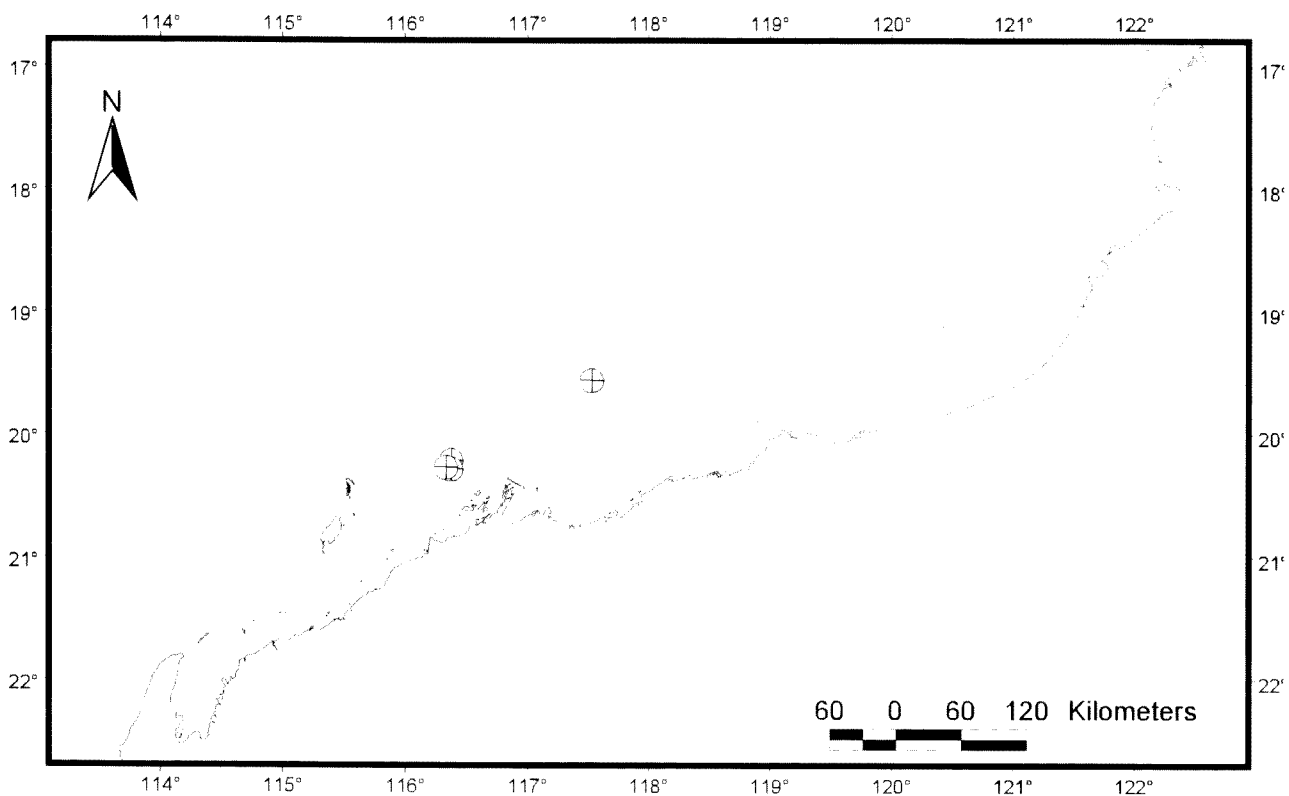
### *Albunea* Weber, 1795

#### *Albunea occulta* Boyko, 2002

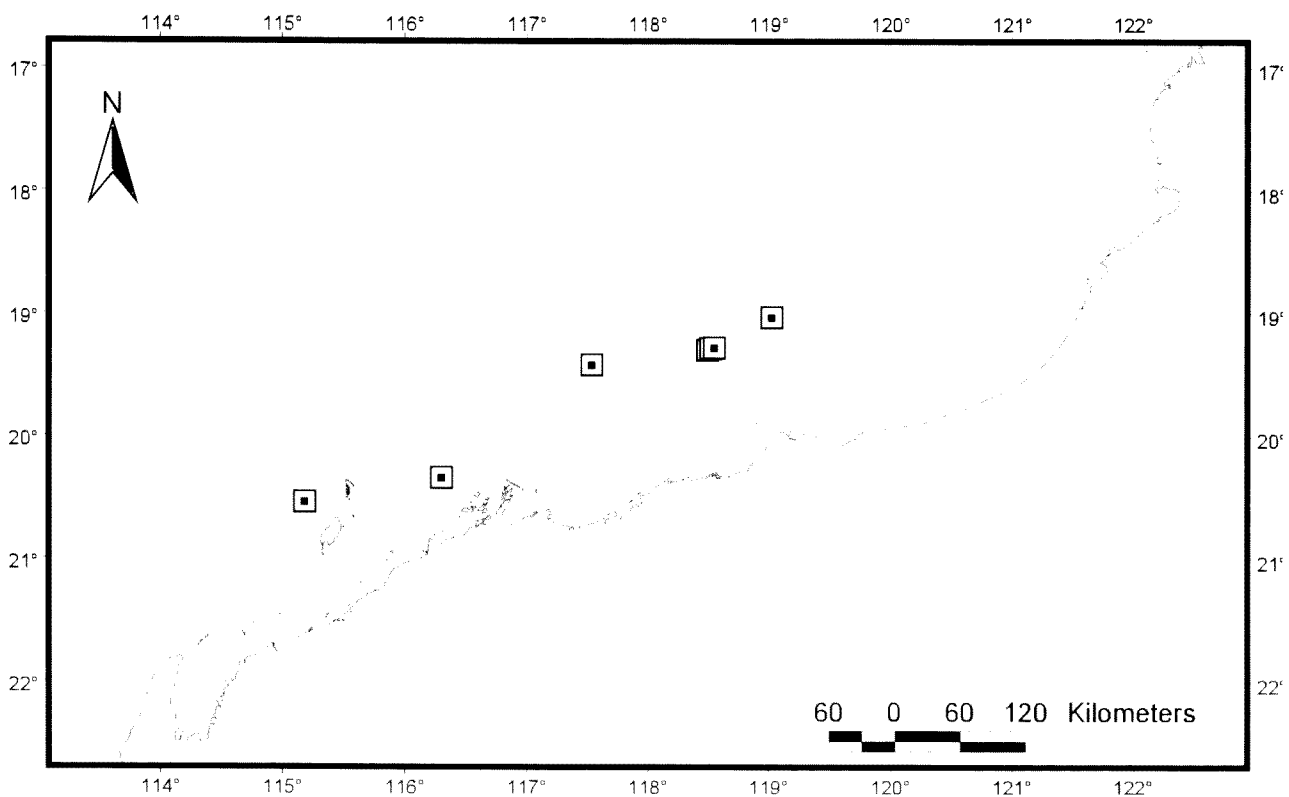
*Albunea occultus* Boyko, 2002: 313, figs 100, 101.

#### Material examined

**Western Australia, Dampier Archipelago.** WAM C 26240 (1 male, cl 12.6 mm) stn DA2/99/42, ~ 2.4 n. mls SW of SW point of Goodwyn I. (20°34.16'S, 116°30.11'E to 20°33.67'S, 116°30.01'E), rock and fine sand bottom, 14–16 m, 20.07.1999.



**Figure 2** Distribution of *Squillalbunea mariellae* (Serène, 1973) in Western Australia. Data from Boyko (2002) and herein.



**Figure 3** Distribution of *Albunea occulta* Boyko, 2002 in Western Australia. Data from Boyko (2002) and herein.

### Remarks

Although described as *Albunea occultus* by Boyko (2000), the ending of the species name must be changed from *-us* to *-a* to reflect agreement with the feminine genus name *Albunea*.

### Bathymetric Range

Within Dampier Archipelago, depth range 14.0–16.0 m; over entire range, in depths to 82 m (Boyko, 2002).

### Distribution

Southern Japan southward to the eastern and western coasts of Australia (Boyko, 2002).

### CONCLUSIONS

The specimens obtained from the Dampier Archipelago survey bring the total number of species known in this region to four but, given the typically low densities of albuneids in all regions of the world, it is possible that there may be more of the 11 known Western Australian species living in the Archipelago that remain unsampled.

Although the albuneid fauna of the Indo-West Pacific is now much better known than previously (Boyko, 2002), there are still many questions about these sand crabs that remain to be answered. We have a good understanding of the taxonomic richness of the family, but the distributions and depth ranges of individual species, to say nothing of the biological activities of albuneids in general, remain poorly known. Only through regional faunal studies, such as the Dampier Archipelago survey, can we hope to assemble a clearer picture of the distributional patterns of sand crabs throughout the Indo-Pacific, which will allow the eventual targeting of promising regional areas for the study of their biology and ecology.

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### REFERENCES

- Benedict, J.E. (1903). Revision of the Crustacea of the genus *Lepidopa*. *Proceedings of the United States National Museum* **26**: 889–895.
- Boyko, C.B. (2002). A worldwide revision of the Recent and fossil sand crabs of the Albuneidae Stimpson and Blepharipodidae, new family (Crustacea: Decapoda: Anomura: Hippoidea). *Bulletin of the American Museum of Natural History* **272**: 1–396.
- Dana, J.D. (1852). Crustacea. *U.S. Exploring Expedition. During the years 1838, 1839, 1840, 1841, 1842. Under the command of Charles Wilkes, U.S.N.* Philadelphia: C. Sherman. **13**: 685 pp.
- Efford, I.E. (1969). *Leucolepidopa sunda* gen. nov., sp. nov. (Decapoda: Albuneidae), a new Indo-Pacific sand crab. *Breviora* **318**: 9 pp.
- Efford, I.E. and Haig, J. (1968). Two new genera and three new species of crabs (Decapoda: Anomura: Albuneidae) from Australia. *Australian Journal of Zoology* **16**: 897–914.
- Henderson, J.R. (1893). A contribution to Indian carcinology. *Transactions of the Linnean Society of London*, 2nd ser., **5**: 325–458.
- Serène, R. (1973). A new species of Decapoda Hippidea: *Albunea mariellae* nov. sp. from the Banda Sea. *Crustaceana* **24**: 261–264.
- Serène, R. (1977). Crustacés hippidés et brachyours des îles Séchelles. *Revue de Zoologie Africaine* **91**: 45–68.
- Serène, R. and Umali, A.F. (1965). A review of Philippine Albuneidae, with descriptions of two new species. *Philippine Journal of Science* **94**: 87–116.
- Weber, F. (1795). *Nomenclator entomologicus secundum entomologiam systematicam ill. Fabricii adjectis speciebus recens detectis et varietatibus*. Chilonii et Hamburgi. viii + 172 pp.