

Armadillidae (Crustacea: Isopoda) from Lord Howe Island: New Taxa and Biogeography

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ABSTRACT. Lord Howe Island and associated island, Ball's Pyramid, in the Tasman Sea between Australia and New Zealand, have a surprising diversity of terrestrial isopods. New species in the genera *Pyrgoniscus*, *Cubaris* and a new genus (*Stigmops*, n.gen.) of the family Armadillidae are described from Australian Museum collections made on Lord Howe Island. Two species, formerly placed in *Anchicubaris*, are moved to the new genus. *Anchicubaris* is revised to show how it differs from the new genus. With these changes, species of *Anchicubaris* no longer occur on Lord Howe Island. A lectotype for *Anchicubaris fongosiensis* is assigned. The homonymy of *Cubaris granulatus* Lewis, 1998b is resolved with a new name and a type species for the genus *Sphenodillo* Lewis, 1998b is assigned. A key to Lord Howe Armadillidae is provided. The biogeography of Armadillidae genera on Lord Howe Island shows possible links to neighbouring regions of New Caledonia and eastern Australia. Because relationships of species in the large genera *Cubaris* and *Pyrgoniscus* are unknown, precise area relationships cannot be estimated. The high diversity and presence of armadillids on the nearby rock, Balls Pyramid, suggests that the Lord Howe fauna is a contracted remnant of a much larger Pleistocene fauna, when lowered sea levels provided interconnections and much larger areas.

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Lord Howe Island is a small, subtropical island situated on the Lord Howe Rise in the Tasman Sea approximately 700 km northeast of Sydney (31°33'S 159°05'E, Fig. 1). The island covers an area of approximately 15 km² and is the eroded remnant of volcanic activity 6–7 million years ago. The main island is dominated by two peaks, Mount Gower (875 m) and Mount Lidgebird (777 m) in the south, hills in the north (up to 200 m high) and lowlands in the middle of the island (Hutton, 1986).

The Lord Howe Rise, upon which the island sits, was separated first from New Zealand and later from Australia approximately 80 million years ago (Hutton, 1986). The

Rise has been subject to several sea level changes during which exposed islands have acted as permanent refuges for indigenous organisms or as “stepping stones” for organisms from other landmasses (Clark & Pickard, 1977). The flora and fauna have close relatives in Australia, New Zealand, New Caledonia and Norfolk Island, but its long-term isolation has resulted in a high proportion of endemic species. These species were largely undisturbed until the first recorded human contact in 1788 when Europeans landed on the island. A permanent settlement was founded in 1834 (Hutton, 1986).