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CIROLANIDAE (CRUSTACEA : ISOPODA) OF AUSTRALIA

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ABSTRACT. An account is given of the cirolanid fauna of Australia. The total number of species recorded is 102, of which 51 are new. Two new species not yet recorded from Australian coastal waters are also included. Full descriptions of all genera are given, and detailed descriptions and figures are given for all species not previously recorded from Australia or in need of redescription. The following genera and species are recorded from Australian waters: *Anopsilana* (2 species), *Bathynomus* (3 species), *Cartetolana* (1 species), *Cirolana* (30 species), *Eurydice* (8 species), *Eurylana* (1 species), *Excirolana* (1 species), *Hansenolana* (1 species), *Metacirolana* (7 species), *Natatolana* (31 species), *Neocirolana* (5 species), *Orphelana* (1 species), *Pseudolana* (7 species), and three new genera—*Booralana* (2 species), *Dolicholana* (1 species) and *Limicolana* (1 species).

Keys to the Australian genera and species are provided. Discussion on characters of taxonomic utility is given. Annotated lists for all non-Australian genera and species are provided, and brief notes on the natural history of the family are provided.

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Australia occupies a geographic position of some significance; its northern shores are at the centre of the Indo-West Pacific Region, the western and eastern coasts are on the Indian and Pacific Oceans respectively, and the southern coasts are adjacent to the sub-antarctic seas. Taxonomic research in Australia has profound significance for these areas as, without exception, their shallow-water peracarid faunas are poorly known.

Although the peracarid crustacean fauna of Australia has been perhaps better studied than that of adjacent areas, the extent of our knowledge has, until very recently, been extremely limited. This is clearly demonstrated by the work of J.L. Barnard and Margaret M. Drummond in their continuing series of publications on the Australian Amphipoda (Barnard, 1972, 1974; Barnard & Drummond, 1978, 1979) in which they have recorded 278 species, of which 181 (65%) are new. These studies deal only with the southern half of Australia, and demonstrate the variety to be expected.

The only other peracarid order to receive detailed attention is the Cumacea, revised by Hale in a long series of papers up to the early 1950's (Hale, 1951, 1953). The Tanaidacea have received no recent treatment other than that of Boesch (1973). The Mysidacea are equally poorly known, the recent catalogue provided by Mauchline & Murano (1977) listed only fifteen species from Australian waters. Until recently our knowledge of Australian Isopoda was in a similarly poor state.

Of the shallow-water marine isopod families, the Cirolanidae are second in number of genera and species only to the Sphaeromatidae. On a world wide basis, the study of isopod taxonomy in the tropics and subtropics is still in its infancy. As marine invertebrate taxa often reach their greatest diversity in tropical areas, Australia seemed a particularly appropriate place to undertake a monographic study of such a family. In Australia, the standard works of reference to the Cirolanidae and related families were those of Hale (1925, 1926, 1940). From the time of Hale to the first of the present series of articles that I published on the Cirolanidae (Bruce, 1979) only one new species of cirolanid was recorded from Australian waters (Griffin, 1975). Effectively, Australian cirolanids were little studied.

MATERIALS AND METHODS

Specimens for study were obtained by personal collecting on the Great Barrier Reef (intertidally, and subtidally using SCUBA), from sand beaches of southeastern Queensland and northern New South Wales, and general intertidal collecting at various localities around Australia. The bulk of the material was obtained on loan from the various state museums, and also museums abroad. Type specimens were studied, where available, of all *Natatolana* from the Indo-