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Biology of the Anomura — foreword to this special issue

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The Latin name Anomura, widely in use since the mid nineteenth century, is attributed to MacLeay (1838) even though the names Anomalia and Anomala are the oldest (McLaughlin and Holthuis, 1985). Ever since the concept of the group was first proposed by Latreille (1816) albeit in the vernacular form "anomaux", there has been controversy over its composition, classification and evolutionary relationships. Most carcinologists currently accept that the Anomura consist of the Lomisoidea, Galatheoidea, Hippoidea and Paguroidea (e.g. Martin and Davis, 2001). However, to some, the interpretation of the Thalassinoidea and Dromiacea—groups that have drifted in and out (current consensus is that both are out) of the Anomura—continues to prove problematical.

Interest in the study of the systematics and biology of the Anomura has been renewed in the last decade or so. This has been a most welcome development for this group has traditionally been one of the least understood of decapod crustaceans. In part, this interest has been fueled by a remarkable increase in descriptive works documenting anomuran diversity throughout the world oceans, in particular from the deep sea and from the Indo-Pacific region, but also of the South American endemic freshwater family Aeglidae. Equally important have been studies on biological aspects of semi-terrestrial, shallow-water, and deep-sea vent-associated species. Key fossil discoveries have been made in Paguridae, Lithodidae and Aeglidae. A number of ground-breaking studies have been published using modern phylogenetic methods to analyse new or improved data from adult and larval morphology, mitochondrial DNA, gene rearrangement, and sperm ultrastructure. As a result, a fresh although still hotly debated picture of anomuran evolution is emerging.

An opportunity to organise a symposium, *Biology of the Anomura*, the first devoted exclusively to this group, came with the Fifth International Crustacean Congress (ICC5), 9–13 July 2001, in Melbourne, Australia. Altogether, 51 authors presented 11 oral papers and 14 posters on one day during the Congress. This volume of the *Memoirs of Museum Victoria* presents 16 papers by 26 authors, and represents but a cross-section of the groups and fields now under study by anomuran co-workers worldwide. Included are two important review papers on neurobiology and semi-terrestrial adaptations; three on ecology of hermit crabs; three on morphology, metabolism, and reproduction of the endemic Aeglidae; six on taxonomy, including modern keys to all families and genera of hermit crabs with diagnoses of genera of Paguridae; one on porcellanid biogeography; and one providing a new theoretical approach to resolving the long-standing problem of whether the Podotremata crabs belong in the Brachyura or Anomura. Not all those who attended the symposium submitted manuscripts for this volume. Others who could not attend the Congress submitted papers for this volume.

As coordinators of the Symposium, and editors of this volume, we trust this will be the first of many symposia and papers focusing on the fascinating and challenging group that are the anomurans.

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