



<http://dx.doi.org/10.11646/zootaxa.3734.1.3>

<http://zoobank.org/urn:lsid:zoobank.org:pub:07056FC1-8405-4792-9781-E484EF9C1500>

## New species and new records of deepwater munidid squat lobsters from north-western Australia: *Onconida*, *Bathymunida*, *Crosnierita*, *Plesionida* and *Torbenella*

SHANE T. AHYONG<sup>1</sup>, JOANNE TAYLOR<sup>2</sup> & ANNA W. MCCALLUM<sup>2</sup>

<sup>1</sup>Australian Museum, 6 College St., Sydney, NSW 2010, Australia; and School of Biological, Earth & Environmental Sciences, University of New South Wales, Kensington, NSW 2052, Australia. E-mail: [shane.ahyong@austmus.gov.au](mailto:shane.ahyong@austmus.gov.au)

<sup>2</sup>Museum Victoria, GPO Box 666, Melbourne, VIC 3001, Australia.

E-mail: [jtaylor@museum.vic.gov.au](mailto:jtaylor@museum.vic.gov.au), [amccallum@museum.vic.gov.au](mailto:amccallum@museum.vic.gov.au)

### Abstract

Seven species of Munididae are reported from the continental margin of north-western Australia. Three species are new to science: *Crosnierita adela* **sp. nov.**, *Onconida ariel* **sp. nov.** and *Plesionida aurelia* **sp. nov.**, each presently known only from Western Australia. Four species are reported for the first time from Australian waters, *Bathymunida balssi* Van Dam, 1838, *Bathymunida dissimilis* Baba & de Saint Laurent, 1996, *Crosnierita yante* (Macpherson, 1994) and *Torbenella orbis* (Baba, 2005). Keys to the world species of the genera represented are provided.

**Key words:** Crustacea, Decapoda, Anomura, Munididae, squat lobster, *Onconida*, *Bathymunida*, *Crosnierita* and *Plesionida*, new species, key, Western Australia, Australia, taxonomy

### Introduction

Recent sampling off Western Australia by RV *Southern Surveyor* under the joint CSIRO Marine and Atmospheric Research (CMAR) and Museum Victoria programmes, “Mapping benthic ecosystems on the deep continental shelf and slope in Australia’s South West Region” (SS10-2005) and “Exploring and characterising marine ecosystems of the NW Region” (SS05-2007), resulted in important collections of decapod crustaceans, including many squat lobsters (Poore *et al.* 2008; Taylor *et al.* 2010; Poore & Andreakis 2011; McCallum & Poore 2013).

The squat lobster family Munididae Ahyong, Baba, Macpherson & Poore, 2010, comprises 20 genera and about 400 species; the largest genus being *Munida* Leach, 1820 with more than 250 species (Baba *et al.* 2008). Members share a trifold or trispinous anterior margin of the carapace and usually occur at outer shelf or slope depths. The Munididae can be divided into two groups based on the presence or absence of pleopod 1 in males (Ahyong *et al.* 2011). The Group 1 munidids have a pleopod 1 in males modified as a gonopod and comprise eight genera including the type genus *Munida*. The Group 2 munidids all lack the male pleopod 1 and comprise 12 genera related to *Agononida* Baba & de Saint Laurent, 1996, and *Bathymunida* Balss, 1914. Of the Group 2 munidids, the species of *Agononida* were recently studied by Poore & Andreakis (2012). Here we report on the remaining Group 2 species, all taken by SS05-2007, comprising representatives of *Bathymunida* Balss, 1914, *Torbenella* Baba, 2008, *Crosnierita* Macpherson, 1998, *Onconida* Baba & de Saint Laurent, 1996, and *Plesionida* Baba & de Saint Laurent, 1996, including new species from the latter three genera.

### Material and methods

Morphological terminology generally follows Baba (2005) and Ahyong *et al.* (2010). Carapace length (cl) is measured along the dorsal midline from the rostral apex to the posterior margin of the carapace. Postorbital carapace length (pcl) is measured dorsally from the posterior margin of the orbit to the posterior margin of the

extensor marginal spines in addition to the distal spine; the extensor meral margins of pereopods 3 and 4 have only the distal spine. Baba (2005) noted the presence of a decalcified area on the surface of the ischium on pereopods 1–3 of the holotype of *T. orbis*. Similar translucent, decalcified areas are evident in two of the present specimens, indistinct in the other.

**Distribution.** Kei Islands, Norfolk Island and now from Western Australia; 260–456 m.

## Acknowledgments

We are grateful to Chris Rowley and Melanie Mackenzie (both Museum Victoria) for collection management support, Gary Poore (Museum Victoria) for initial sorting of specimens, Karen Gowlett-Holmes (CSIRO) for permission to reproduce her colour images of squat lobsters. Funding for the surveys was provided by the Commonwealth Department of the Environment and the CSIRO Wealth from Oceans Flagship. This work was partially supported by a Postdoctoral Fellowship from Australian Biological Resources Study (ABRS) to the first and last authors, and the Marine Biodiversity Hub through the Australian Government's National Environmental Research Program (NERP). Funding for the second author's postdoctoral fellowship was provided through the Census of Marine Life project, "Continental Margin Ecosystems" (COMARGE). Travel support was provided for work conducted at the Australian Museum, Sydney, through the Encyclopedia of Life (EOL)/ Smithsonian Institution Rubenstein Fellowship.

## References

- Ahyong, S.T., Baba, K., Macpherson, E. & Poore, G.C.B. (2010) A new classification of the Galatheoidea (Crustacea: Decapoda: Anomura). *Zootaxa*, 2676, 57–68.
- Ahyong, S.T. & Poore, G.C.B. (2004) Deep-water Galatheidae (Crustacea: Decapoda: Anomura) from southern and eastern Australia. *Zootaxa*, 472, 3–76.
- Baba, K. (1986) Two new anomuran Crustacea (Decapoda: Anomura) from north-west Australia. *The Beagle, Occasional Papers of the Northern Territory Museum of Arts and Sciences*, 3, 1–5.
- Baba, K. (1994) Deep-sea galatheid crustaceans (Anomura: Galatheidae) collected by the 'Cidaris I' Expedition off central Queensland, Australia. *Memoirs of the Queensland Museum*, 35, 1–21.
- Baba, K. (2005) Deep-sea chirostylid and galatheid crustaceans (Decapoda: Anomura) from the Indo-West Pacific, with a list of species. *Galathea Reports*, 20, 1–317.
- Baba, K. (2008) *Torbenella*, a replacement name for *Torbenia* Baba, 2005 (Decapoda, Galatheidae) preoccupied by *Torbenia* Libert, 2000 (Insecta, Lepidoptera, Lycaenidae). *Crustaceana*, 81, 1021–1022.  
<http://dx.doi.org/10.1163/156854008x354885>
- Baba, K., Macpherson, E., Poore, G.C.B., Ahyong, S.T., Bermudez, A., Cabezas, P., Lin, C.-W., Nizinski, M., Rodrigues, C. & Schnabel, K. (2008) Catalogue of squat lobsters of the world (Crustacea: Decapoda: Anomura—families Chirostylidae, Galatheidae and Kiwaidae). *Zootaxa*, 1905, 1–220.
- Baba, K., Macpherson, E., Lin, C.-W. & Chan, T.-Y. (2009) *Crustacean Fauna of Taiwan: squat lobsters (Chirostylidae and Galatheidae)*. National Science Council, Taiwan, R.O.C., Taipei, 312 pp.
- Baba, K. & Poore, G.C.B. (2002) *Munidopsis* (Decapoda, Anomura) from south-eastern Australia. *Crustaceana*, 75, 231–252.  
<http://dx.doi.org/10.1163/156854002760095363>
- Baba, K. & de Saint Laurent, M. (1996) Crustacea Decapoda : Revision of the genus *Bathymunida* Balss, 1914, and description of six new related genera (Galatheidae). In: Crosnier, A. (ed.), *Résultats des Campagnes MUSORSTOM, volume 15. Mémoires du Muséum national d'Histoire naturelle*, Paris, 168, 433–502.
- Balss, H. (1914) Ueber einige interessante Decapoden der "Pola"-Expeditionen in das Rote Meer. *Sitzungsberichte der Mathematisch-Naturwissenschaftlichen Klasse der Kaiserlichen Akademie der Wissenschaften in Wien*, 1914, 133–139.
- Cabezas, P., Macpherson, E. & Machordom, A. (2009) Morphological and molecular description of new species of squat lobster (Crustacea: Decapoda: Galatheidae) from the Solomon and Fiji islands (SW Pacific). *Zoological Journal of the Linnean Society*, London, 156, 465–493.  
<http://dx.doi.org/10.1111/j.1096-3642.2008.00492.x>
- Haig, J. (1973) Galatheidea (Crustacea, Decapoda, Anomura) collected by the F.I.S. Endeavour. *Records of the Australian Museum*, 28, 269–289.  
<http://dx.doi.org/10.3853/j.0067-1975.28.1973.411>
- Henderson, J.R. (1885) Diagnoses of new species of Galatheidae collected during the "Challenger" expedition. *Annals and Magazine of Natural History*, ser. 5, 16, 407–421.  
<http://dx.doi.org/10.1080/00222938509459908>

- Henderson, J.R. (1888) Report on the Anomura collected by H.M.S. *Challenger* during the years 1873–76. Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873–76. *Zoology*, 27, 1–221, pls. 1–221. <http://dx.doi.org/10.1080/00222938909460379>
- Leach, W.E. (1820) Galatéadées. In: *Dictionnaire des Sciences Naturelles*. F. G. Leveault, Paris, pp. 49–56.
- Libert, M. (2000) Le genre *Ornipholidotos* Bethune-Baker au Cameroun. Description du genre *Torbenia* n. gen. et onze nouvelles espèces (Lepidoptera, Lycaenidae). *Bulletin de la Société entomologique de France*, 105, 433–466.
- Macpherson, E. (1994) Crustacea Decapoda: Studies on the genus *Munida* Leach, 1820 (Galatheidae) in New Caledonia and adjacent waters with descriptions of 56 new species. In: Crosnier, A. (ed.), *Résultats des Campagnes MUSORSTOM, Vol. 12. Mémoires du Muséum national d'Histoire naturelle*, Paris, 161, 421–569.
- Macpherson, E. (1996) Crustacea Decapoda: new records of species of the genera *Munida* Leach, 1820 and *Paramunida* Baba, 1988 (Galatheidae) from New Caledonia, with the descriptions of three new species. In: Crosnier, A. (Ed.), *Résultats des Campagnes MUSORSTOM, volume 15. Mémoires du Muséum national d'Histoire naturelle*, Paris, 168, 423–431.
- Macpherson, E. (1998) A new genus of Galatheidae (Crustacea, Anomura) from the western Pacific Ocean. *Zoosystema*, 20, 351–355.
- Macpherson, E. (2000) Crustacea Decapoda: species of the genera *Crosnierita* Macpherson, 1998, *Munida* Leach, 1820, and *Paramunida* Baba, 1988 (Galatheidae) collected during the MUSORSTOM 9 cruise to the Marquesas Islands. In: Crosnier, A. (Ed.), *Résultats des Campagnes MUSORSTOM, Vol. 21. Mémoires du Muséum national d'Histoire naturelle*, Paris, 184, 415–423.
- Macpherson, E. (2004) Species of the genus *Munida* Leach, 1820 and related genera from Fiji and Tonga (Crustacea: Decapoda: Galatheidae). In: Marshall, B.A., Richer de Forges, B. (Eds.), *Tropical Deep Sea Benthos, volume 23. Mémoires du Muséum national d'Histoire Naturelle*, Paris, 191, 231–292.
- Macpherson, E. (2006) New species and new occurrence of Galatheoidea (Crustacea, Decapoda) from New Caledonia. *Zoosystema*, 28, 669–681. <http://dx.doi.org/10.5252/z2009n3a3>
- Macpherson, E. (2013) New species and new occurrences of squat lobsters (Crustacea, Decapoda, Munididae, Eumunididae) from French Polynesia. In: Ahyong, S.T., Chan, T.-Y., Corbari, L. & Ng, P.K.L. (Eds.), *Tropical Deep Sea Benthos, Vol. 26. Mémoires du Muséum national d'Histoire naturelle*, Paris, 191, 273–295.
- Macpherson, E. & Baba, K. (2006) New species and records of small galatheids (Crustacea, Decapoda, Galatheidae) from the southwest and central Pacific Ocean. *Zoosystema*, 28, 443–456.
- McCallum, A.W. & Poore, G.C.B. (2013) Chirostylidae of Australia's western continental margin (Crustacea: Decapoda : Anomura), with the description of five new species. *Zootaxa*, 3664 (2), 149–175. <http://dx.doi.org/10.11646/zootaxa.3664.2.3>
- Melin, G. (1939) Paguriden und Galatheiden von Prof. Dr. Sixten Bocks Expedition nach den Bonin-Inseln 1914. *Kungliga Svenska Vetenskapsakademiens Handlingar*, 18, 1–119.
- Poore, G.C.B. & Andreakis, N. (2011) Morphological, molecular and biogeographic evidence support two new species in the *Uroptychus naso* complex (Crustacea: Decapoda: Chirostylidae). *Molecular Phylogenetics and Evolution*, 60, 152–169. <http://dx.doi.org/10.1016/j.ympev.2011.03.032>
- Poore, G.C.B. & Andreakis, N. (2012) The *Agononida incerta* species complex unravelled (Crustacea: Decapoda: Anomura: Munididae). *Zootaxa*, 3429, 1–29.
- Poore, G.C.B., McCallum, A.W. & Taylor, J. (2008) Decapod Crustacea of the continental margin of southwestern and central Western Australia: preliminary identifications of 524 species from FRV Southern Surveyor voyage SS10-2005. *Museum Victoria Science Reports*, 11, 1–106.
- Samouelle, G. (1819). *The entomologists' useful compendium; or an introduction to the knowledge of British Insects, comprising the best means of obtaining and preserving them, and a description of the apparatus generally used; together with the genera of Linné, and modern methods of arranging the Classes Crustacea, Myriapoda, spiders, mites and insects, from their affinities and structure, according to the views of Dr. Leach. Also an explanation of the terms used in entomology; a calendar of the times of appearance and usual situations of near 3,000 species of British Insects; with instructions for collecting and fitting up objects for the microscope*. Thomas Boys, London, 496 pp, 12 pls.
- Taylor, J., Ahyong, S.T. & Andreakis, N. (2010) New records and new species of the munidopsine squat lobsters (Decapoda: Anomura: Galatheidae: Munidopsinae) from Australia. *Zootaxa*, 2642, 1–18.
- Van Dam, A.J. (1938) Die Gattung *Bathymunida* Balss. *Zoologischer Anzeiger*, 121, 194–202.
- Yokoya, Y. (1933) On the distribution of decapod crustaceans inhabiting the continental shelf around Japan, chiefly based upon the materials collected by S.S. Soyo-Maru during the years 1923–30. *Journal of the College of Agriculture, Tokyo Imperial University*, 12, 1–226.