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**Monograph of the Australian Bithyniidae  
(Caenogastropoda: Rissooidea)**

WINSTON F. PONDER



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## Monograph of the Australian Bithyniidae (Caenogastropoda: Rissosoidea)

WINSTON F. PONDER

Australian Museum, 6 College Street, Sydney, NSW 2010, Australia; [winstonp@austmus.gov.au](mailto:winstonp@austmus.gov.au)

### Table of contents

Abstract .....	4
Introduction .....	4
Materials and methods .....	7
Abbreviations .....	8
Taxonomy .....	8
Bithyniidae Gray, 1857 .....	8
Genus <i>Gabbia</i> Tryon, 1865 .....	9
Key to the Australian species of Bithyniidae .....	13
Species descriptions .....	15
<i>Gabbia vertiginosa</i> (Frauenfeld, 1862) .....	15
<i>Gabbia iredalei</i> Cotton, 1942 .....	29
<i>Gabbia campicola</i> n. sp. ....	31
<i>Gabbia kendricki</i> n. sp. ....	38
<i>Gabbia pallidula</i> n. sp. ....	41
<i>Gabbia davisii</i> n. sp. ....	47
<i>Gabbia napierensis</i> n. sp. ....	50
<i>Gabbia rotunda</i> n.sp. ....	51
<i>Gabbia fontana</i> n.sp. ....	55
<i>Gabbia obesa</i> n.sp. ....	60
<i>Gabbia tumida</i> n. sp. ....	63
<i>Gabbia smithii</i> (Tate, 1882) .....	65
<i>Gabbia kessneri</i> n. sp. ....	75
<i>Gabbia beecheyi</i> n. sp. ....	82
<i>Gabbia affinis</i> (Brazier ms Smith, 1882) .....	85
<i>Gabbia microcosta</i> n. sp. ....	90
<i>Gabbia adusta</i> n.sp. ....	92
<i>Gabbia lutaria</i> n.sp. ....	98
<i>Gabbia clathrata</i> n.sp. ....	101

<i>Gabbia spiralis</i> n.sp. ....	103
<i>Gabbia carinata</i> n.sp. ....	105
Discussion .....	109
Acknowledgments .....	112
References .....	112
Appendix .....	119

## Abstract

The Bithyniidae is represented in Australia by a single genus-group, *Gabbia* Tryon, 1865. The species, including the type species of the genus, are described using shell, opercula, radular and anatomical characters. Twenty one species are recognised, 17 of them new. The genus *Gabbia* is redefined as incorporating a much wider diversity of shell morphology than previously envisaged with some species having smooth shells while others have strong axial or spiral sculpture or both. The following previously named species are recognised as valid: *G. vertiginosa* Frauenfeld (= *Gabbia australis* Tryon), *G. iredalei* Cotton, *G. affinis* Smith and *G. smithii* Tate. The 17 new species described are *G. campicola* n.sp., *G. kendricki* n.sp., *G. pallidula* n.sp., *G. davisii* n.sp., *G. napiensis* n.sp., *G. rotunda* n.sp., *G. fontana* n.sp., *G. obesa* n.sp., *G. tumida* n.sp., *G. kessneri* n.sp., *G. beecheyi* n.sp., *G. microcosta* n.sp., *G. adusta* n.sp., *G. lutaria* n.sp. *G. clathrata* n.sp., *G. spiralis* n.sp. and *G. carinata* n.sp. Most species live in northern Australia, with a few in the central and eastern parts but members of the family are absent from southern-most mainland Australia and Tasmania.

**Key words:** *Bithynia*, *Gabbia*, taxonomy, new species, radula, operculum, anatomy, distribution, artesian springs

## Introduction

Bithyniids are small to medium-sized operculate freshwater gastropods previously thought to be poorly represented in Australia, with only one valid species listed by Smith (1992). Members of the family are found throughout Eurasia, Africa and Indo-Malaya but are absent in the Americas (apart from an introduced species in North America). They reach their greatest diversity in SE Asia, including India, and Africa but are absent from Tasmania and some Gondwanan fragments (New Zealand, New Caledonia, South America and Madagascar) (Bănărescu, 1990).

McMichael (1967: 133) noted that “practically nothing is known of the biology of Australian hydrobiids and bithyniids”. While our understanding of Australian hydrobiids has improved considerably over the last decade (see Ponder and Colgan, 2002 for summary) virtually nothing has been added to our knowledge of bithyniids. In Australia, members of the family are found mainly in the inland, the east coast, and the northern coastal drainages where they are typically living in temporary ponds, billabongs, swamps and sluggish streams.