

CONTENTS

List of authors	v
1 Introducing bryozoans	1
Patricia L. Cook, Dennis P. Gordon, Peter J. Hayward, Philip E. Bock and Yvonne Bone	
1.1 Introduction	1
1.2 Phylogeny and classification	2
1.3 Ecology of bryozoans	5
1.4 Economic significance	10
References	11
2 History of discovery in Australian waters	17
Philip E. Bock, Patricia L. Cook and Dennis P. Gordon	
2.1 Introduction	17
2.2 Early collections: 1700s and 1800s	17
2.3 Collecting in the 1900s	21
2.4 Bryozoa to the present, and current status of collecting	22
References	23
3 General morphology and terminology	29
Philip E. Bock, Patricia L. Cook and Dennis P. Gordon	
3.1 External characteristics and astogeny	29
3.2 Skeletal system	31
3.3 Colonial tropisms, kineses and mobility	33
3.4 Feeding and digestive system	34
3.5 Interzooidal communications and the funicular system	36
3.6 Respiration and excretion	38
3.7 Degeneration and regeneration cycles	38
3.8 Nervous system and sense organs	39
3.9 Glandular systems	40
3.10 Reproduction	40
3.11 Genetic studies	45
References	47
4 Modern and Cenozoic bryozoan colony classification schemes	55
Yvonne Bone	
4.1 Introduction	55
4.2 Examples of bryozoan growth forms	56
4.3 Substratum and attachment	61
4.4 Conclusion	62
Acknowledgements	63
References	63
5 Bryozoans on seamounts	65
Dennis P. Gordon	
5.1 Introduction	65
5.2 Australian seamounts	65
5.3 Bryozoans on Australian and New Zealand seamounts	66
References	68

6	Bryozoans and biosecurity	71
	Dennis P. Gordon	
6.1	Introduction	71
6.2	Bryozoans as marine-fouling organisms	71
6.3	Alien bryozoans in Australia	73
6.4	Conclusion	84
	References	84
	Colour plates	91
7	Bryozoans and biotechnology	121
	Michèle Prinsep	
7.1	Introduction	121
7.2	Compounds isolated from bryozoans	122
7.3	Compounds used against bryozoans	131
7.4	Conclusion	132
	References	132
8	Bryozoans and ocean acidification	139
	Abigail M. Smith	
8.1	Ocean acidification: an old, but new global problem	149
8.2	What can we do about acidification?	140
8.3	Bryozoans as potential allies	140
8.4	Bryozoans as ‘canaries’	140
8.5	Bryozoan growth models	141
8.6	Bryozoans as sentinels	142
8.7	Conclusion	142
	References	143
9	Bryozoans in the marine benthos	145
	Robyn L. Cumming, Dennis P. Gordon and Karen Gowlett-Holmes	
9.1	Introduction	145
9.2	Temperate benthic environments	146
9.3.	Tropical benthic environments	150
9.4.	Environmental correlates	156
9.5.	Bryozoans as habitat	157
	Acknowledgements	157
	References	158
10	Fossil bryozoans of Australia	163
	Section A – Palaeozoic Era	
	Catherine M. Reid	
A10.1	Introduction	163
A10.2	Class Stenolaemata – (range Ordovician to Recent)	163
A10.3	Class Gymnolaemata (range Ordovician to Recent)	164
	Section B – Mesozoic–Cenozoic Eras	165
	Rolf Schmidt	
B10.1	Mesozoic	165
B10.2	Cenozoic	165
	Glossary	171
	Index	177