

Cambridge University Press

0521436125 - Morphogenesis: The Cellular and Molecular Processes of Developmental
Anatomy

Jonathan Bard

Table of Contents

[More information](#)

Contents

<i>Preface to the paperback edition</i>	page ix
<i>Preface to the hardback edition</i>	xi
<i>Acknowledgements</i>	xiii
1 Introduction	1
1.1 A definition	1
1.2 The approach	3
1.3 The plan	5
2 Background	7
2.1 The past	7
2.2 Strategies	14
2.3 Conclusions	23
3 Case studies	24
3.1 Introduction	24
3.2 Amphibian development	25
3.3 Sea-urchin gastrulation	28
3.4 Induction	34
3.5 The morphogenesis of the chick cornea	49
3.6 Lessons from the case studies	59
4 The molecular basis of morphogenesis	65
4.1 Introduction	65
4.2 The extracellular matrix (ECM)	66
4.3 The cell membrane	82
4.4 The intracellular contribution	99
4.5 The limitations of the molecular approach	117
5 The morphogenetic properties of mesenchyme	120
5.1 Introduction	120
5.2 Movement	122
5.3 Cooperation among mesenchymal cells	145

Cambridge University Press

0521436125 - Morphogenesis: The Cellular and Molecular Processes of Developmental
Anatomy

Jonathan Bard

Table of Contents

[More information](#)

vi	<i>Contents</i>	
	5.4 Condensation	151
	5.5 Growth and death	173
6	The epithelial repertoire	181
	6.1 Introduction	181
	6.2 Polarity	183
	6.3 Palisading	188
	6.4 Changing the shape of epithelia	191
	6.5 Enlargement and growth	209
	6.6 The movement of epithelia	212
	6.7 Gastrulation in <i>Xenopus</i>	227
7	A dynamic framework for morphogenesis	238
8	Pulling together some threads	240
	8.1 The nature of morphogenetic theory	240
	8.2 Morphogenetic dynamics	244
	8.3 Morphogenesis and growth	259
	8.4 Storing morphogenetic information	262
	<i>Appendix 1: Supplementary references</i>	267
	<i>Appendix 2: The morphogenetic toolkit</i>	275
	<i>Appendix 3: Unanswered questions</i>	277
	<i>References</i>	279
	<i>Index</i>	302
	<i>Brief index of morphogenetic systems</i>	313