Contents

Contributors vii
Preface xi

PART 1: INTRODUCTION

1. Tectonics of sedimentary basins, with revised nomenclature 3
   Raymond V. Ingersoll

PART 2: NEW TECHNIQUES AND MODELING

2. Detrital zircon U-Pb geochronology: current methods and new opportunities 47
   George Gehrels

3. Terrestrial cosmogenic nuclide techniques for assessing exposure history of surfaces and sediments in active tectonic regions 63
   John C. Gosse

4. Magnetostratigraphic methods and applications 80
   Guillaume Dupont-Nivet and Wout Krijgsman

5. 3D seismic interpretation techniques: applications to basin analysis 95
   Christopher A-L. Jackson and Karla E. Kane

6. Dispersal and preservation of tectonically generated alluvial gravels in sedimentary basins 111
   Philip A. Allen and Paul L. Heller

7. Source-to-sink sediment volumes within a tectono-stratigraphic model for a Laramide shelf-to-deep-water basin: methods and results 131
   Cristian Carvajal and Ron Steel

8. Modeling the interaction between lithospheric and surface processes in foreland basins 152
   Daniel Garcia-Castellanos and Sierd Cloetingh

9. Continental rift basins: the East African perspective 185
   Cynthia Ebinger and Christopher A. Scholz

10. Influence of sediment input and plate-motion obliquity on basin development along an active oblique-divergent plate boundary: Gulf of California and Salton Trough 209
    Rebecca J. Dorsey and Paul J. Umhoefer

11. Active transtensional intracontinental basins: Walker Lane in the western Great Basin 226
    Angela S. Jayko and Marcus Bursik

12. Post-rift deformation of the North East and South Atlantic margins: are “passive margins” really passive? 249
    Douglas Paton

13. The impact of early Cretaceous deformation on deposition in the passive-margin Scotian Basin, offshore eastern Canada 270
    Georgia Pe-Piper and David J.W. Piper

PART 3: RIFT, POST-RIFT, TRANSTENSIONAL, AND STRIKE-SLIP BASIN SETTINGS

PART 4: CONVERGENT MARGINS: SUBDUCTION AND COLLISION, FROM OUTBOARD TO INBOARD SETTINGS

14. Sedimentation at plate boundaries in transition 291
    Kathleen M. Marsaglia

15. Evolution of sedimentary environments in the subduction zone
Contents

of southwest Japan: recent results from the NanTroSEIZE Kumano transect 310
Michael B. Underwood and Gregory F. Moore

16. Modification of continental forearc basins by flat-slab subduction processes: a case study from southern Alaska 327
Kenneth D. Ridgway, Jeffrey M. Trop and Emily S. Finzel

17. Basins in arc-continent collisions
Amy E. Draut and Peter D. Clift

18. The Pampa del Tamarugal forearc basin in Northern Chile: the interaction of tectonics and climate 369
Peter Nester and Teresa Jordan

19. Extensional and transtensional continental arc basins: case studies from the southwestern United States 382
Cathy J. Busby

20. Foreland basin systems revisited: variations in response to tectonic settings 405
Peter G. DeCelles

21. Cenozoic evolution of hinterland basins in the Andes and Tibet 427
Brian K. Horton

22. Basin response to active extension and strike-slip deformation in the hinterland of the Tibetan Plateau 445
Michael H. Taylor, Paul A. Kapp, and Brian K. Horton

23. The Betic intramontane basins (SE Spain): stratigraphy, subsidence, and tectonic history 461
José Rodríguez-Fernández, Antonio Azor, and José Miguel Azañón

24. Dynamic relationship between subsidence, sedimentation, and unconformities in mid-Cretaceous, shallow-marine strata of the Western Canada Foreland Basin: links to Cordilleran tectonics 480
A. Guy Plint, Aditya Tyagi, Phil J.A. McCausland, Jessica R. Krawetz (née Rylaarsdam), Heng Zhang, Xavier Roca, Bogdan L. Varban, Y. Greg Hu, Michael A. Kreitner and Michael J. Hay

25. Structural, geomorphic, and depositional characteristics of contiguous and broken foreland basins: examples from the eastern flanks of the central Andes in Bolivia and NW Argentina 508
Manfred R. Strecker, George E. Hilley, Bodo Bookhagen, and Edward R. Sobel

26. Thrust wedge/foreland basin systems 522
Hugh Sinclair

27. 2D kinematic models of growth fault-related folds in contractional settings 538
Josep Poblet

PART 5: PLATE INTERIOR BASINS AND WIDESPREAD BASIN TYPES

28. Plate interior poly-phase basins 567
Cari L. Johnson and Bradley D. Ritts

29. The great Grenvillian sedimentation episode: record of supercontinent Rodinia’s assembly 583
Robert Rainbird, Peter Cawood and George Gehrels

30. Cratonic basins 602
Philip A. Allen and John J. Armitage

31. Endorheic basins 621
Gary Nichols

Index 633

COMPANION WEBSITE

Scanned files of the previous edition are available on the companion website:

www.wiley.com/go/busby/sedimentarybasins