

Contents

The tectonic evolution of Laurentia and the North American continent: New datasets, insights, and modelsvii
Steven J. Whitmeyer, Dawn A. Kellett, Basil Tikoff, and Michael L. Williams

ARCHEAN

1. *Crustal genesis and evolution of the Archean Wyoming Province: Continental growth through vertical magmatic and horizontal tectonic processes*1
David W. Mogk, Carol D. Frost, Paul A. Mueller, B. Ronald Frost, and Darrell J. Henry

2. *Sedimentary processes, provenance, and tectonic control on fluvial sandstone geochemistry during Superior craton stabilization*25
Rasmus Haugaard, Shawna White, Taus R.C. Jørgensen, Ben Frieman, Dean Meek, Xiaohui Zhou, Lucie Mathieu, and John Ayer

3. *The Neoarchean, a turning point for geodynamic and magmatic processes within the Superior craton?*43
Lucie Mathieu, David Mole, Zsuzsanna Tóth, Kate Rubingh, Rasmus Haugaard, Shawna White, Chong Ma, Ben Frieman, Robert Lodge, Ross Sherlock, and Bruno Lafrance

PALEOPROTEROZOIC

4. *Paleoproterozoic Earth and the transition toward modern tectonic processes: A synopsis*55
D. Corrigan and D. Van Rooyen

5. *Paleoproterozoic geology of SW Montana: Implications for the paleogeography of the Wyoming craton and for the consolidation of Laurentia*65
Tekla A. Harms and Julia A. Baldwin

6. *Rapid postorogenic cooling of the Paleoproterozoic Cape Smith foreland thrust belt and footwall Archean basement, Trans-Hudson orogen, Canada*81
D.R. Skipton, M.R. St-Onge, D.A. Kellett, N.L. Joyce, and S. Smith

7. *A tectonic context for fluctuations in late Paleoproterozoic oxygen content*111
C.A. Partin

MESOPROTEROZOIC

8. *Laurentia in transition during the Mesoproterozoic: Observations and speculation on the ca. 1500–1340 Ma tectonic evolution of the southern Laurentian margin*123
Christopher G. Daniel, Ruth Aronoff, Aphrodite Indares, and James V. Jones III

9. *Circa 1.50–1.45 Ga metasedimentary rocks in southwestern Laurentia provide distinctive records of Mesoproterozoic regional orogenesis and craton interactions* 137
James V. Jones III and Christopher G. Daniel
10. *Petrologic constraints on the origin of Proterozoic ferroan granites of the Laurentian margin* 151
Carol D. Frost and B. Ronald Frost
11. *Linking the Pinware, Baraboo, and Picuris orogens: Recognition of a trans-Laurentian ca. 1520–1340 Ma orogenic belt* 175
Christopher G. Daniel, Aphrodite Indares, L. Gordon Medaris Jr., Ruth Aronoff, David Malone, and Joshua Schwartz
12. *Late Paleoproterozoic to early Mesoproterozoic deposition of quartz arenites across southern Laurentia* 191
L. Gordon Medaris Jr., Christopher G. Daniel, Michael F. Doe, James V. Jones III, and Joshua J. Schwartz
13. *Geoelectric constraints on the Precambrian assembly and architecture of southern Laurentia* 203
Benjamin S. Murphy, Paul A. Bedrosian, and Anna Kelbert

GRENVILLE

14. *The late Mesoproterozoic to early Neoproterozoic Grenvillian orogeny and the assembly of Rodinia: Turning point in the tectonic evolution of Laurentia* 221
Nicholas L. Swanson-Hysell, Toby Rivers, and Suzan van der Lee
15. *Potential terrane relationships between Laurentia and Amazonia during the Grenville orogenic cycle: A synthesis of the U-Pb zircon and Pb isotope records* 251
David P. Moecher, E. Tohver, and S.D. Samson
16. *Slow cooling in the metamorphic cores of Grenvillian large metamorphic core complexes and the thermal signature of the Ottawa orogenic lid* 269
Toby Rivers and Richard A. Volkert
17. *Geon 14 to early Geon 13 granitoid magmatism in the Grenville Province of Canada, northeastern Laurentia: Distribution, geochemical patterns, and links with an active-margin setting* 291
Aphrodite Indares, Abdelali Moukhsil, and Pierre-Arthur Groulier
18. *Local rapid exhumation in long-lived Grenville orogeny* 307
Xuefei Fan, Xu Chu, Wentao Cao, and Yi Zou

NEOPROTEROZOIC

19. *Neoproterozoic of Laurentia* 331
Francis A. Macdonald, W. Adolph Yonkee, Rebecca M. Flowers, and Nicholas L. Swanson-Hysell
20. *Pre-Pangean evolution of central southern Laurentia: Insights from zircon U/Pb geochronology, Marathon-Solitario fold-and-thrust belt, west Texas* 381
Patricia W. Dickerson, Blaine R. Hall, Daniel F. Stockli, Lisa D. Stockli, Richard E. Hanson, C. Mark Fanning, and Paul O'Sullivan

21. *Macrostratigraphy of the Ediacaran System in North America* 399
Daniel C. Segessenman and Shanan E. Peters
22. *The jagged western edge of Laurentia: The role of inherited rifted lithospheric structure in subsequent tectonism in the Pacific Northwest* 425
B. Tikoff, P. Kelso, A.K. Fayon, R. Gaschnig, R.M. Russo, J. Vervoort, B. Jicha, and M.J. Kahn
23. *Neoproterozoic to early Paleozoic tectono-stratigraphic framework for central Idaho: Windermere Supergroup in the northern sector of the U.S. Cordillera* 457
Daniel T. Brennan, David M. Pearson, Paul K. Link, and Jacob Milton

PALEOZOIC

24. *Paleozoic tectonic evolution of the rifted margins of Laurentia* 487
Cees R. van Staal and Alex Zagorevski
25. *Petrochronologic constraints on Paleozoic tectonics in southern New England* 505
Ian Hillenbrand, Michael L. Williams, Michael J. Jercinovic, Matthew T. Heizler, and Daniel J. Tjapkes
26. *Evolution of the Bronson Hill arc and Central Maine basin, northern New Hampshire to western Maine: U-Pb zircon constraints on the timing of magmatism, sedimentation, and tectonism* 533
J. Dykstra Eusden, Ian W. Hillenbrand, Elizabeth Folsom, Thorn Merrill, Kurt Niiler, and Audrey Wheatcroft
27. *Formation of the Green Mountain anticlinorium in northern Vermont at ca. 420 Ma* 561
Evan Tam, Laura E. Webb, Cheyne Aiken, Jonathan Kim, and Keith Klepeis
28. *Transformation of eastern North America from compression to extension in the Permian–Triassic* 577
Chong Ma, Willis E. Hames, David A. Foster, Wenjiao Xiao, Paul A. Mueller, and Mark G. Steltenpohl
29. *The Ordovician South Mayo Trough, a basin that recorded the passage of a triple junction along the Laurentian margin* 593
Paul D. Ryan and John F. Dewey
30. *Paleozoic evolution of the northern Laurentian margin: Evaluating links between the Caledonian, Ellesmerian, and Cordilleran orogens* 605
William C. McClelland, Justin V. Strauss, Jane A. Gilotti, and Maurice Colpron

MESOZOIC–CENOZOIC

31. *The North American Cordillera during the Mesozoic to Paleogene: Selected questions and controversies* 635
C.J. Busby, T.L. Pavlis, S.M. Roeske, and B. Tikoff
32. *Hit-and-run model for Cretaceous–Paleogene tectonism along the western margin of Laurentia* 659
B. Tikoff, B.A. Housen, J.A. Maxson, E.M. Nelson, S. Trevino, and T.F. Shipley

33. *The Laramide orogeny: Current understanding of the structural style, timing, and spatial distribution of the classic foreland thick-skinned tectonic system* 707
Arlo Brandon Weil and Adolph Yonkee
34. *Guerrero-Alisitos-Vizcaino superterrane of western Mexico and its ties to the Mexican continental margin (Gondwana and SW Laurentia)*..... 773
C.J. Busby