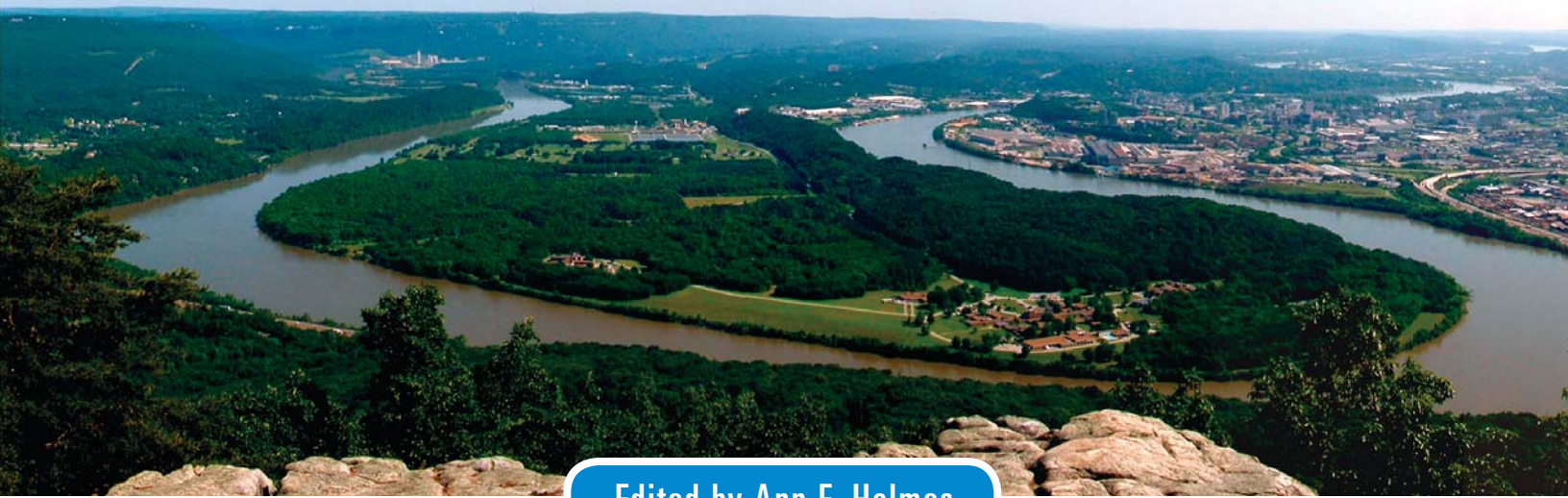
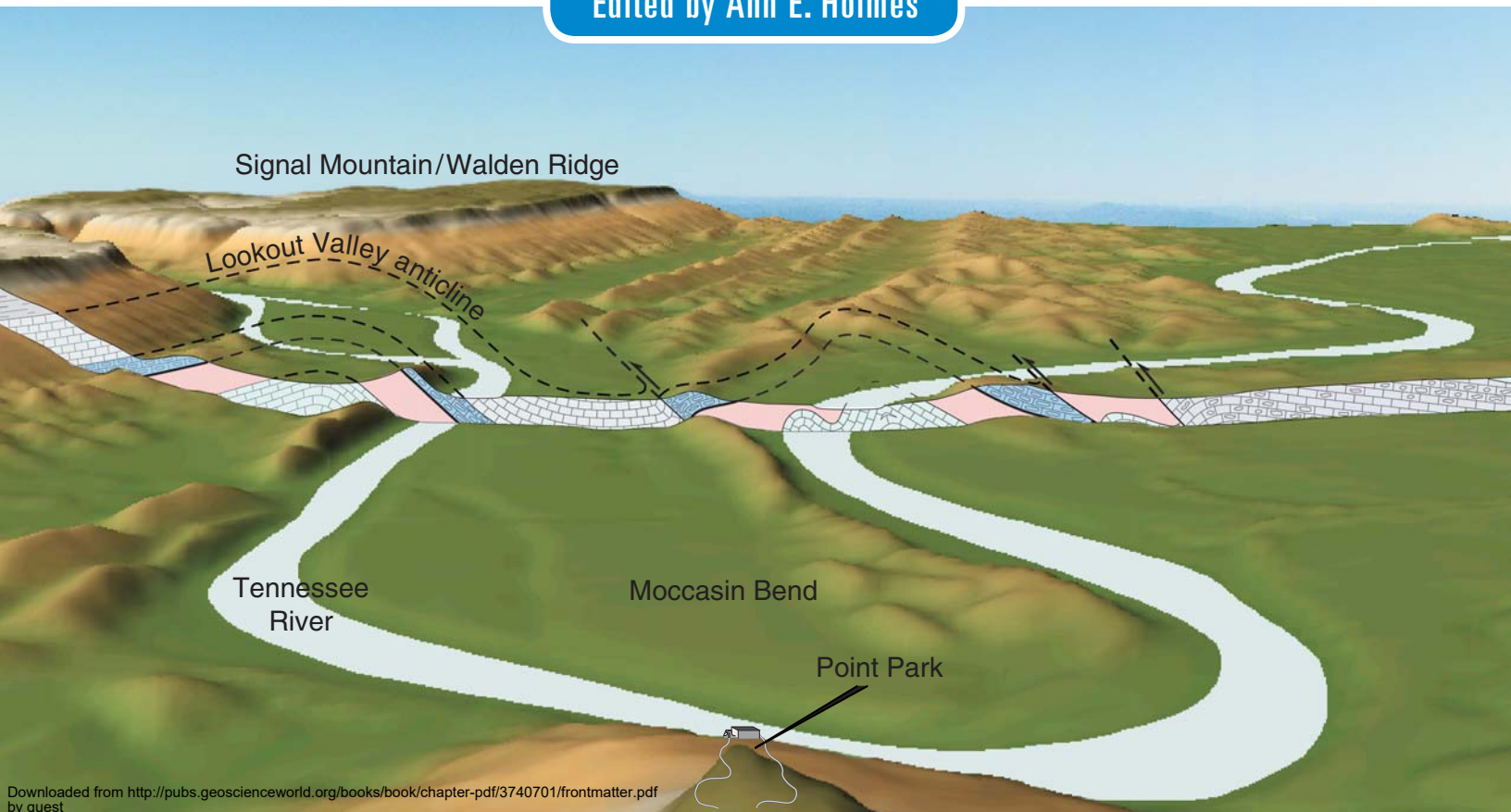


Diverse Excursions in the Southeast: Paleozoic to Present



Edited by Ann E. Holmes



*Diverse Excursions in the Southeast:
Paleozoic to Present*

edited by

Ann E. Holmes
Physics, Geology and Astronomy
University of Tennessee at Chattanooga
Grote 218D
615 McCallie Avenue, MC 6556
Chattanooga, Tennessee 37403, USA



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Cover: Photograph taken from Point Park on Lookout Mountain, looking north into downtown Chattanooga. Digital terrain rendered from USGS 10-m digital elevation data. Geology interpreted from R.C. Milici and others (1978, *Geologic Map of Hamilton County, Tennessee*: State of Tennessee, Department of Conservation, Division of Geology, Bulletin 79, Plate 1). Photograph and geologic interpretation by J.W. Mies.

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Foreword

The 64th annual meeting of the Geological Society of America Southeastern Section is being held in Chattanooga, Tennessee, 19–20 March 2015. Associated with this meeting are nine exciting field trips (see Fig. 1) that explore aspects of nearby geologic provinces, ranging from the Nashville dome in central Tennessee to the Cumberland Plateau near Chattanooga to the Blue Ridge and the Valley and Ridge provinces of Tennessee, Georgia, and Alabama.

Chapter 1 (Abolins et al.) and Chapter 9 (Wolak et al.) are based in the Nashville dome and Central Basin of central Tennessee. Abolins et al. investigate meso-scale faulting of Ordovician strata associated with the large-scale uplift of the northwest flank of the Nashville dome, while Wolak et al. explore Mississippian Fort Payne Formation Waulsortian mounds and associated facies exposed in newly excavated roadcuts along the eastern flank of the Nashville dome.

Chapters 3 (Brodie), 6 (Hatcher and Milici), and 7 (Knoll et al.) explore various aspects of the Cumberland Plateau geology. Brodie describes acid mine drainage abatement associated with Pennsylvanian coal, while Knoll et al. present the local hydrological history of Sewanee, Tennessee, as well as Alleghanian faulting in the vicinity. Hatcher and Milici present field evidence of thrust faulting seen in Mississippian and Pennsylvanian strata exposed in the cliffs bordering Sequatchie Valley, a breached anticlinal valley separating two segments of the Cumberland Plateau.

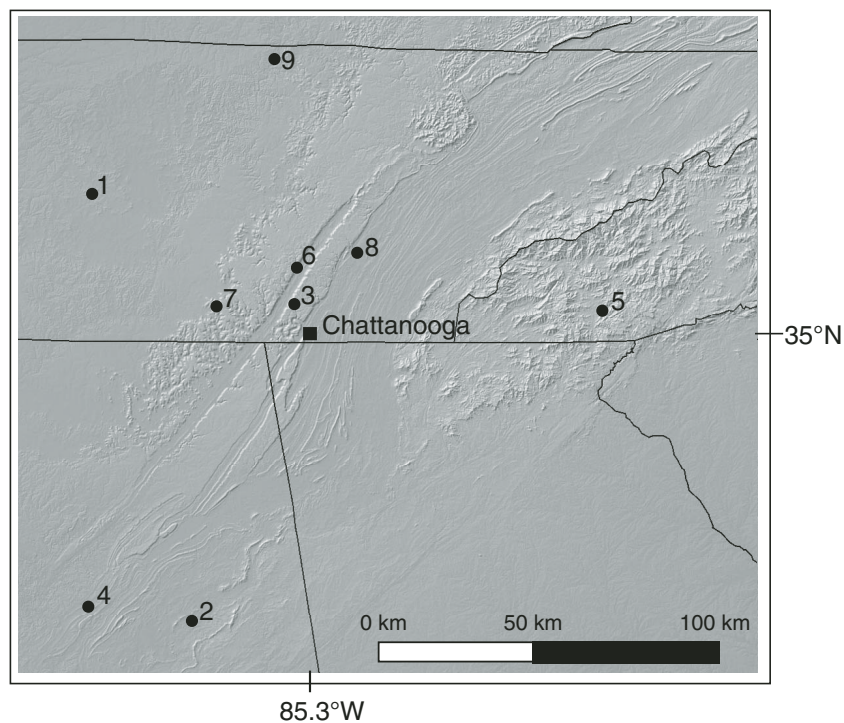


Figure 1. Numbers correspond to chapter numbers and approximate field trip locations. Chattanooga's latitude and longitude (35°N, 85.3°W) is indicated on the map border. Background image produced using GeoMapApp (www.geomapapp.org/).

The Valley and Ridge province hosts the field trips of Chapter 4 (Chowns and Rindsberg) and Chapter 8 (Witherspoon et al.). Chowns and Rindsberg document a sequence stratigraphic interpretation of the Silurian Red Mountain/Rockwood Formation using exposures in Birmingham, Gadsden, and Fort Payne, Alabama, as well as in Trenton, Georgia, and near Chattanooga, Tennessee, to build a basin-wide history. Much of the work is based on the stratigraphy, and invertebrate fauna and ichnofacies (trace fossil) evidence are also incorporated. Witherspoon et al. revisit the famous 1925 Scopes trial in Dayton, Tennessee, and visit Plateau and Valley and Ridge outcrops that support scientific principles included in the Next Generation Science Standards, which are based on the *Framework for K–12 Science Education* developed by the National Research Council.

Chapters 2 (Barineau et al.) and 5 (Gallen and Wegmann) explore two different aspects of the Blue Ridge province. Barineau et al. suggest an Ordovician back-arc basin origin for the Wedowee-Emuckfaw-Dahlonga basin, which filled with lower Paleozoic sediments, metamorphosed by several subsequent orogenies in the southernmost Appalachians in Alabama. Gallen and Wegmann present research into Cenozoic rejuvenation of Appalachian topography in the Cullasaja River basin, North Carolina.

I thank the authors and trip leaders for their work in generating exceptional opportunities to explore the geology of this area before and after the meeting in Chattanooga. Thanks are also due to my co-chairs, Michael Gibson and Chuck Trupe, for their advice and guidance. External reviewers have also contributed greatly to the high quality of these field guides, and their work is much appreciated. The meetings and publications staffs at the Geological Society of America are owed many thanks for their superb guidance and support to the editor and the authors throughout the process.

Ann E. Holmes
30 December 2014