



Roadside Geology of Louisiana, D. Spearing, 2007, Mountain Press Publishing Company, Missoula, Montana, USA, 225 p., softcover, USD 20.00, ISBN 0-87842-530-3

I first picked up a copy of the *Roadside Geology of Louisiana* at a conference in 1995 while pursuing my Bachelors degree in geology at the University of New Orleans. Considering every class field trip required a significant drive to get out of the state, typically to Arkansas or Mississippi, I was intrigued. Opening the book, I was faced with 200 blank pages. At last, I learned all I needed to know about the geology of Louisiana. Clearly, this was a prepublication display of the book but, nevertheless this became a running joke for the next few years.

Of course, there is plenty of geological interest to Louisiana as long as you are interested in more than Precambrian, Paleozoic, and Mesozoic rocks. As Spearing states early in the book, Louisiana is tied with Florida as the geologically youngest state in the United States. Because of this, Louisiana is a fantastic example of the modern as the key to the past. The processes observed today are responsible for most of the geology of the entire state, making Louisiana an ideal laboratory for any geologist interested in fluvial or coastal processes.

The geologic overview is the highlight of the book, presenting the history of the Gulf Coast region from the breakup of Pangea to the recent. The discussion follows the deposition of sediment into the developing Gulf of Mexico from the Cretaceous to the Pleistocene, fully illustrated with excellent geologic maps and cross sections of the state. There are excellent descriptions of the Luann salt and the salt domes that define much of the subsurface structure of the state. The economic importance of these geologic features is also revealed with maps showing both the occurrence of the salt domes and the state's numerous oil and gas fields, salt mines, and quarries. The history and development of the oil and gas industry receives a good overview, including a discussion on how petroleum and natural gas actually form—an important detail to communicate to the public. Environmental concerns, such as wetland loss, are also covered and discussed in terms of natural versus human causes.

Of course, no book on Louisiana would be complete without a mention of the Mississippi River and its delta. The history of both of these features is described in a detailed but approachable style. There is a basic description of fluvial processes for the average reader including the formation of meanders, oxbow lakes, and natural levees. Spearing then describes the growth of the Mississippi River from its origin 200 myr ago to the present. Details on human alteration of the river are saved for the road log. Spearing covers the Mississippi delta in a similar style, first covering delta basics for the uninitiated and then reviewing the history of delta movement over the last

7500 years. While there are some inconsistencies between the text and figures, most likely because the figures are from papers published between 1965 and 1985, these sections are accurate and easy to follow.

In the road log the state is divided into five sections: Southeast, East, Southwest, Central, and North. The author progresses from the coast inland, going from the geologically youngest part of the state, characterized by barrier islands, chenier plains, bayous, and marshes, to the geologically oldest part of the state. This part is dominated by broad floodplains, oxbow lakes, undeniable rocks, and Driskall Mountain, which tower above the rest of the state at an elevation of 535 feet.

The routes combine interstates and state highways but also include suggestions for back roads to explore. A significant problem with most major roads in southern Louisiana is that they cross over marshes or progress through heavily vegetated areas. This is obviously not ideal for those interested in seeing geology from their car window. The majority of the road log for the Southeast and Southwest sections, therefore, deals with modern landscape features, changes in barrier islands and the Mississippi delta over the last 400 years, as well as geologic structures and economic development related to salt domes. Particularly interesting is a cross-section diagram of New Orleans showing what is considered bedrock by engineers in that city, unconsolidated sandstone and Pleistocene claystone. The rest of Louisiana, however, does include a decent amount of outcrop, although as Spearing admits, one should not expect much from the roadcuts. Fortunately, the author provides directions to active and inactive quarries that provide access to excellent exposures of Louisiana bedrock, including Cretaceous limestone pushed to the surface by salt domes in the North section of the state.

One aspect of the second edition that I found disappointing was the discussion of the effects of the 2005 hurricanes Katrina and Rita. The author devotes only two pages to these devastating storms at the end of the book. While there is some mention in the text and a few photographs in the road logs that cross some of the coastal highways, there is not as much as one would expect in this new edition. There is a large body of data in the literature as well as satellite images, maps, and photographs that would have helped to illustrate the impact that these storms had on the landscape, economy, and people of Louisiana.

There were a few minor problems that will likely only stand out to geologists. First, the author presents an outdated geologic time scale and repeatedly refers to events that occurred

in the Tertiary. Given that a revised geologic timescale was published by the International Commission on Stratigraphy in 2004, I would expect this figure and the terminology to be up to date. Second, a consistent problem with the Roadside Geology series is the absence of figure references in the text. This can be particularly frustrating when the text covers a region or subject that is illustrated in a figure several pages away from where it was described. Finally, there were some minor technical problems in the text; the author never capitalized formation when mentioning a proper formation by name, and he often referred to rock units as sand, silt, or clay rather than sandstone, siltstone, and claystone. Again, these are minor points.

Overall, I enjoyed the Roadside Geology of Louisiana, and I would highly recommend it to any geologist planning a trip to the Gulf Coast. For those working in universities and colleges in or near Louisiana it would make an excellent starting point in developing weekend field trips for sedimentology, geomorphology, or petroleum geology courses.

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