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# THE LEWIS AND CLARK BICENTENNIAL

By Ed Murphy

One afternoon in the fall of 1998, John Hoganson suggested we become involved with the upcoming Lewis and Clark Bicentennial by writing a book on the geologic observations made by the Corps of Discovery while it was in North Dakota. I was receptive to the idea because I have had a lifelong interest in Lewis and Clark, having grown up reading books on the expedition that my father brought home from the Bismarck Public Library. Like untold numbers of Americans, my interest had been rekindled in 1996 with the release of Stephen Ambrose's excellent book, *Undaunted Courage*. That interest was further heightened while listening to Ken Burns, Dayton Duncan, Stephen Ambrose, and Gerard Baker discuss the expedition during the premier of the Lewis and Clark documentary at the Belle Mehus Auditorium in Bismarck on October 20, 1997. However, even with that level of interest, I was hesitant about taking on such a commitment given the number of projects we were both already involved with. After some discussion, we decided to proceed with the book because of its potential to bring tourists to North Dakota or, more likely, entice tourists already here to spend an extra day following along the Lewis and Clark Trail.

As often happens when you are already over-committed, John and I had no sooner agreed to the Lewis and Clark Trail project than an opportunity arose for us to write two chapters for a book on the Hell Creek Formation (dinosaur fossil-bearing rocks) in south-central and southwestern North Dakota. The Hell Creek book was well received when it was published in 2002 and has already attracted scientists to North Dakota. Working on the Hell Creek book was a wonderful opportunity, but that project delayed work on the Lewis and Clark book for at least two years.

Our experience is unlike most authors in that finding a publisher was relatively easy. John and I had already completed most of the fieldwork for a Mountain Press Publishing Company book on North Dakota in their *Roadside Geology* series. Mountain Press was receptive to the idea of a book about the geologic observations made by the Lewis and Clark Expedition in North Dakota, and requested a detailed outline and one completed chapter. Upon reviewing the outline and editing the chapter, they agreed to publish the book as long as we could deliver it in 2003.

We were finally able to begin work on the Lewis and Clark book in the summer of 2001. John and I had spent portions of the last 24 years working on various segments of the Missouri River Valley and this knowledge saved us a considerable amount of time when it came to doing research for the book. Still, we traveled both sides of the Missouri River (by land and in the air) during the summer and fall of

2001 to locate and photograph important geologic and geographical features described in journals by members of the Corps of Discovery.

Luckily for us, Martin Plamondon II of Seattle, Washington had just completed a 30-year endeavor to reconstruct William Clark's maps of the Missouri and other rivers that the expedition traveled. Grant funds were obtained from the National Park Service and State Historical Society of North Dakota to purchase the rights to use Martin's maps from Washington State University Press and other printing costs. As a result, the position and character of the Missouri River in North Dakota during the fall of 1804 and the spring of 1805, as well as the locations of the Lewis and Clark campsites, are as accurately depicted in our book as anyone has done, or likely will ever do. In addition to Martin, working on this book gave us the opportunity to interact with such nationally known scholars as Gary Moulton, W. Ray Wood, and Bob Bergantino and several Lewis and Clark theme artists including Vern Erickson, Gary Miller, Charles Fritz, Andy Knutson, and Michael Haynes.

Our book, *Geology of the Lewis and Clark Trail in North Dakota*, was released in July of 2003 and we celebrated the event with a lecture and a book-signing at the North Dakota Heritage Center. Since then, John and I have given 27 presentations before a total audience of more than 1,400 people. In addition, we have appeared on radio and television and articles on our work have appeared in newspapers across North Dakota as well as in regional and national periodicals. The highlight so far has been the Lewis and Clark Signature event (Circle of Cultures) held in Bismarck from October 22-31, 2004. John and I not only gave four presentations during this event, but also co-led a three day Lewis and Clark Heritage Outbound Fieldtrip with the State Historical Society of North Dakota to the Confluence of the Missouri/Yellowstone rivers in western North Dakota. The weather for two of the three days was less than ideal (rainy), but much better than we had feared for that time of the year. In addition to a couple from England, the fieldtrip participants came from across the U.S. (North Dakota, as well as Wisconsin, Michigan, New Jersey, New York, Illinois, Wisconsin, Oregon, Kentucky, and Washington).

Along with the book, we created a poster and accompanying rock samples that have been displayed at the Bismarck Public Library, Knife River Indian Village National Historic Site, and will soon be displayed at the University of North Dakota, North Dakota State University, Minot Public Library, Williston Public Library, and the Long X Visitor Center in Watford City.



John Hoganson (right) and I presented a Lewis and Clark lecture at the University of North Dakota in honor of Gerald H. Groenewold (center) receiving the A.G. Leonard Award from the Department of Geology and Geological Engineering. Gerry, a geologist with the North Dakota Geological Survey from 1974 to 1984, is currently the Director of the Energy and Environmental Research Center in Grand Forks. *Photograph courtesy of Joseph H. Hartman, Dept. of Geology and Geological Eng., UND, October 15, 2004.*



John Hoganson giving the first part of a PowerPoint presentation on the *Scientific Observations of the Lewis and Clark Expedition in North Dakota* at the Circle of Cultures event. Typically, we arrange the presentation so that John discusses the historical events which created the expedition and takes the explorers up river to Fort Mandan. My portion of the presentation is from Fort Mandan to the Montana line and the return trip through North Dakota.



In shirt sleeves at the Missouri/Yellowstone Confluence (in background) late in the afternoon of October 25, 2004. The group participated in the Lewis and Clark Heritage Outbound Fieldtrip co-sponsored by the State Historical Society of North Dakota and the North Dakota Geological Survey. The fieldtrip was offered through Satrom Travel. *Photograph taken by Genia Hesser, State Historical Society of North Dakota.*

We are frequently asked how long it took us to write the book. Approximately 15% of our office time was spent working on the book in 2001 and 2002. In addition, we logged approximately 600 hours over that same period working on the book at night and on weekends. Another often-asked question is if we receive royalties from our book sales. As state employees, we cannot accept royalties. We also received drafting, GIS, and secretarial support through the Geological Survey. Royalties would have been paid directly to the State, but were negotiated back to Mountain Press Publishing to offset the additional costs of printing the book in color. Such a heavily illustrated book (150 photographs, maps, and illustrations) would likely be more attractive in color and, therefore, more likely to result in increased book sales and additional travel along the Lewis and Clark Trail in North Dakota. The North Dakota Tourism Division has estimated that, on average, a tourist in North Dakota spends \$165 per day. The Heritage Outbound Fieldtrip alone has accounted for sufficient tourist days to offset the royalties lost to the state to print the book in color.

Our book has received a number of positive book reviews in newspapers, the internet, as well as scientific journals. We had hoped the book would be used in classrooms in North Dakota. Therefore, we were very pleased when the National Science Teachers Association endorsed it for use in high school and college Earth Science classes.

John and I have been asked many times what we feel was the most interesting aspect of our study of the Lewis and Clark Expedition. We were surprised and impressed by the observational skills of both Meriwether Lewis and William Clark. Although the science of geology was in its infancy, Lewis and Clark made a number of very important geological observations in their journals; from theorizing on the processes that created fossil wood and clinker to why rounded gravels were present on a ridge 200 feet above the Missouri River. Our most enjoyable moments while working on the book came while literally walking in the footsteps of these explorers along the Missouri River Valley or, as in the case of a ridge southwest of New Town and a bluff south of Williston, standing exactly where they stood 200 years ago. It makes us appreciative and grateful that from these, and other vantage points, the countryside is little changed and it does not require much imagination to picture it as Lewis and Clark did 200 years ago.



William Clark stood on this ridge southwest of New Town on April 15, 1805 and wrote in his journal "*the countrey is butifull open fertile plain the dreans take theer rise near the Clifts of the river and run from the river in a N E derection as far as I could See.*"

As the present condition of nations is the result of many antecedent changes, some extremely remote and others recent, some gradual, others sudden and violent, so the state of the natural world is the result of a long succession of events, and if we would enlarge our experience of the present economy of nature, we must investigate the effects of her operations in former epochs.

Charles Lyell, British Geologist 1797 - 1875

*Principles of Geology*