

## **Artists' Depictions of Catsteps in the Loess Hills of Iowa: Evidence for Mid-Nineteenth Century Climate Change**

Kimberly R. Dillon, Steven H. Emerman, and Pamela K. Wilcox  
Department of Biology and Environmental Science  
Simpson College, Indianola, Iowa 50125

**Abstract.** Catsteps (also known as terracettes) are the staircase-like features common on hillslopes of the Loess Hills of western Iowa. The record of artistic depictions of the Loess Hills was examined to determine when catsteps appeared. Landscape artists George Catlin and Karl Bodmer traveled up the Missouri River in 1832 and 1833, respectively, and between them, produced 30 works of art depicting either the Loess Hills or the loess bluffs on the Nebraska side of the river. Only one painting by Bodmer of Blackbird Hill on the Nebraska side possibly shows catsteps. Moreover, an engraving based on the painting and another painting of the same site by Bodmer do not show catsteps. The Assistant State Geologist, Orestes St. John, produced five sketches of the Loess Hills in 1868, three of which show well-defined catsteps. The appearance of catsteps during the period 1833-1868 may be related to the appearance of gullies during the period 1860-1900. An examination of census data shows that intensive grazing of the Loess Hills did not begin until about 1900 so that climate change is a more likely explanation for the appearance of both catsteps and gullies. Since catsteps are more common on the south- and west-facing slopes, which will dry most quickly, the most probable climate change is a decrease in the periodicity of precipitation cycles. Such a climate change is consistent with tree ring data from eastern South Dakota and eastern Montana, but not central and eastern Iowa.