A STUDY OF FOSSIL AND MODERN MEMBERS OF THE PANICEAE (POACEAE) FROM NORTH AND SOUTH AMERICA

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ABSTRACT

While fossil grasses have been reported numerous times from Miocene strata in North America, this is the first report of three dimensional opalized grass fossils from South America. Fossil members of the genus *Setaria* (Poaceae) have been reported only one time prior to this study, from the Miocene Ash Hollow Formation of Lincoln County, Nebraska. We are reporting the second collection of fossil *Setaria* from the province of Catamarca, Argentina. The Miocene Andalhuala Formation of Catamarca is composed of high percentages of sand and ash, similar in nature to the Ash Hollow Formation in North America. A comparison was made between the fossils from North America and South America, as well as to modern specimens of the South American Paniceae. Preservation of fossils from both North America and South America are exquisite, with epidermal cells intact. Cuticle was removed in both fossil and modern specimens prior to analyses. Characteristics of the paleas and lemmas including epidermal cell dimensions, shapes, and ornamentation were used for detailed analyses. Results from cluster analyses and principal component analyses indicate that the fossils from South America are most similar to *S. tenassissima* and *S. scandens*. Fossils from North America were most similar to *S. sulcata*.