Stratigraphic Sedimentary Characteristics of Danxia Formation and the Origin of Danxia Small-cave Landscape in Mt. Danxia, Guangdong Province

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Absrtact: Global warming is a significant climate change that human beings are experiencing in the last hundred years, under the pressure of Greenhouse effect. The “deep time” research program, which focuses on the evolution of the Earth's climate system and the major geological time during the geological history period before the Quaternary, has become the frontier of geoscience research. Based on the study on the lithology and sedimentary stratigraphy of red beds in the Cretaceous in the Danxiashan basin, Guangdong Province, it is found that there are alluvial fans, paleo-desert and salt lake sediments in a wide range of arid environments in the late Cretaceous in the Daxianshan basin. It has always been considered that alluvial fan and braided river facies conglomerates are the main material foundation to control the Danxia landform, but the main site in the study area is the paleo-desert and salt lake sediments of the Jinshiyan monastery of the Danxia formation. The wedge-shaped staggered bedding sandstone is developed with thin layer mudstone, silty mudstone, wave-forming wave-mark and insect hole vestiges in mudstone, and gypsum crystals, which constitute the “steep body” of Danxia landscape. The development of Danxia small caves landscape in this section is controlled by a variety of dynamic mechanisms and is the result of the combined action of stratigraphic sedimentary facies, rock composition, atmospheric precipitation, wind swirl, microclimate and so on.

Key words: Ancient desert, salt lake, small caves

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