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# The geological heritage in Tianzhushan Global Geopark, Anhui, China

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Tianzhushan Geopark is situated in Anqing City, Anhui Province, P.R. China. Its geographic coordinates are 30°35'17"-30°48'41"N and 116°16'04"- 116°33'41"E, with a total area of 413.14 km$^2$. Tianzhushan Geopark is located in the east part of Dabieshan Orogenic Belt between North China and Yangtze Paleo-Plates and the southern part of Tancheng-Lujiang Fault Zone. Dabieshan orogenic belt constitutes a geological line separating north and south China, and also a watershed for modern natural ecological landscapes.

Tianzhushan includes almost all the main features of scenic granite landscapes. The spectacular scenery, including features such as strangely shaped peaks, grotesque rocks, caves and canyons is mainly found in areas such as main peaks, Mazu Nunnery and Tigerhead Cliff in the Tianzhushan Scenic Area. In particular, the landscape of the Mysterious Valley, formed by landslides and collapsed towers of granite, is typical to the geopark but also unique, and can be called a great wonder of the world.

Classic outcrops of the Dabieshan UHP metamorphic belt are distributed in the southern areas of the Tianzhushan Geopark, such as in the Bixiling–Xindian–Pailou region, exposing a large number of UHP eclogites, garnet peridotites, jadeite quartzites, marbles, gneisses, calcium silicate rocks, garnet phengite quartz schists, etc. Of all the above-mentioned rocks, eclogite containing microdiamond inclusions (Xindian, Qianshan), and eclogite containing inclusions of coesite (or its pesudomorphs), are world famous representatives of this geological feature. Because they have recorded collision, subduction and returning of the continental plates, research on the Dabieshan UHP metamorphic belt has come to the forefront of research into international continental dynamics.

Paleontological fossils are mainly found in the Paleocene Wanghudun Formation and Doumu Formation, and are characterized by rich mammal fossils. More than 50 species of vertebrate fossils have been discovered at over 20 localities in Tianzhushan Geopark, including 11 species of reptiles, one species of bird, and 42 species of mammals. Of the mammalian fossils discovered in the Tianzhushan Geopark, several are unique species in Asia, such as Mesonychidae, Pseudictopidae, Eurymylidae and

*Mimotona wana*. In addition, there are some species related to the origin of ancient taxa that have become extinct, such as *Benaius qianshuiensis* (see Wang and Jin, 2004). There used to be ancient ungulates represented by *Altilambda* and *Archaeolambda tabiensis* (see Huang, 1977). In addition to mammals, *Eoalligator huiningensis* (see Young, 1983), which is considered to have a closer relationship with current alligators, may represent one of the alligators‘ ancestors. *Wanshuina lii* (Hou, 1994) is one of the very few Paleocene avian species in the world. It is one of the first representatives of the known corncrake suborder Gruiformes, as well as the only representative of the Paleocene Gruiformes.