

## Geology to understand the megalithic religion in the Shimane Peninsula: A case program of the Kunibiki Geopark Project, Shimane University

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In recent years, it becomes popular to visit a megalith in the Izumo Province. Over 30 people participated in the short tour organized by the Kunibiki Project, Shimane University, to go on an excursion to Tateiwa Shrine, Izumo in October, 2015. There were no more shrine building, but the megalith over 12 meters high existed in the shrine area. People believe the dwelling stone of god for the megalith, which is called Ishigami or Iwakura in the Japanese culture. The stone is no more stone itself, but the symbol of animism. We will introduce herein why such large monument stones were distributed in the Shimane Peninsula.

The Shimane Peninsula is characterized by four major landmasses that display eastward *en echelon* arrangement from the topographical point of view. Such a feature of the Shimane Peninsula is originally related to the early to middle Miocene tectonic event, the opening of the Japan Sea and clock-wise rotation of West Honshu Island that occurred in 20-15 Ma. The geology of the Shimane peninsula is characterized in having severe deformation of sedimentary and volcanoclastic rocks, and thus it has been called as "Shinji Folded Zone" (Otuka, 1939). The tectonic termination with a north-south stress is about 11 Ma. Tectonic duration of the Shinji Folded Zone would be over 4-6 million years, if we regard the opening event of the Japan Sea was stopped at 17 Ma or 15 Ma. We are able to find several large faults such as the Shinji and Taisha Folds that joined in this early to middle Miocene tectonic movement. Therefore, it is clear that the large stone monuments, mostly consisting of rhyolite, are closely related to the formation of the Shimane Peninsula. Shearing in the adjacent rocks and slickenside on the stone surface indicate clear evidence to explain the fault-related block of the stone.

Setting aside the question whether ancient Izumo people, ~1300 years ago, knew the geology or not, they fully understood the topography of the Shimane Peninsula and its neighbors. Moreover they created the "Kunibiki-Shinwa", the story of land-pulling (Izumonokuni-Fudoki; 733). It is surprisingly enough that the story was appeared over 1000 years before the Wegener's Continental Drift Theory (1912).

Keywords: Shimane Peninsula, Kunibiki myths, megalithic religion, Continental Drift theory