

Paper Number: 779

Late Mesozoic Intracontinental orogeny of the Qinling orogen, central China and its implication

Zhang, G.W., Guo, A.L., Cheng, S.Y. and Yao, A.P.

State Key Laboratory of Continental Dynamics/Department of Geology, Northwest University, Xian, China, 710069,
Email: gwzhang@nwu.edu.cn

From long-term study on continental geology, we have realized that the theory of plate tectonics is the main guiding principle but has its limitation in recognition and interpretation of continental tectonics. Providing mainly with the Middle-Late Mesozoic intracontinental orogeny in the Qinling orogen [1], central China and other examples of continental tectonics typified by orogens, this study attempts to demonstrate that a continent actually is a tectonic collage of the components formed by plate tectonics (including the far field effect from plate active boundaries) and intracontinental mechanisms, respectively. And the orogeny occurring in an intracontinental setting could be initiated by continent itself and more likely by the interaction of different blocks along old sutures of plates within a continent when there was neither involvement of plate tectonics nor the distant effect derived from plate tectonics [2]. Furthermore, the authors raise a number of questions concerning the fundamental continental issues such as the origin of early continents, the mechanism of continental evolution in the form of supercontinent and the essential differences of oceanic and continental lithospheres and their tectonic cycles. These issues are not related to plate tectonics or cannot be solved by the theory of plate tectonics. In a word, besides plate tectonics works on continents, continents have own law governing their origin, preservation and evolution. Therefore, it is suggested to further develop the continental study while deepening the theory of plate tectonics.

References:

- [1] Zhang GW (2001), Qinling Orogenic Belt And Continental Dynamics: Beijing, Science Press, 855
- [2] Zhang GW (2013) Science China(Earth Sciences) 56: 1804-1828

