

QINLING OROGENIC BELT? ITS EVOLUTION IN PALAEOZOIC—MESOZOIC AND METALLOGENESIS

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The formation, development and evolution of Qinling orogenic belt can be divided into three stages: (1) formation and development of Precambrian basement in late Archaean—Palaeoproterozoic (3.0?1.6Ga), (2) plate tectonic evolution featuring modern plate tectonic mechanism (0.8--0.2Ga), (3) intracontinental orogeny and tectonic evolution in Mesozoic. Devonian (D) and Triassic (T) represent the key transition period of tectonic evolution of Qinling orogenic belt. That is to say, in Devonian, Qinling micro-plate was separated from northern margin of Yangtze plate (passive continental margin). It witnessed transition of the microplate from compression to extension, and consequently three types of sedimentary basins were formed, namely, rifted hydrothermal basin in the micro-plate, finite oceanic basin in the south, and residual sea basin resulting from collision on the northern margin. In Triassic the Qinling area turned into the intracontinental orogeny. Devonian and Triassic represent the leading periods of enrichment of vast metals. In Devonian time lots of Sedex-type massive Pb-Zn- (Cu)-Ag deposits were formed in the hydrothermal basins, and in Triassic (Indosinian-Yanshanian Movements), many sedimentary rock-hosted disseminated gold deposits and sedimentary-reformation type Pb-Zn-Hg-Sb (Au) deposits were formed in the rifted hydrothermal basins, and many ductile shear zone-related gold deposits were formed in the finite oceanic basins and residual sea basins on the two sides of Qinling micro-plate. The above-mentioned discussion indicates that the metallogenesis is not only consistent with geological events, but also controlled by them.