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## Paleozoic Tectonic Environment in Southern Qinling: Geological and Geochemical Evidences from the Devonian Cherts

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A lot of Paleozoic cherts outcrops, which were formed in various tectonic settings, are recognized in southern Qinling. Devonian cherts from the Mian-Lue suture belt have a relative high  $\text{Al}_2\text{O}_3$  concentration but low  $\text{Fe}_2\text{O}_3$  and MnO concentrations, which suggest that they have a close relationship with the continental crust. Moreover, the chondrite-normalized REE patterns show typical continental margin settings with LREE enrichment,  $\text{Ce}_{\text{anom}}$  (0.95-1.11) and a negative  $\text{Eu}_{\text{anom}}$  (0.44-0.58), and shale- and chondrite-normalized La/Yb values of 0.95-2.46 and 7.21-18.72, respectively. However, Devonian cherts from the Shang-Dan suture belt reveal different features. Combined with the studies of major elements, trace elements and rare earth element by previous research, the cherts mainly formed in the deep or half-deep sea environment, and near the mid oceanic ridge environment.

Detailed studies on the different features of cherts in Devonian indicated that there are two different tectonic environments for the south and the north area in southern Qinling. The Shang-Dan ocean formed in the Early Paleozoic, and it has developed a mature oceanic basin and deposited a series of deep or half-deep sea sediments near the mid oceanic ridge in Devonian; While the Mian-Lue ocean developed at the later period of Early Paleozoic, and some intra-continental rift basins were developed in Devonian, and the hot water sediments are in close relationship with the continental material.

**Key words:** chert, geology and geochemistry, tectonic setting, southern Qinling

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