

## 西秦岭地区生物礁与铅锌矿关系的再认识

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中文摘要:本文以前人对西秦岭地区地层、岩相及有机地球化学研究成果为基础,结合补充的实际资料,论述了生物礁与西秦岭铅锌矿的伴生关系及其成因联系.地质建造上,规模矿床层层的共同特点是相对发育灰岩及生物灰岩;空间上,生物礁为沉积成矿洼地的障壁;层序上,沉积型铅锌矿和改造型铅锌矿与生物礁的伴生关系有所不同,前者一般赋存于生物灰岩或砂中,后者的矿体常赋存在生物灰岩与泥质岩的过渡部位,表现为礁硅岩套.与造礁生物有关的有机质可能在沉积成矿或改造成矿作用发生前的成岩过程中,参与了硫酸盐的热化学还原及锌等多金属元素的萃取、运聚过程.板内伸展阶段的深源流体、陆内俯冲阶段的深源或岩浆热液注入先存的中低温富有机质卤水,分别导致了沉积和改造成矿作用发生.沿生长断裂带,热水沉积成矿作用促进了处于低纬度地区的生物礁生长,并形成成矿洼地的障壁.生物礁在改造成矿过程中的作用主要在于形成利于改造成矿作用发生的成矿构造.

中文关键词:生物礁 铅锌矿 伴生关系 成矿机制 西秦岭

## Reconsideration of the Relationship between Organic Reef and Lead-Zinc Deposits in West Qinling

**Abstract:**Based on previous studies of stratigraphy, lithofaces and organic geochemistry in combination with data obtained by the authors, this paper deals with the association relationship and genetic connection of organic reef with lead-zinc deposits in West Qinling region. In geological formation, the lead-zinc ore-bearing strata are characterized by well-developed limestone and biogenic limestone; in space, the organic reef generally acted as the baffle of the ore-forming depression; in sequences, the association relationship between organic reef and sedimentary lead-zinc deposits is different from that between organic reef and reformation deposits, i.e., the former occur in limestone clastic rocks, whereas the latter often occur in the transitional position between limestone and argillite. The organic matter related to hermatypic organism was likely to participate in such processes as thermal sulfate reduction, extraction of lead-zinc from rocks, transportation and accumulation before sedimentary mineralization or reformation mineralization. The injection of fluids from the depth during the intraplate stretching and that from the depth or magma during intracontinental subduction into epithermal to mesothermal organism-rich brine led to sedimentary mineralization and reformation mineralization respectively. The hydrothermal sedimentation and mineralization along the growing faults facilitated the formation of organic reef or baffle of depressions in the low latitude area. The role of organic reef in reformation mineralization lies primarily in the formation of metallogenic structures favorable for reformation mineralization.