

## **Metallogeny of the Xing–Mong Orogenic Belt**

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Located in the eastern part of the Central Asian Orogen, the Xing-Meng orogenic belt formed during the Paleozoic, and was strongly modified by the Mongol-Okhotsk Ocean closure to the northwest and the Paleo-Pacific tectonic events to the east in the Mesozoic. Based on the available geochronology, most of the mineral deposits in the region formed during the Jurassic and Cretaceous and are associated with the tectonic evolution of the Mongol-Okhotsk and Paleo-Pacific Oceans. On the basis of the relationship between the mineralization and various tectonic events in the belt, the deposits in the region are divided into the following types: (1) deposits related to the evolution of the Paleo-Asian Ocean from ca. 500 to 210 Ma, and including porphyry Cu-Mo, Mo, and Au, epithermal Au, and skarn-type Pb-Zn deposits associated with island-arc and collisional and extensional events following the closure of the ocean; (2) deposits related to tectonic events associated with the evolution of the Mongol-Okhotsk Ocean from ca. 240 to 110 Ma, which include porphyry Cu-Mo and Mo-polymetallic, epithermal Au, meso-epithermal vein-type Pb-Zn-Ag, and hydrothermal vein-type Ag-polymetallic deposits. The tectonic events are related to a continental margin arc setting, collision and post-collision events following the closure of the Mongol-Okhotsk Ocean, and extensional collapse; (3) deposits related to tectonic events affecting the Paleo-Pacific Ocean from ca. 210 to 100 Ma, including porphyry Mo (W, Cu), polymetallic skarn, and epithermal Au deposits. The mineralization formed in an active continental margin related to the subduction of the Paleo-Pacific plate; and (4) deposits related to the superimposition of the Mongol-Okhotsk and Paleo-Pacific Oceans from 150 to 120 Ma. The deposits formed in this tectonic setting include porphyry Mo (Cu, W), hydrothermal vein-type Pb-Zn-Ag, Cu-polymetallic, hypothermal-type REE, W (Sn), Sn, and skarn Fe-polymetallic deposits. The mineralization took place in an extensional setting in the region where the Mongol-Okhotsk and Paleo-Pacific Oceans merged. As can be seen, the metallogenesis of the various tectonic regions are varied in type and commodities. Copper ore is predominantly present in the Paleo-Asian and Mongol-Okhotsk Oceans, Mo is enriched in the Paleo-Pacific and Mongol-Okhotsk Oceans, Pb-Zn, Ag, Sn, and W is enriched in the area where the Paleo-Pacific and Mongol-Okhotsk Oceans merged, and Au is enriched in the Paleo-Pacific Ocean.