Magmatism and mineralization in Khentei zone, central Mongolia.

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Khentei zone is a western part of a large structure stretches from central Mongolia over 3000 km to northeast, to the Pacific Ocean. The Khentei zone consists of Riphean-early Cambrian cherts, volcanics and schists, lower Paleozoic-Carboniferous turbidites,intruded by lower Paleozoic granites, late Paleozoic turbidites intruded by late Paleozoic and early Mesozoic granites. Overlapped Mesozoic complexes form troughs filled by molasse and bimodal volcanics.

Granite magmatism of Triassic- Jurassic age of calc-alkaline and subalkaline series varies from intermediate to high evolved felsic rocks with Li-F granites formed in compressional tectonics in late Paleozoic-early Mesozoic. LILE and F enrich the latest felsic granites. Volcanics of basalt-trachyandesite-trachybasalt association is formed in extentional tectonics within the surrounding the Khentei zone troughs.

Mineralization shows a strong magamtic control and includes porphyry Cu-Mo, mesothermal and epithermal gold, Sn-Pb-Zn skarn, W-Sn,Ta, Nb, Be and Au and Sn placer. Gold mineralization mainly of low-sulfide Au-quartz veins and veinlets type is controlled by northeast trending faults and developed in different environment: sediments, granites and volcanic rocks. Porphyry Cu-Mo mineralization and epithermal gold mineralization occurs in surrounding depressions filled by volcanic rocks. Cu-Mo deposits are associated with small stocks of granodiorite porphyry. Rare metal mineralization of hydrothermal veins or stockworks is associated with felsic Mesozoic granite plutons and concentrated in apical part or within host rocks.