MINERALIZATION AND MINING AT SOUTHEAST TEKKA, PERAK, AND ASSOCIATED GRANITOIDS

G.H. TEH & ISMAIL MOKHTAR
Department of Geology, University of Malaya, 59100 Kuala Lumpur

The Tekka area is located about 23 km south of Ipoh town and is essentially made up of the Main Range granitoid to the east, the Kinta Limestone and schist in the middle and the Kampar River drained alluvial plain to the west.

The metasedimentary rocks formed as a result of low grade regional metamorphism and further recrystallized as a result of contact metamorphism during the granitoid intrusion resulting in north to northwest striking bedding-parallel schistosity. The Kinta Limestone has been altered to marble and

display karst topography resulting from intense chemical weathering and erosion. The granitoids between Tekka and Sg. Siput (south) have been dated as late Triassic by Bignell and Snelling (1977) and can be divided into 3 different units based on texture and mineralogy, namely the coarse porphyritic biotite adamellite (Unit 1), less porphyritic biotite-muscovite adamellite (Unit 2) and fine-grained non-porphyritic granite (Unit 3). Petrological and geochemical studies suggest that these granite units were differentiated from the same parental magma, with a narrow increase in the degree of differentiation from Unit 1 to 3.

The mesozonal granitoids show the familiar modifications such as microgranites, aplites and pegmatites as well as the effects of pneumatolytic processes like silicification, tourmalinization and greisenization. The infilling of joints, faults and shear zones by late-phase hydrothermal solutions have generated abundant quartz and tourmaline veins.

All the 3 granitoid units show peraluminous characteristics (with the presence of minerals like biotite, primary muscovite, tourmaline and topaz) and invariably can be classified as S-type granitoids, suggesting that magma generation was due to the melting of a sialic crust. Xenoliths present are cogeneric.

The tin mineralization at Tekka is the result of hydrothermal fluids infilling the cracks of the granitic cupola giving rise to quartz-tourmaline-cassiterite- wolframite-sulphide veins of preferred orientations and accompanying wallrock alterations. The xenothermal character of the mineralization is characterised by cassiterite, wolframite, arsenopyrite and pyrite in association with stannite, sphalerite, chalcopyrite, galena and stibnite. Generally the mineralized veins strike 290-300° with steep dips to the NE.

A unique feature of the mining operations at SE Tekka now is the dry mining method being carried out on the highly weathered *in-situ* hydrothermally altered granite.