Paper P1

Iron mineralisation, south Gunung Jerai, Kedah, implications of genesis

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The Gunung Jerai area consists a series of sedimentary rocks, which have been metamorphosed by granite intrusion, namely, the Cambrian-aged Jerai formation, with a series of exceedingly hard quartzites and much softer schists, which can be correlated to the Machinchang formation, and the Sungai Petani formation which consists of shales of Lower Silurian age. The granite is believed to underlie the sedimentary rocks throughout the Gunung Jerai area. Besides, there are also wide-spread occurrences of pegmatite intrusions and quartz veins throughout the Gunung Jerai area.

The greatest concentrations of iron ore in the south Gunung Jerai area are to be found in the schists and quartzites of the Jerai formation, as well as in the shales of Sungai Petani formation, together with pegmatite intrusions and quartz veins which cut through them. The chief iron minerals found are magnetite, hematite, and goethite. Magnetite occurs chiefly in the form of cross-cutting veinlets or as sporadic disseminations along the bedding planes of the country rocks. Besides, in a number of localities, magnetite is associated with pegmatite intrusions and/or quartz veins. Hematite on the other hand commonly occurs with the magnetite, as a secondary alteration product of magnetite. Hematite of secondary lateritic or residual origin has also been found, formed by the superficial desilication of ferruginous shale. Goethite is mostly secondary in nature, accumulated in the vicinity of primary magnetite and hematite due to weathering and erosion.

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