

The role of intrusion in the metallurgy of Tin-Tantalum ore deposits of Congolese Kibaran belt, case of Kalehe and masisi territories/DRC

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During the magnetic differentiation and crystallization, volcanic materials reach the surface whereas plutons about the bottom being grained. The felsic/acid intrusions are the most metallogenic of the stanniferous and colombi-tantaliferous occurrences. This mineral association is more concentrated into granites and their related pegmatites. Actually, tin is in high demand due to the increase of technologies. The metallogenic role of intrusions on the establishment of the Nb-Ta deposits in the Kibaran is important to understand in the Kalehe region, Kivu, DRC.

Granites are typically accompanied by pegmatites and all batholiths can be tin bearing or not. In the case of masisi-Kalehe, granites remain underground and the pegmatites are flush on the surface. Today all these pegmatites are linked on two granitic intrusions, Hango and Sula. In the masisi, pegmatites are visible in Mumba and are kaolinized in Rubaya and Lire stanniferous than Niobo-tantaliferous. In addition to this mineral association, while manganese mineralization is present, the occurrence at Bishasha remains uneconomic. The Kalehe tin body is too altered and its petrographic study is difficult due to the neogenic mineralogy, the richness in potassium bearing minerals opposes it high.

The role of intrusions is more pronounced because it remains the only economic stanniferous intrusions in these regions. Placer deposits are rare with only alteration halos overhanging the host body being mineralized. However, the lithomarge shows deeper and no drilling is done to verify the interface. Granite intrusions have played a double role, directly and indirectly impacting the genesis of tin bearing bodies including Sn-Nb-Ta tripods. This mineralization remains disseminated or vein hosted in the surrounding areas forming part of the halos. But in the case of the DRC, there are several models. A drilling campaign for the purpose of scientific knowledge of the parental granites or pegmatites is worthwhile in the regions. Considering the tectonic settings around, this concludes on the source and correlation with visible granites or deduces those sub-outcropping.