

,Micas related to tin mineralisation in Devonian granites, NE Tasmania

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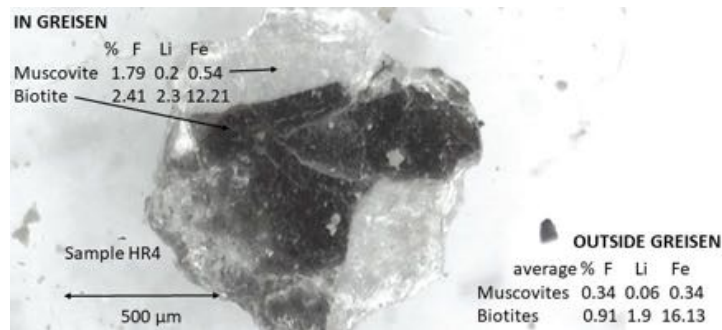
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Muscovite and biotite in the NE Tasmanian peraluminous tin alkali-feldspar granites [2], associated pegmatites and greisens, are rich in Li, F, Rb, Sn, Cs, Nb, Ta and poor in Mg, Ti and Zr compared to those in the more common porphyritic granites in which they occur. The muscovite in these tin granites is Fe-rich, the biotites are Fe *depleted*. We studied some one hundred and twenty mica samples by LA-ICPMS and EPMA.

Incipient greisen alteration of biotite overgrown by muscovite is shown below. The biotite fragment is depleted in Fe compared to the biotite outside the greisen vein. Advanced stages of greisenisation have only shrivelled biotite remnants.



Narrow veins and isolated pockets of early stage greisen formation in adjacent porphyritic granites exclude direct contact with magma. In the top of the alkali-feldspar granites pegmatite pipes and greisen under pegmatite are present. Occurrence of F-rich volatiles is envisaged [1,2].

[2] Johan *et al.* (2012) *Can. Min.* **50**, 1131-1148. [1] van Moort *et al.* (2017) *Aust. Inst. Geoscientists Bull.* **65**, 122-125.