

## **CONTACT METASSOMATISM OF THE RARE-ELEMENT PEGMATITE VEINS IN THE GONÇALO PORTUGAL REGION**

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An area about 100 Km<sup>2</sup> of Central-Eastern Portugal which comprises the Gouveia-Guarda - Belmonte -Sabugal regions has a large field of rare-element aplite-pegmatite veins. They are mainly sub-horizontal veins (sills) of decimeter to meter (generally 3.5 m ) thickness, but sometimes can outcrop more than 1 Km. They intrude mainly syntectonic to late tectonic Hercynian granitic rocks of the central Iberian tableland. The richest aplite-pegmatite veins in Li and other rare elements outcrop in the Seixo Amarelo-Gonçalo region intruding rarely the schist-metagraywack complex, but mainly a porphyritic biotite granite of the intermediate series (Guarda granite). The intrusion of aplite-pegmatite sills produced metasomatism on the Guarda granite responsible for the transformation of biotite into zinnwaldite, recrystallization of tourmaline and enrichment of the granite in L.O.I., MgO, FeO, TiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Li, Rb, Nb, Ta, Sn, Zr, W and its impoverishment in CaO, P<sub>2</sub>O<sub>5</sub>, MnO, K<sub>2</sub>O, SiO<sub>2</sub>, Sr, Ba, Y, etc. The metamorphic and metassomatic effects in schists that are in direct contact with the lithian sills show mainly an average enrichment in K<sub>2</sub>O, SiO<sub>2</sub>, P<sub>2</sub>O<sub>5</sub>, MgO, MnO, FeO, and impoverishment in CaO, Na<sub>2</sub>O, TiO<sub>2</sub> and L.O.I.. However the increases in Li, Rb, Sn, and W and the decreases in Sr and Y are the most significant.