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Viridine, Piemontite and Epidote Group Minerals from Thassos Island, Northern Greece

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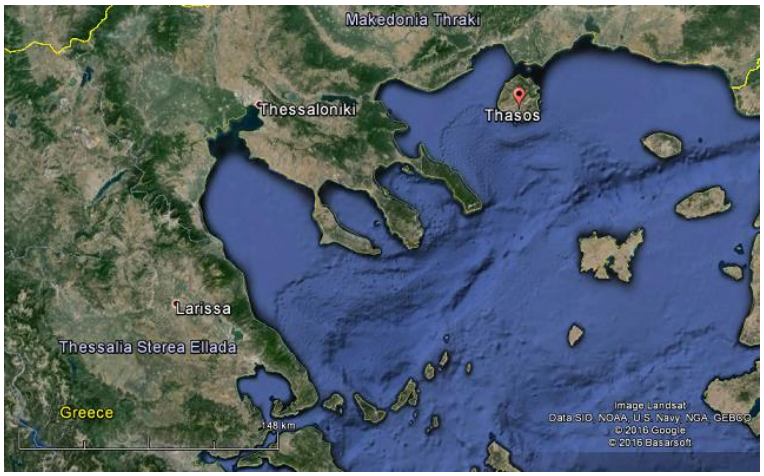

Figure 1: Location of Thassos Island, northern Greece [2].

Viridine (Mn-andalusite) is a rare variety of andalusite whose deep emerald-green colour is attributed to the Jahn-Teller distortion caused by the presence of Mn^{3+} in its structure [1]. Viridine from Thassos Island, northern Greece (Fig. 1), is of particularly high gem-quality and is associated with piemontite and other Mn-bearing silicates of the epidote group. Their conditions of formation and the source of Mn is the primary focus of this study.

The main viridine occurrence is in the Trikorfo area, ~3.2 km E of the nearest township, Theologos. Viridine occurs as large subhedral-euhedral crystals to crystallised masses. Initial studies [3] of the epidote minerals identified dark brick-red piemontite (usually associated with the viridine, Fig. 2) and rose-pink Mn-rich epidote and Mn-bearing zoisite (commonly known as 'thulite').

Kyanite in a range of colours occurs within the actinolite schists [3]. It is also found inter-overgrown with viridine at the main locality, indicating that during formation, an inversion of pressure and temperature conditions may have occurred [4], resulting in metastable coexistence of the two phases [1]. Recently developed pXRD [5] and pXRF techniques will be used to identify mineral assemblages, phase relations and geochemistry, in order to trace the source of Mn during metamorphism.

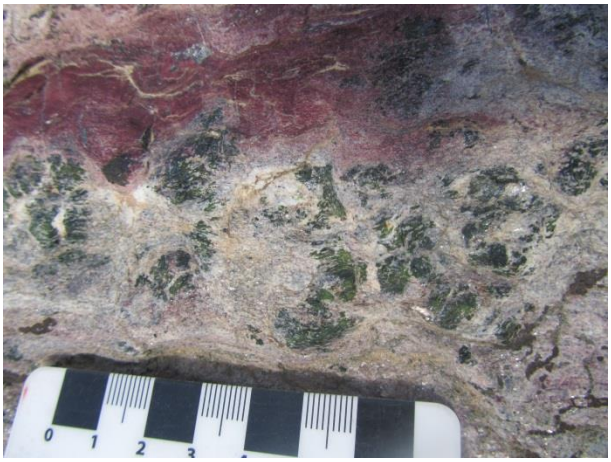

Figure 2: Viridine with piemontite, main locality.

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