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Gem Minerals in Rare Metal Pegmatite from Lucyen Mining Area (North Vietnam)

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LucYen has been known in the world as the mining area of high quality ruby, but in fact there have been found other gem minerals, such as spinel, tourmaline, humite, olivine, quartz, pargasite, lazurite, amazonite etc. . Most of them were found in placer deposits while the primary deposits are metamorphic. Nevertheless, in recent years, some gemstone bearing pegmatite bodies have been discovered in this area. Big size and different coloured tourmaline, quartz, green coloured amazonite have come from this pegmatites. Different analytical methods: X-ray powder diffraction, electron probe microanalysis, atomic absorption spectrometry(AAS) and common mineralogical, gemmological methods were used for determining chemical composition, feature of structure, optical, physical properties and other characteristics of these gem minerals. The result show that tourmaline belongs to elbaite- schorl series. Tourmaline, quartz, amazonite have gem quality, appropriate for making jewellery, carved and ornamental objects. Associated minerals with the gemstones are cleavelandite(albite), lepidolite. The analyses by the AAS method show that tourmaline, microcline, albite and lepidolite are rich in alkali metals, especially, the content of Li in tourmaline, Rb in amazonite, Li, Rb, Cs in lepidolite very high. The mineral assemblages and their chemical compositions are characterized as to be of the rare alkali metal pegmatite type. The discovery of this primary gemstone deposit show that Luc Yen area has a significant potential as a gemstone area in South East Asia .