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MINERALIZATION OF HIGHLAND ROCKS IN THE KANDY - MATALE AREA

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High grade metamorphic rocks ranging from mupper amphibolite facies to granulite facies covers more than 90% of the island of Sri Lanka. The rest is mainly sedimentary but underlain by valuable mineral resources such as Miocene limestone. Primary mineral deposits are confined mainly to the Highland Complex and the Southern part of the Wannu Complex which show mainly granulite condition of metamorphism.

These primary mineralization are mainly fracture controlled vein type mineralization or mineralized shear zones. Graphite is the major economic mineral that occurs in large quantities in a fracture controlled vein system in Sri Lanka. However, many other fractures and shears in the Highland rocks are occupied by other types of mineralization. The mineralization in the Kandy-Matale area include intrusive rocks such as quartz veins with high purity SiO_2 and pegmatites bearing K-feldspar, fluorite and muscovite, some of which making important economic mineral deposits of the country. Some pegmatites carry considerable amounts of gem minerals which include tourmaline, topaz, beryl of gem and non-gem quality. Quartz of gem-quality occur in vugs and fissures of the country rock, quartz veins and pegmatites. Some of the ductile and shear fractures are filled with disseminated sulphides, sulphide veins and pockets of various sizes bearing pyrite and chalcopyrite.

The placement of pegmatites, quartz veins and the fracture and shear controlled mineralization in the Kandy-Matale area can be attributed to an intensive pegmatitic and pneumatolitic stage of magmatic activity during a series of relatively young ductile and brittle deformation stages. The active components of the fluids have apparently been rich in H_2O , S, CO_2 , B, F and Be which gave rise to tourmaline, carbonate, sulphide, fluorite and more importantly topaz.