APATITE OCCURRENCES IN THE SRI LANKAN PRECAMBRIAN

K. Dahanayake[1,2] K. K. M. W. Silva[2] S. M. N. D. Subasinghe[2]

1. Earth Sciences Division, Institute of Fundamental Studies, Kandy.
2. Department of Geology, University of Peradeniya, Peradeniya.

Apatite occurs as a minor, major or secondary mineral in the Precambrian rocks of Sri Lanka. In the metasedimentary successions of the Highland Series rocks of Central Sri Lanka, small apatite grains of the order of a few mm are commonly found within marble formations.

At Eppawela, in North Central Sri Lanka, larger apatite crystals of the order of 1 m in maximum diameter are found associated with magnetite, ilmenite, sphene and diopside in marble formations. At Eppawela and elsewhere in the metasedimentary successions, apatite also occurs in the core of cross-cutting scapolite-diopside veins.

In North-west Sri Lanka at Ambakote, apatite crystals of the order of a few cm occur with magnetite associated with zircon having clear crystal contours. The apatite-magnetite — zircon body is oblique to the general foliation of the associated gneisses.

In Central Sri Lanka, at Teldeniya, large apatite crystals of the order of a few cm occur along a fault developed at the contact between marlbe and charnockitic gneiss. The fault plane shows extensive apatite and phlogopite mineralization.

Secondary neo-formations of apatite were noted in the upper leached zone of the Eppawela Apatite Marble rock. The secondary grains occur within haloes formed around the primary apatite crystals or in the weathered regions of the apatite marble. Neo-formations of apatite are osbserved also within biogenic concentrically laminated structures.

The preliminary field and laboratory observations suggest igneous and metasedimentary origins for different apatite occurrences.