

D 247

Comparison of Transition Metals and Radioactive Element *Mineralization* in Three River Basins of Sri Lanka

The boundary between Highland Complex and Vijayan Complex which are two distinct metamorphic units of the Precambrian basement of Sri Lanka, is known as a mineralized belt (Munasinghe & Dissanayake 1979). As stream sediments are a good medium to study mineralization in an area, geochemistry of stream sediments of three drainage basins were studied to compare the mineralization along the Highland-Vijayan boundary and within the Highland Complex. Kotmala Oya which is situated within the Highland Complex, Menik Ganga and Lower Walawe Ganga (mainly Thimbolketiya Oya) and Menik Ganga which flow across the Highland Vijayan Boundary were sampled for this purpose.

Stream sediment samples were collected at 1Km intervals of the above three streams and were air -dried. XRF analysis was carried out to determine the transition and radioactive element concentrations.

The highest mean concentrations of Cu (93.34ppm), V (192.97ppm), and Zn (99.84ppm) were recorded from Kotmala Oya basin. There is a marked increase in Co (23.08ppm) and Mn (969ppm) concentration in Walawe Ganga sediments. Cr, Ni, Ti have no distinct high concentrations in any of the basin. Comparatively the highest concentrations of Ce (567.254 ppm), La (288.95ppm) and Th (135.14ppm) concentrations in Walawe Ganga basin while Kotmala Oya has the highest U contents (91.88ppm). All the elements except Co are enriched compared to upper continental crust. Co is also enriched in Walawe basin. Cr, Cu, Ti, V and Zn enriched in all three basins compared to upper continental crust and average shales. All the radioactive elements are enriched relative to both upper continental crust and the average shales.

Transition metal concentration do not show any direct relationship with Highland Vijayan boundary, but high concentrations of Ce, Th and La in Walawe basin may have a relationship with possible mineralizations along the Highland Vijayan boundary.