D-21: Alluvial gold enrichment in the Walawe Basin

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A study on gold mineralization was carried out in the Walawe river basin of southern Sri Lanka aimed at: (a) Understanding the mode of occurrence of lode gold mineralization, in the high grade metamorphic terrains of Sri Lanka and (b) Locating economically exploitable gold mineralization.

Mineralogical analysis of the panned concentrates of gem - bearing sediment layers, show that anomalous gold concentrations occur at various locations in the Walawe river. The average size of gold grains found in Weli Oya, a major tributary of the Walawe river is apparently smaller in size (normally <0.5 mm) than that in the main Walawe river (mostly >2 mm) with an observed maximum concentration of 19 g/t.

Haputale and Ratnapura topographic sheets and aerial photographs show that the Walawe river and most of its major tributaries have a general NE-SW or WNW-ESE flow direction. They follow lineaments some of which are more than 20 km long. In general, the Walawe river basin, which includes the Weli Oya basin is underlain by charnockitic rocks, quartzite and graphite, biotite, garnet-bearing gneisses. Distribution of fractures, shears and small vein-like bodies in the area show a close relationship to the accumulation of gold in the river. The areas with relatively larger grains and elevated concentration of gold are being further investigated by analysis of soil and rock samples from zones suspected of gold mineralization.