LOCALISING GEM DEPOSITS - USE OF STRUCTURAL MAPPING

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The gem deposits of Opanayake and Bogawantalawa areas were mapped and were observed to be structurally and tectonically controlled. The axial planes of synforms and antiforms have examples of structurally controlled deposits whereas faults and slips have examples of tectonically controlled gem deposits. The pegmatites and crystalline limestone intrusions believed to be responsible for the origin of skarn type gem deposits are also confined to these areas. There were also indications that the gemstones had been transported only for very short distances and were confined to the above mentioned regions.

The geological structure of the Highland Series of Sri Lanka can be compared with a contour relief-plan of non-orthogonal, non-equidimensional interference pattern of two series of geoforms (A_2, S_2 antiform, synform with A_2, S_2 antiform, synform) showing an interplay of opposite sigmoids and both right and left hand echelon alignments. According to this model, the intrusions which are associated with gem deposits are most likely to intrude along the axial planes of folds due to the least resistance offered. Those gem bearing intrusions cross cut the D_1 D_2 foliations and thus postdate the D_1 D_2 deformations. These intrusions have continued even upto the D_4 faulting which postdates the D_3 major structures.

This work has been supported by a grant from IDRC - Canada.