E - 27

PRELIMINARY STUDIES OF THE SOURCE ROCKS OF GEM MINERALS IN THE RATNAPURA DISTRICT, SRI LANKA

Kapila Dahanayake and A. P. Ranasinghe
(*Department of Geology, University of Peradeniya*)

The source rocks of gem minerals in Ratnapura and Elahera areas of Sri Lanka have been found to be pegmatites, marbles, cordierite gneisses and garnetiferous gneisses (Katz, 1972 and Silva, 1976). Depending on their locations, gem mineral-rich beds have been classified as residual, eluvial and alluvial formations (Dahanayake, Liyanage and Ranasinghe, 1979).

For the purpose of the present study, three gem-mining valleys of the Ratnapura district were selected. These valleys separated by semi-parallel ridges extend to an area of about 25 square miles in the Kalawana area and are underlain by Pre-cambrian high grade metamorphic rocks of Granulite facies. Field and laboratory studies of weathered/fresh underlying rocks show that the degree of occurrence of gem minerals is (a) directly proportional to the quartz content and (b) inversely proportional to the feldspar content of parent source rocks.

This research work is supported by a grant from the National Science Council of Sri Lanka.

References:

1. Dahanayake, K., Liyanage, A. N. and Ranasinghe, A. P. (1979). Genesis of Sedimentary Gem Deposits in Sri Lanka. Journal of Sedimentary Geology, Elsevier, Amsterdam. (In press).
2. Matz, M. B. (1972). On the origin of the Ratnapura-type gem deposits of Ceylon, Economic Geology, 67, pp. 113-115.
3. Silva, K. K. M. W. (1976). Some geological aspects of the Elahera Gem field, Sri Lanka, Abstract, 32nd Annual Sessions, SLAAS.