Geochemical Exploration for Gem Deposits in Sri Lanka – Application of Discriminant Analysis

Geochemische Exploration von Edelstein-Lagerstätten in Sri Lanka – Anwendung der „Discriminant Analysis"

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With 8 Figures

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Abstract

Discriminant analysis of geochemical data for stream sediments and bedrock of the drainage basins in 7 localities of Sri Lanka selected as test areas successfully distinguished areas of known high gem potential from those of moderate and low or no potential. Using the discriminant function generated from the data set for the 7 test areas, individual stream sediment samples can be classified as high, moderate, or low potential thereby enabling the preparation of gem potential maps of drainage areas. The quantitative distribution of trace elements in stream sediments reflects the presence of certain heavy minerals that tend to be concentrated along with gems. It is suggested that marbles, skarns, calc-silicate and similar rocks derived by metamorphism of limy and aluminous sediments were the most probable bedrock sources of gems now found in the stream sediments. Gems are also known to occur in pegmatites.