

## EXPLORATION FOR GEM FIELDS

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The following areas were selected for field investigations:

1. a well-known gem-bearing area—Opanayaka, in the Highland Series of Sri Lanka,
2. a hitherto unknown gem-bearing area—Bogawantalawa, which is close to Opanayaka and is in the same granulite facies Highland Series of Sri Lanka,
3. a known gem-bearing area further to the north in Sri Lanka—Elahera, in the Highland Series, and
4. another area in which gems are not expected to be found—Maha Oya in the Kurunegala District of the Vijayan Complex, for comparison.

Accessibility and a good coverage by natural drainage systems which cross-cut the different geologic formations were considered when selecting the areas.

A total of about 250 stream-sediment and bed-rock samples were collected at 200 to 400 meter intervals from the Opanayaka and Bogawantalawa areas. All samples were dried and sieved and five fractions were used for chemical analysis. Analytical data for 25 elements were plotted by the computer and contour maps showing "distribution of element concentration" were compiled.

Two different major distribution patterns have been obtained for the Opanayaka and Bogawantalawa areas. High concentrations of some valuable elements (e.g., Ti, La, Nb, Y) were found together in the first area and some major elements (e.g., K, Al, Mg, Ba, and Rb) were concentrated in the latter area. As expected, Rare Earth Elements (REE) La and Ce were also found together in both areas.