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The garnets of the schlich of the winter coast (the
White Sea)

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Abstract

During an expedition to the White Sea Winter Coast, samples of schlich with numerous garnets were collected. The coast itself is primarily a set of high steeps of sandstones and mudstones with no garnets. On the beach, however, there are numerous pebbles of metamorphic rocks, and many of them contain garnets. They were brought there by the Quaternary glacier and the present day glacier activity. Their source could be the existing or fully eroded metamorphic rocks of the Kola Penninsula and Northern Karelia.

Goal of the research: To discover the possible origin of the garnets.

Tasks: 1) To analyze the structure and the chemical composition of the garnets. 2) To study the works on the garnets of the Kola Penninsula and Northern Karelia in order to compare the information to the results of the analysis.

Methods: 1) Granulometric analysis; 2) Magnetic and electromagnetic separation; 3) Microscope study of the garnets; 4) X-ray diffraction analysis; 5) X-ray fluorescence analysis.

RESULTS

1. The sample garnets could be divided into two types: the bright red and the pale pink.
2. Both types are almandines with spessartine components. The pale-pink one contains Arizona ruby components, and the bright red contains andradite ones.
3. Only a few samples from Khangaz Varaki, Malye Keivy, and Tersky Coast are similar to the garnets that we collected. It is possible that the glacier brought them from the Kola Penninsula, but it is also possible that the rocks, where the glacier brought our garnets from, have been totally eroded.

評語

A complete study with sound method and reasonable explanation.