tional crystallization process for the evolution of the plutonite. Fractional crystallization is also supported by the trace element behaviour. The large variation of compatible elements (Ba, Sr) and the small variation of incompatible elements (Rb) is consistent with such a process.

The geochemical behaviour of the rocks investigated, indicates that fractional crystallization is mainly controlled by plagioclase, hornblende, biotite and K-feldspar, followed by zircon, apatite and sphene.

Petrographic major element models, used to calculate the crystal cumulates and determine their modal compositions, require 52% crystal fractionation of the parental magma (Hb-Bi-monzodiorite) for the formation of the Hb-Bi-quartz monzonite, 5% of Hb-Bi-quartz monzonite to give Bi-quartz monzonite, 47% of Bi-quartz monzonite to give Bi-granite, 21% Bi-granite to give leucogranite and 30% of the later to give aplite.

The results of the major element models are tested dy trace element (Rb, Ba, Sr) models. Compatible/incompatible element diagrams (Rb/Ba vs Ba, Rb/Sr vs Sr) were used. Based on the major element models, the concentrations of these elements were calculated and the theoritical differentiation trends were constructed. The distribution of the calculated concentrations of these elements matches very well the real distribution of them.

The distribution of Rb, Ba and Sr of the gneissic rocks follows the calculated differentiation trends of the plutonite for these elements, thus suggesting a similar evolution.

THE DISTRIBUTION OF TRACE ELEMENTS IN CHROMITITE ORES AND BASIC-ULTRABASIC ROCKS OF THE VOURINOS OPHIOLITE COMPLEX, W. MACEDONIA

G. Konstadopoulou

IGME, Mesoghion 70, 11527 Athens, Greece

The distribution of Ti, V, Mn, Ni, Cu, Co, Zn and As in chromitite ores and basic-ultrabasic rocks of the Vourinos ophiolite complex, is discussed. Based on the trace element distribution, three geotectonic units may be distinguished: a) south Vourinos, b) north Vourinos and c) Kissavos. The distinction is based on the concentration and variability of trace elements in the afore mentioned units, whereas a correlation to the composition of the chromitite ores with respect to major elements and PGE concentrations is being made. The ultrabasic block of Rodiani, east of Vourinos, seems to be an independent geotectonic unit. Any systematic differentiation of trace elements within every and each particular unit, indicating a distinct stratigraphic upsection in the mantle sequence of the ophiolite, is not documented from the present study. The distribution of trace elements in the Vourinos ophiolite complex may be explained by the geochemical behavior during the partial melting and fractional crystallization processes.