

Huge blocks of gabbros appearing in gabbroic layer in Wadi Sudum to Hilti area, northern Oman ophiolite

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Geological structures and lithology of gabbroic layer exposed in Wadi Sudum to Hilti area of the northern Oman ophiolite were studied. Gabbro layers were classified into lower layered gabbro, upper layered gabbro and upper gabbro. The definition of lower and upper layered gabbros is due to the presence (lower layered gabbro) or absence of mineral lineation (upper layered gabbro) on the layering plane. Upper gabbro show massive or foliated appearance. Besides, pegmatitic gabbros with various sizes intrude into layered gabbro.

We found highly oblique structures in the layered gabbros. At many outcrops nearly vertical oblique relation of layerings were observed. The layering structures surrounding such highly oblique layerings are complexly disturbed. However, these two layerings contact each other without effects of deformation. The reason for the highly oblique intersection of layering is regarded as occurrence of huge blocks of layered gabbros. It is noticed that the appearance of these huge blocks are mainly limited in the upper layered gabbro. Furthermore, pegmatitic gabbros are frequently observed around the gabbro blocks.

Mineral compositions of host layered gabbro and gabbro blocks show nearly similar features. Therefore, host and blocks are derived from similar magmas. On the other hand, mineral composition of the pegmatitic gabbro show evolved features.

Based on these facts, we discuss with significance of the gabbro blocks.