

オマーンオフィオライト地殻セクション中に分布する超苦鉄質岩体の多様性 Magmatic diversity of the ultramafic rock in the oceanic crustal sequence, Oman ophiolite

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Although all the wehrlitic intrusions in the Oman Ophiolite are regarded as a single group (e.g. Koepke et al. 2009), there are two different types of wehrlitic intrusions. The first are ordinary wehrlitic intrusions that have similar features to the crustal sequence of V1 (MOR basalt). The second are a depleted type characterized by the appearance of true wehrlite and depleted mineral compositions (Adachi & Miyashita 2003; Yamasaki et al. 2006; Goodenough et al. 2010). The former and latter groups are linked to V1 and V2 magmatism, respectively.

We report the discovery of a new occurrence of the ultramafic rock in the oceanic crustal sequence from the Oman ophiolite, which does not intrude into the crustal sequence. This ultramafic rock is referred to as the Lasail-South complex, and the oldest rock in the study area because of being intruded by sheeted dyke complex. TiO₂ and Na₂O contents of clinopyroxene from the complex range 0.06-0.59 and 0.09-0.42 wt%, respectively, and are similar to the fractional crystallization trend of oceanic gabbro. Co-variation of Mg values of clinopyroxene and An contents of plagioclase show that most of samples plot in the Oman layered gabbro field. Although mineral compositions of the Lasail-South complex show characteristic of mid-ocean ridge magmatism, the complex mainly comprises plagioclase-hornblende-lherzolite, olivine-clinopyroxenite and clinopyroxenite. Such rock assemblage is different from the assemblage of the oceanic crust of the Oman ophiolite. The Lasail-South complex shows intermediate characteristic of mid-ocean ridge and island arc magmatism, and we attempt to discuss the origin of the complex.

References

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