

研究題目：タヒチ島および荒戸山産捕獲岩の岩石学的研究

Petrological studies of ultramafic xenoliths in alkali basalts from Tahiti,
Arato-yama, and Myojin-yama.

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Various types of ultramafic xenoliths occur in alkali basalts from Tahiti, Arato-yama, and Myojin-yama. Tahiti is an island of French Polynesia in the South Pacific, and Arato-yama and Myojin-yama are Cenozoic basaltic domes located in Kibi Plateau, Okayama Prefecture. Ultramafic xenoliths from Tahiti, Arato-yama and Myojin-yama represent rock samples brought to the surface from the upper mantle underneath the South Pacific basin and a mature island arc of Southwest Japan, respectively. Petrographic and microprobe studies were carried out on these ultramafic xenoliths in hopes that they may reveal differences in the upper mantle physico-chemical conditions between these two different tectonic settings.

Tahitian ultramafic xenoliths examined in the present study consist of lherzolite, harzburgite, dunite, wehrlite, websterite, and orthopyroxenite. Ultramafic xenoliths from Arato-yama and Myojin-yama are classified into six rock types; i.e., dunite, lherzolite, wehrlite, olivine-websterite, websterite, and clinopyroxenite. Microscopic textures and mineral chemistry suggest that some ultramafic xenoliths from Arato-yama and Myojin-yama were derived from the cumulus mantle, whereas the lherzolite and harzburgite xenoliths from Tahiti may be a refractory mantle peridotite. Equilibrium temperatures of Tahitian lherzolite and harzburgite xenoliths are about 1100°C and 1200°C, respectively.