Paleomagnetic study of the Sambe Volcano: age of dacite domes, temperature of pyroclastic flow, and self-reversed magnetic mineral

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Paleomagnetic study of Late Quaternary Mt. Osambe lava dome yields a mean paleomagnetic direction of D=12.2 deg., I=53.0 deg., a95=2.5 deg. We estimate that Mt. Osambe formed at 3.7-3.8 Ka, by correlation with the Holocene geomagnetic field direction secular variation curve of Hyodo and Minemoto(1996). Consistent paleomagnetic directions obtained from the four lava domes suggest that they were erupted at almost the same time. Emplacement temperature of Taiheizan pyroclastic flow deposits, which are exposed 2 and 6km from the lava domes, is inferred to be 500-530 deg. C from the results of thermal demagnetization. A magnetic mineral, hemoilmenite, which shows self-reversal of thermo-remnant magnetization, occurs in dacite clasts within the pyroclastic flow deposits.