

Volcanic geology of Niijima, Izu-Mariana Arc.

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Niijima is the quaternary volcanic island (monogenetic volcanic group consists of at least 12 rhyolitic volcanoes and one basaltic volcano) on the Izu-Mariana Arc. This study intends to clarify the history of volcanic activity in the island based on an analysis of topography using aerophotographs and on geological survey. Generally, each volcano started its activity by the eruption of pyroclastic surge followed by the eruption of pyroclastic cone and lava dome. Based on the mafic mineral assemblages of phenocryst, the activities of the island can be divided into three stages. The hydration-layer method using glassy rhyolite was employed to determine the absolute age of five rhyolitic volcanoes. The result indicates that the volcanic activity above sea level begun about 70,000 years before.