

雲仙火山, 眉山の形成過程

尾関 信幸*・奥野 充**・小林 哲夫***

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Growth History of Mayuyama, Unzen Volcano, Kyushu, Southwest Japan

Nobuyuki OZEKI*, Mitsuru OKUNO** and Tetsuo KOBAYASHI***

Unzen volcano is a large volcanic complex which started its eruption ca. 0.5 Ma at the center of Unzen graben, Shimabara peninsula, northwestern Kyushu, Japan. This volcano consists of many volcanic edifices such as Takadake, Kusenbudake, Fugendake volcanoes etc. These volcanoes are composed mainly of lava domes and thick lava flows of hornblende andesite and dacite. Volcanic history of Unzen volcano is divided into two stages: the older and younger stages. The younger stage is subdivided into three sub-stages which consist of Nodake volcano, Myokendake volcano, and Fugendake and Mayuyama volcanoes, respectively. Mayuyama is an isolated volcano on the eastern foot of Fugendake, and is the youngest among them with an age of ca. 4 ka.

Mayuyama volcano consists of two adjoining volcanic edifices, Shichimenzan and Tenguyama, which trend north to south. Geological data indicate that there was once a large lava dome of the same size and at the same place of the present Mayuyama. At the beginning of the Mayuyama eruption, uplift occurred around the present site of Mayuyama, and pre-Mayuyama collapsed. The Shimabara debris avalanche resulted from this movement. A small area to the west of Mayuyama tilted and formed the Taruki plateau, a flat uplifted surface. After the growth of Tenguyama lava dome, Shichimenzan, a volcanic spine, was formed at the northern slope of Tenguyama. Due to the growth of Shichimenzan, the northern part of Tenguyama suffered intense shear-stress which resulted to the formation of many faults and lineaments. During the formation of Mayuyama volcano, Mutsugi block and ash flow was generated mainly to the north of Mayuyama. On the bases of two radiocarbon dates, we estimate the eruption age of Mayuyama as ca. 4.6 cal kyr BP.

Summit lava domes of Fugendake were also generated shortly before the Mayuyama eruption. This means that lava domes at the summit and flank of Unzen volcano were almost simultaneously formed during the 4.6 cal kyr BP eruption.

Key words: Unzen volcano, Mayuyama, eruptive history, lava dome, ground deformation

1. はじめに

雲仙火山は、九州北西部の島原半島を東西に横切る雲仙地溝(太田, 1972)の中央部に位置する活火山である(Fig. 1)。雲仙火山の活動は約50万年前から始まったとされ、厚い溶岩流や溶岩ドームの形成とそれに伴う block and ash flow の発生が活動の主体である (Hoshizumi *et al.*,

1999)。この間、角閃石安山岩〜デイサイト質マグマの活動が継続している。現在は高岳^{くせんぶだけ}、九千部岳^{くせんぶだけ}、普賢岳^{くせんぶだけ}など複数の火山体からなる(渡辺・星住, 1995)。眉山^{まへやま}は、天狗山^{てんぐやま}(708 m)と七面山^{しちめんざん}(818.7 m)という2つの溶岩ドームが南北に連なった複合火山体で、雲仙火山東麓に位置している。

* 〒331-8638 さいたま市北区吉野町 2-272-3
株式会社ダイヤコンサルタント ジオエンジニアリング事業本部 砂防・防災センター 防災グループ Dia Consultant Co., Ltd., 2-272-3 Yoshino-cho, Kitaku, Saitama 331-8638, Japan.

** 〒814-0180 福岡市城南区七隈 8-19-1
福岡大学理学部地球圏科学教室
Department of Earth System Science, Faculty of Science, Fukuoka University, 8-19-1 Nanakuma, Jonan-

ku, Fukuoka 814-0180, Japan.

*** 〒890-0065 鹿児島市郡元 1-21-35
鹿児島大学理学部地球環境科学教室
Department of Earth and Environmental Sciences, Faculty of Science, Kagoshima University, 1-21-35 Korimoto, Kagoshima 890-0065, Japan.

Corresponding author: Nobuyuki Ozeki
e-mail: N.Ozeki@diaconsult.co.jp