

文献史料に基づく江戸期における霧島火山新燃岳の噴火活動

及川輝樹*・筒井正明**・大學康宏***・伊藤順一*

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Eruption History of Shinmoedake of Kirishima Volcanoes in Edo Period,
Based on the Historical Documents

Teruki OIKAWA*, Masaaki TSUTSUI**, Yasuhiro DAIGAKU*** and Jun'ichi ITOH*

Shinmoedake (Kyushu, Japan), which is one of the Kirishima Volcanoes, experienced several small eruptions in 2010, finally culminating in a sub-plinian eruption on January 26–27, 2011. After this sub-plinian phase, the eruption style shifts to the phase of vulcanian eruption or ash emission. This volcanic activity is still occurring. We here summarize the eruption history of Shinmoedake during the Edo period on the basis of historical records. The eruptions of Shinmoedake during the Edo period occurred in AD 1716–1717 (Kyoho eruption) and AD 1822 (the 4th year of Bunsei eruption). The Kyoho eruption, which was a large-scale (total amount of tephra: 2×10^{11} kg) eruption, is divided into the following seven stages. Stage 1 (Apr. 10, 1716 to May 7, 1716): small eruptions occurred over two months; Stage 2 (Sep. 26, 1716): falling ash first observed at the foot of Shinmoedake; Stage 3 (Nov. 9 to 10, 1716): the first large eruption was observed, with pumice falling over a wide area; Stage 4 (Dec. 4 to 6, 1716): small eruptions; Stage 5 (Feb. 9 to 20, 1717): the second pumice fall eruption, with an intermittent ash fall eruption thereafter; Stage 6 (Mar. 3, Mar. 8, Mar. 13, Apr. 8, 1717): ash fall eruptions; Stage 7 (Sep. 9, 1717): the last ash fall eruption. These eruptions, which continued intermittently over 17 months, were characterized by multiple repetitions of a large eruption. Based on the results of a comparison between the Kyoho eruption and the 2011 eruption, the eruptions from March 30, 2010 to January 26, 2011, were similar to Stages 1 to 3 of the Kyoho eruption; the eruptions after January 26, 2011, were similar to Stages 5 to 6 of the Kyoho eruption. In addition, the relatively large eruption events of Stages 3 and 5 of the Kyoho eruption and the January 26–27, 2011, eruption began without any noticeable precursors. The eruption in the 4th year of Bunsei (AD 1822) was a small eruption that lasted less than a day. The recent eruption sequences, which were also similar to the Edo period eruptions, are divided into a small-scale eruption (the 1959 eruption) and a large-scale eruption (the 2011 eruption). The eruption duration time of the small-scale (total amount of tephra: $< 10^{10}$ kg) eruption was less than a day. The eruption duration time of the large-scale (total amount of tephra: $> 10^{10}$ kg) eruption could be a few months or years. Both eruption sequences began with a small eruption. A large-scale eruption can occur a few months after the start of the eruption sequence. This is an important turning point in the eruption sequence of Shinmoedake.

Key words: Kirishima, Shinmoedake, historical record, Edo, eruption sequence

1. はじめに

過去の噴火活動の推移を復元し、観測された噴火推移との比較を通して両者の類似点・相違点を明確にするこ

とは、噴火推移の分岐過程の解明にとって重要な作業である(例えば、中村, 2011)。歴史資料(史料)から火山活動に関連した記述を抽出して読み解く作業によって、

* 〒305-8567 茨城県つくば市東1-1-1 中央第7
産業技術総合研究所地質情報研究部門
Institute of Geology and Geoinformation, AIST, Tsukuba
Central 7, 1-1-1 Higashi, Tsukuba, Ibaraki, 305-8567,
Japan.

** 〒331-8638 埼玉県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 砂防・防災事業部
DIA consultant Co. Ltd., Sabo and Disaster Prevention
Center, 2-272-3 Yoshino-cho, Kita-ku, Saitama 331-8638,

Japan.

*** 〒889-4492 宮崎県西諸県郡高原町大字西麓899番
地 宮崎県高原町役場
Takaharu Town Office, Seiroku899, Takaharu-machi,
Nishimorokata-gun, Miyazaki 889-4492

Corresponding author: Teruki Oikawa
e-mail: teruki-oikawa@aist.go.jp