

Archives on An'ei Eruption, Izu Oshima Volcano in 1777 to 1792

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Based on archives, historical An'ei eruption, the latest large eruption in Izu Oshima Volcano(1777 to 1792), was reviewed from the aspect of sequence of volcanic phenomena and the official correspondence for mitigation of volcanic hazard and aid for recovery. These documents include 1) reports related to An'ei eruption from the local government office in Izu Peninsula on mainland to the national government in Edo (Tokyo) and 2) reports of the historical records in the island from islanders to the local government office.

Sequence of the An'ei eruption at Izu-Oshima Volcano

Stage I An activity, called the An'ei eruption, commenced on August 31, 1777, followed by a thin widespread fall of ash, scoria and peles hair. Outflow of lava from the caldera was not recognized.

Stage II A violent scoria fall and cone forming (sub) plinian eruption took place on April 14 1778. On April 19, a lava flowed down from the northwestern foot of Mihara-yama to the northeast along Nakano-sawa for about 4 km long.

Stage III Activity regained. On Nov. 6 1778, a lava flow from the southern foot of Mihara-yama crept down to the southwest along Aka-sawa for about 6 km. On Nov. 14 or 15 1778, a lava-flow from the northeastern foot of Mihara-yama poured out along Gomi-sawa into the sea forming a mound. The latter lava covered the eastern part of the island.

(There is a article that described smoke and fire in Senzu village, 8 km NE of the Mihara crater in Jan. 1779. But, exactly the same article dated on March 1778 exists which described the activity of the Stage II. Judging from the situations and the consistency, the article of Jan. 1779 should be deleted)

Ash-fall Stage After a period of 5-years' quiescence, ash fell from Nov. 25 1783 to 1786, accumulated to a thickness of more than 50cm at Nomashi village, 20-30cm at Motomachi and Senzu villages. Activity came to an end in autumn 1792.

Refuge program and aid during the An'ei eruption

According to the documentation, the islanders recognized that the caldera wall act as geographic barrier to lavas flow into Motomachi and Okata village area but did not so as to Senzu, Nomashi and Sashikiji area.

The residents answered the government's questions on refuge program in the case of emergencies that they would move by fishing boat to the safer area in the island if the eruption was limited and if the eruption was truly hazardous case, all the 2300 islanders would evacuate from the island by the shipping boats and fishing boats available.

Official inspectors of the local government made expedition of the island in 1778 and 1784. The government gave food provision in 1777-78 and 1779, and financial aid for food and reconstruction in April and September 1784, 1785, 1787 and 1791.

During the active stage, lava flows and scoria fall did not directly affect the village area, but volcanic ash, because of long-lasting ash fall stage, covered the whole island thickly including village area, that production from agricultural field suffered big damages.

The population of the islander, decreased approximately 10% from 2,298 people in 1778 to 2,076 in 1789. That could be attributable to aggravation of the living environment in the island by the eruption disaster.

Discharge rate of magma during the An'ei eruption was highest at the time of (sub) plinian eruption and lava outflow in the Stage II, which was 8 months after commence of the eruption. Although magma was probably retreating during the 10 years' Ash-fall Stage, thick ash deposited in the stage gave serious damages to the life of islanders.