

SVC048-P04

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## Description of the deposits of a historical small eruption in the Yatsugatake Volcano, Japan, and their significance

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The Yatsugatake Volcanic Chain, located in central Japan, has many eruptive centers and trends north-south over a distance of 21 km. Its activity started about 0.5 Ma, but many eruptive events have occurred in the surrounding area for more than 1 million years (*e.g.*, Nishiki *et al.*, 2007). Age data for each eruptive event are gradually accumulating, but few studies have investigated the younger period, in particular the Holocene.

Yokodake, located at the north end of the volcanic chain, had at least two eruptive events at about 2.4 ka and between 0.9 and 0.7 ka (Okuno, 1994). In the latter case, the Hachodaira lava flowed from the south flank of Yokodake (Okuno, 1995).

We therefore performed a field survey in Northern Yatsugatake area to clarify whether eruptions occurred in other areas and to determine whether volcanic activity in 887 or 888 A.D. triggered the sector collapse in the Inagodake area.

We observed white volcanic ash deposits of silt-size grains in a few localities from Mt. Nyu to Sirakoma Pond. The deposits were 2.5~8 cm thick and positioned between the upper black soil and lower brown soil. The ash contained two pyroxenes, plagioclase, quartz, hornblende, and oxyhornblende phenocrysts. The refractive indices of the oxyhornblende phenocrysts in every deposit were between 1.733 and 1.752.

The <sup>14</sup>C (AMS) ages of the soil deposits covered with the white ash ranged from 415 to 585 years BP (Libby Age), *i.e.*, calendar years 1320~1465 A.D. (68.2% probability).

Because they had similar characteristics, we believe that all of the deposits recognized in this study were the same product.

The white ash may be the product of a small phreatic explosion because it lacks any fresh or vesicle grains. The distribution suggests that the source crater of this ash was between Mugikusa Pass and Mt. Nyu. The presence of oxyhornblende phenocrysts in the ash means that the source crater of this ash is in the distribution area of the Inagodake lava, which includes oxyhornblende phenocrysts.

We do not believe that any relationship exists between the eruption of this ash and the sector collapse that occurred in 887 or 888 A.D. because the ash is younger than the sector collapse. Nevertheless, determining more characteristics of the ash, such as the location of the source crater, is important for reconstructing the igneous activities in this area.

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Keywords: Yatsugatake Volcanic Chain, historical eruption, volcanic ash, AMS dating