

阿蘇カルデラ北部，阿蘇谷千町無田ボーリングコアの 植物珪酸体および微粒炭分析

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Phytolith and Macroscopic Charcoal Analyses of the Senchomuta Drilling Core in Asodani Valley, Northern Part of Aso Caldera, Japan

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Abstract

Holocene environmental changes and vegetation history are constructed using phytolith and macroscopic-charcoal analyses of a 23-m-deep drilling core obtained at the Senchomuta marsh in Asodani Valley, northern part of Aso caldera, SW Japan. An intra-caldera lake existed in the Asodani Valley prior to approximately 9 cal ka (calibrated ^{14}C age). Multiple large flood events occurred during the period 8.9–8.1 cal ka and emplaced thick sandy deposits in the valley basin. Thereafter, the center of the Asodani Valley (northern part of caldera floor) changed to swampy and fluvial environments. *Sasa* (cool-temperature dwarf bamboo) grasslands and/or forests with understory *Sasa* covered slopes of the Asodani Valley basin between 11 and 9 cal ka. *Sasa* phytoliths significantly increased at ca. 7.3–6.5 cal ka, but thereafter decreased. *Miscanthus* (Japanese pampas grass) grasslands existed continuously on the slopes. Macroscopic-charcoal particles were abundant during the last 6000 years, and the peak (6.1 cal ka) amount of charcoal particles is consistent with that of *Miscanthus* phytoliths. This indicates that the existence of *Miscanthus* grassland might be related to fire events. Inside the Asodani Valley, *Phragmites* (reed) became established continuously along the shore of the intra-caldera lake (prior to ca. 9 cal ka) and in subsequent marshes. Gramineae phytoliths were detected predominately through all horizons of the drilling core, whereas a small amount of arboreal phytolith was observed at most horizons. We, therefore, believe that forests existed on steep slopes such as the caldera wall where human impacts were small, although *Sasa* and *Miscanthus* grasslands were maintained by human activity outside Aso caldera.

Key words : Aso caldera, phytolith, vegetation history, macroscopic charcoal, environmental change

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