

Environmental change before and after Kikai-Akahoya tephra descent in the Miyazaki plain, Southern Kyushu

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In the early Jomon period (ca. 7.3 ka), a large Koya pyroclastic flow reached the southeastern Kyushu was reached by the eruption that occurred at the Kikai caldera about 40 km off the southern edge of the Osumi Peninsula. At this time the fine grain ash which blew up in the sky is called K-Ah tephra and it is known that it has reached the Tohoku region. Kawahata has reviewed the research on the age of the K-Ah tephra so far, also studied the positioning of the tephra in the elders of the archeology, and have considered how the K-Ah eruption had an impact on human beings and other ecosystems (Kuwahata, 2013). In this report, since the boring survey was conducted on the alluvial deposit of the Miyazaki plain where the K-Ah tephra was thickly deposited, we will report the outline of our study.

In the Miyazaki plain, the K - Ah tephra of the first deposit is 20 to 30 cm thick and is observed as a mild to fine grainy glassy falling volcanic ash. On the other hand, secondary sediments found in alluvium deposits are thickened to about 2 m in thickness due to the influence of water flow, and are composed of gray medium grain glassy volcanic ash which has been culled out. The cause of thickening of the secondary sediments of K - Ah tephra was caused by debris flow or flood flow accompanying the collapse of mountainous and hilly slopes where land - based vegetation died due to ash falling and lost water storage function Nagaoka et al. (1991) had estimated that there was. In recent years, the hypothesis that the sand layer of the K-Ah base is a tsunami event deposit immediately after the tephra ash fall has also been shown by Matsuda et al. (2016).

In July 2017, we carried out an all-core boring in the Ikumenomori Sports park of Miyazaki City. As a result, it was possible to collect cores up to the excavation length of 15.55 m from the surface. We are conducting various analyzes such as tephra analysis, radioactive carbon dating, pollen analysis, diatom analysis, seed analysis, plant silicate analysis, shellfish analysis, foraminiferal analysis, etc., using the collected cores.

Core stratigraphy is divided into five layers A to E. Dark gray organic soil (A layer) directly beneath the embankment, gray silt layer of peaty (B layer), water deposit of K-Ah (C layer), secondary sediments and events of K-Ah tephra Sand layer (D layer), gray silt layer containing shell pieces (E layer). As a result of various natural scientific analyzes of the core, it became obvious that the K-Ah tephra secondary sediments are almost composed of bubble type volcanic glasses, and the base event sand layer includes not only K - Ah but also Aira It was also found to contain volcanic glass originating from Aira-Tn (AT) tephra. Therefore, the estuary environment has been occurred in the Miyazaki plain caused by the Jomon transgression, and it has been buried rapidly due to the secondary deposition of K-Ah, and changed to landenvironment drastically.

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(References) Kuwahata, 2013, Quaternary research 52, 111-125. Nagaoka et al., 1991, Quaternary research 30, 59-78. Matsuda et al., 2016, JpGU 2016 abstract, MIS11-P16.

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