Field survey on Yakushima

Katsuhiko Kimura (Fukushima University), Masanori Sano and Reona Hiramine (National Museum of Japanese History), Tetsuya Shinozaki (University of Tokyo), and Mitsuru Okuno (Osaka Metropolitan University), members of the Cataclysmic Disasters and Dating Group, conducted a field survey in Yakushima Town, Kagoshima Prefecture, from June 3 to 6, 2025. The survey focused on the areas surrounding the Miyanoura River, Nagata River, and Isso River.

Yakushima is located approximately 60 km south-southwest of Cape Sata, the southernmost point of Kyushu. Its highest peak, Miyanoura-dake (1936 m above sea level), is composed of primarily of granitic rocks. The island is registered as a UNESCO World Heritage Site due to its remarkable altitudinal vegetation gradient, which spans from subtropical to cool temperate zones, and its pristine natural forests, including giant cedar trees such as the “Jomonsugi”. Pumiceous deposits (see photos ① and ②) associated with the Akahoya eruption (approximately 7.3 cal ka BP) originating from the Kikai caldera in the sea area between Kyushu and Yakushima, are distributed along the Miyanoura River, Nagata River, and Isso River. Uncarbonized trees remains buried within these deposits (photo ③) present a valuable opportunity for dendrochronological analysis. The primary objective of this survey is to measure tree rings and obtain precise and accurate dating of the Akahoya eruption, considered the largest volcanic event of the Holocene (approximately the last 10,000 years). Recent driftwood was also found in the rivers (photo ④) and must be carefully excluded from the analysis to prevent contamination of the chronological data.

Acknowledgement: Shojiro Nakagawa of the Yakushima Geology Club supported the field survey by providing local information.

Photo ①: **Pumiceous deposits exposed along the right bank of Miyanoura River**.

Granite gravel is deposited on the left bank.

Photo ②: **Facies of the pumiceous deposits**.

Coarse pumice fragments are randomly intruded into the volcanic ash matrix, and tree fragments and cavities left by tree trunks are also visible.

Photo ③: **A tree trunk buried in pumiceous deposits underwater.**

The occurrence was confirmed using an underwater camera.

Photo ④: **Driftwood observed on the left bank of the Miyanoura River (center of photo).** It was buried in gravel, not pumice deposits, so it is determined to be recent driftwood. (Photo by Shojiro Nakagawa)