

Dawson Tephra in the sedimentary core collected at the Patton Seamount, off the Alaska Peninsula

*Kaori Aoki¹

1. Rissho University

This study reports tephra in the giant box core SO202-27-6 collected at the Patton Seamount off the Alaska Peninsula during the research cruise SO202-INOPEX in 2009. It was collected on the Patton Seamount at the latitude 54°17.77' N, the longitude 149°36.01' W and the bottom of the sea which is 2919 m. The core consists of the pelagic ooze, and its length is 2.92 m. There are two tephra layers, which the upper layer (Sample ID93 and ID94) is sub bottom depth 119-122 cm and the lower layer (Sample ID95) is sub bottom depth 135-138 cm. ID93 tephra sample is well-sorted and normal grading whitish gray volcanic ash layers which maximum diameter of grain size is approximately 3 mm, and including some lithic fragments which diameter is about 9 mm. ID95 tephra sample is crystal rich layer including fine volcanic glass shards.

Electron microprobe analysis determined the major element composition of volcanic glass shards in ID93 tephra sample. Geochemistry of ID93 tephra is rhyolite and very similar to Dawson tephra (ca. 27 ka) in Mangan et al. (2003). Furthermore, geochemistry of ID93 tephra sample determined by the X-ray fluorescence is also close to geochemistry of whole-rock analysis of pumices (Mangan et al., 2003). Dawson tephra was provided from the Emmons Lake volcano on the Alaska Peninsula in the last glacial maximum, and found in loess deposits on west-central Yukon Territory. This is the first discovery that Dawson tephra distributes over the Pacific Ocean.

Mangan et al. (2003), Emmons Lake Volcanic Center, Alaska Peninsula: source of the later Wisconsin Dawson tephra, Yukon Territory, Canada. *Canadian Journal of Earth Science*, 40, 925-936.

Keywords: Dawson tephra, the Alaska Peninsula, sedimentary core