

## Late Quaternary tephra and basin fill sediments under northeast part of Yonezawa basin, Northeast Japan

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We report tephra distributed under the northeastern part of the Yonezawa Basin, in the southern part of the Northeast Japan Arc. The Yonezawa Basin is the one of the inland tectonic basins along the backarc side of the Ou Backbone Mountains. There is a wetland which delimited by the small fans in the southern and western margins and by the mountains in the northern and eastern margins around the Lake Hakuryu in the northeastern part of the Yonezawa Basin, which called Oyachi (Yoshida, 1955). We observed two cores, B7-1-2 and B7-1-14, both drilled at Fukanuma, Takahata Town at the southern margin of the wetland. Both core obtained at distance of about 200 m, and about 90 m long.

Both B7-1-2 and B7-1-14 cores have well developed peat deposit. Silt and peat deposit contains about 1-20 cm thick thin sand layers repeatedly. Well sorted granule thin layers and pebble thin layers which contains max 4 cm in diameter are observed at the middle and lower part of the sediments, but poorly lateral continuities. In addition, both cores are not drilled through the Quaternary deposit under the Yonezawa Basin.

In the B7-1-2 core, Numazawa-Kanayama tephra (Nm-KN; 62-65 ka: Suzuki and Soda, 1994) is in 31.59-31.655 m depth, Aso-4 tephra (Aso-4; ca. 87 ka: Aoki et al. 2008) is in 44.16-44.23 m depth as a blocky form, and two-pyroxene crystalline ash (B7-1-2L) is in 79.14-79.16 m depth, are observed.

In the B7-1-14 core, Nm-KN is in 27.33-27.34 m depth, two-pyroxene crystalline ash (B7-1-14E) is in 75.47-75.485 m depth, and glassy ash contains babble-wall type of glass shards (B7-1-14G) is in 83.97-84.07 m depth, are observed. Furthermore, a beige ash patch observed in 39.385-39.39 m depth would correlate to Ontake-Nagawa tephra (On-NG; 85.1 ka: Nagahashi et al., 2007).

We could not observed a AT bed in the both cores, however, we detected babble-wall type of glass shards from correlate to AT in the gray silt bed in 21.62-21.63 m depth between a peaty silt bed in the B7-1-2B core (not sequential sampled). In addition, B7-1-2L and B7-1-14E are correlate to each other because of its height above sea level and petrographic features.

It is concluded that height above sea level of Nm-KN and B7-1-2L/B7-1-14E indicate sediments in the both cores deposited almost horizontal form. Deposition rate simply calculated and estimated from age and depth of Aso-4 in the B7-1-2 core is about 0.5 m/kyr, which shows slightly larger value than 0.22-0.35 m/kyr (Suzuki et al., 2013) based on tephrochronology obtained in the Aizu Basin to the south of the Yonezawa Basin recently. This deposition rate is generally reconciling rate if it is assumed that deposition rate of the Yonezawa Basin floor depends on the activity of the Yonezawa Basin Western Margin Fault which slip rate is 0.4-0.5 m/kyr.

Keywords: Yonezawa basin, Underground geology, tephra, Late Quaternary, Boring core