

Early Palaeolithic stratigraphy of around the Kanedori Site, Northern Honshu Island, Japan

Atsushi KURODA¹ / Hiroaki KOMUKAI² / Yoshio TAKEDA³ / Kyouich KIKUCHI⁴

(¹Tono City Board of Education / ²Otsuchi Town Board of Education /

³Japanese Archaeological Association / ⁴Iwate Prefectural University)

Introduction

While it is still unclear what kind of cultural situation was there, certainly there exist Early Palaeolithic assemblages in Japanese Archipelago. The Kanedori site is one of them. This site was discovered by Yoshio TAKEDA in 1984. The first investigation was held by the Kanedori Excavation Group led by Kyoichi KIKUCHI from July 26 1985 to March 31 1986 (Kikuchi 1986). It was revealed that the site contains artifacts dating the Early Palaeolithic Period. After the Fujimura Scandal in 2000, the municipal Board of Education conducted the second and the third investigations in 2003 and 2004 (Kuroda 2005). These investigations proved the Early Palaeolithic status of the site. We had reported about Kanedori site in some international conferences in recent years (SEAA2014, APA2014, INQUA2015). Moreover, we continue analysis of materials and explore around Kanedori site. In 2008 and 2015, we had several trial pits on a Koyappatake site 800m north of Kanedori site and Okawame site on the east bank of the Yuya River opposite to Kanedori site. In this presentation, we report the results of these investigations and re-examine stratigraphy of the Kanedori site. In addition, the Early Paleolithic in this poster corresponds to pre-Upper Palaeolithic.

Location

Kanedori site is located in Tono City, in Iwate Prefecture, in northern Honshu Island, Japan (Fig.1). This site is on the Hizume-Kesenuma Tectonic Line, in the middle part of the Kitakami Highlands (Fig.2). To the west of the Kitakami River is the Ou Mountain Range, which forms the backbone of Northern Honshu. There are several volcanos in the Ou Mountains that sent out numerous tephra falls during the Pleistocene. The tephra deposits are most useful for age estimation of the Paleolithic assemblages. This site is located in a remnant of the middle terrace of the Yuya River, in the southwestern part of the Kitakami Highlands. The High, Middle, and Low terraces along the Yuya and Tassobe Rivers can be correlated with riverine terraces of the Sarugaishi and Kitakami Rivers, in terms of the relative heights from the river beds and the sea level (Fig.4). It should be noted that the Middle terrace of the Yuya River, on which this site is located, can clearly be correlated with the Murasakino · Isawa Terrace of the Kitakami River, with reference to the horizon marker tephra, the Yakeishi-Murasakino Pumice, Or "Yk-MP." This site is on the tongue-shaped terrace which extends from Mt. Hiryu on the west bank of the Yuya River. It is 242m above sea level and about 20m from the river bed. The terrace remnant hill on which the site is located is separated from the Mt. Hiryu. by the National Route 396. This Route runs through a shallow valley, which marks the boundary between different kinds of bedrock: serpentine on the west side of the Route, and argillite on the east side.

Stratigraphy of Kanedori site

The site stratigraphy is as follows: Stratum 1 is the present and old surface soils; Strata 2, 3a, 3b, and 3c are soft loam of volcanic origin; Stratum 3d is pumice; Strata 4a, 4b, and 4c are clay; and Stratum 5 is terrace gravel (Fig.3).

Of these, cultural remains were found in the following strata: the lower part of Stratum 1 contained Late Yayoi to Final Jomon remains, and the upper part of Stratum 2 contained Early Jomon materials. Early Paleolithic materials were found in Strata 3b, 3c, which we call Cultural Layer III, and Strata 4a and 4b, called Cultural Layer IV. Each stratum is separated by unconformity, and slight unconformity exists between sub-strata. Cracks are present in the lower part of Stratum 4a and the upper part of 4b.

The following tephra have been identified: the tephra named Iw-Od dated 50-35 ka in Stratum 3b; Yk-M (78-68 ka) in Stratum 3d, and, from the lower part of Stratum 4a, were extracted HJ-Kth (84 ka), Aso-4 (90-85 ka), Nr-N (90 ka), and Toya (115-112 ka).

Stratigraphy of around the Kanedori site

North part - Koyappatake site

Koyappatake site is on the High and Middle terrace west bank of Yuya River which is to 800m north of Kanedori site. This site is known as the dispersion ground of the Jomon artifacts. We had five trial pits to confirm stratigraphy of around the Kanedori site in September, 2008.

Stratigraphy of Trench 3 in the Middle terrace is as follows: Stratum 1 is the present surface soil that contained To-Of (32 ka) in lowest part; Stratum 2 is clayish cross lamina; Stratum 3 is clayish loam that contained HJ-Kth (84 ka) in lower part, cracks present on the top; Stratum 4 is Sabulosity silt that has cracks.

East part - Okawame site

Okawame site is on the Middle terrace east bank of Yuya River which is to 700m east of Kanedori site. This site is known as the hunting ground of the Jomon Period. We had three trial pits to confirm stratigraphy of around the Kanedori site in November, 2015.

Stratigraphy of Trench 3 is as follows: Stratum 1 is the present surface soil; Stratum 2 is pumice (Yk-MP 78-68 ka); Stratum 3 is clay.

In other trench, disappeared the Stratum2 by cultivation. In addition, one scraper was found in the lowest part of Stratum 1 in Trench 1 (Fig.6).

Conclusions

It is said that in ancient time the Tassobe region around Kanedori site was a lake. This fact was clearly proved by the existence of clay strata, which was formed as the lake sediments, found in each trial pits in the Middle terrace (Fig.6). The cracks on Kanedori Stratum 4a, 4b and Koyappatake Stratum 4 show the period of becoming dry. In addition, it is likely the Hizume-Kesenuma Tectonic Line where the Kanedori site is located was main road of large terrestrial mammals. It might be inferred from these things that Kanedori site was camping site of archaic humans hunting large mammals which gathered in the Palaeo-Tassobe lake shore (Fig.5). Further research on Palaeolithic site around the Palaeo-Tassobe lake shore would clarify the Early Palaeolithic cultural situation in Japanese Archipelago.

Acknowledgments

We would like to thank Professor Masatoshi SAGAWA at Tohoku Gakuin University for generously provided advice on the site. We also thank Takumi MURATA and Chiaki NUKAMORI for their having helped with translation of this poster.

References

- Kikuchi, K. (Ed.) (1986). Kanedori site : excavation report. Miyamori Board of Education (in Japanese)
- Kikuchi, K. (1996). Paleolithic sites in Kitakami Lowland. Annual report of Japanese archeology. Japanese Archeological Association.
- Danhara, T. (2002). Preliminary report of tephra analysis in the Kanedori site. Kyoto Fission-Track Co., Ltd. (unpublished).
- Machida, H. & Arai, F. (2003). New Atlas of Tephra in and around Japan. University of Tokyo Press, p. 148 (in Japanese).
- Kikuchi, K. & Nakamura, Y. (2004). The characteristic of the exhumation situation and significance of the abrasion degree study in the Iwate Kanedori site. Abstracts of the 70th meeting of Japanese archeological association. (In Japanese).
- Kuroda, A. (Ed.) (2005). Kanedori site: 2nd and 3rd excavation report. Miyamori Board of Education (in Japanese).
- Soda, T. (2005). Sediment and tephra at the Kanedori site. The report of the second and third excavations of the Kanedori site ; 2nd and 3rd excavation report (pp. 47-60). Miyamori Board of Education (in Japanese).
- Yagi, H. (2005). Study of the volcanic ashes stratigraphy about the sedimentation generation of the Kanedori site 4a layer. The report of the second and third excavations of the Kanedori site ; 2nd and 3rd excavation report (pp. 47-60). Miyamori Board of Education (in Japanese).
- Watanabe, M., Danhara, T., Fujiwara, O. (2005). Alluvial fan terraces in Kitakami Lowland. Abstracts of spring meeting of Japanese geographical society, 111 (in Japanese).

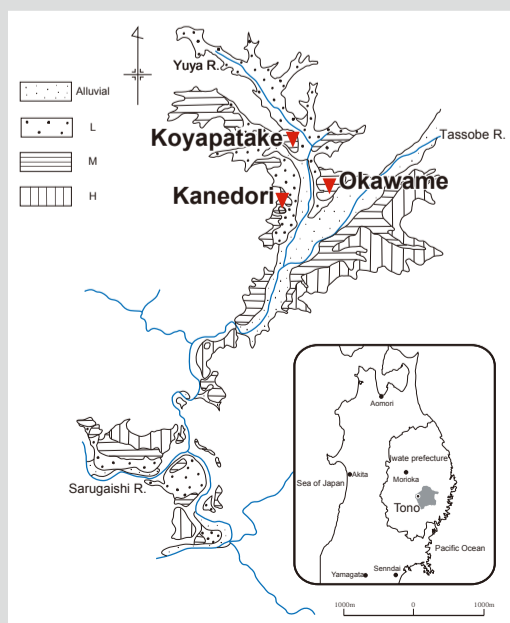


Fig.4 Geomorphological map in around Kanedori

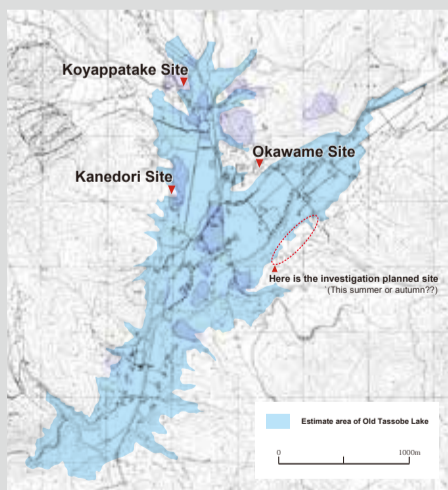


Fig.5 Estimate area map of Palaeo-Tassobe Lake

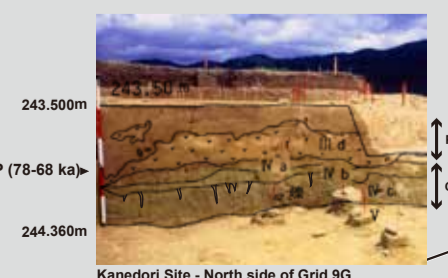


Fig.6 Stratigraphy of around the Kanedori site (after Digital Globe 2015)



Fig.1 Earlier Paleolithic sites and late Quaternary widespread tephra in Japanese Archipelago (after Machida, Arai 2003)

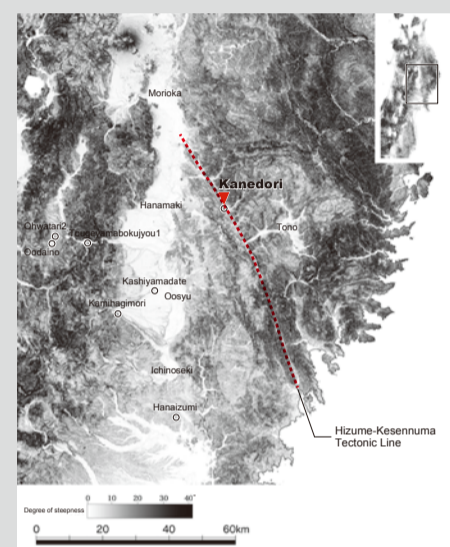


Fig.2 Map of referred Paleolithic sites in Iwate. Yokoyama Laboratory, Faculty of Engineering, Iwate University

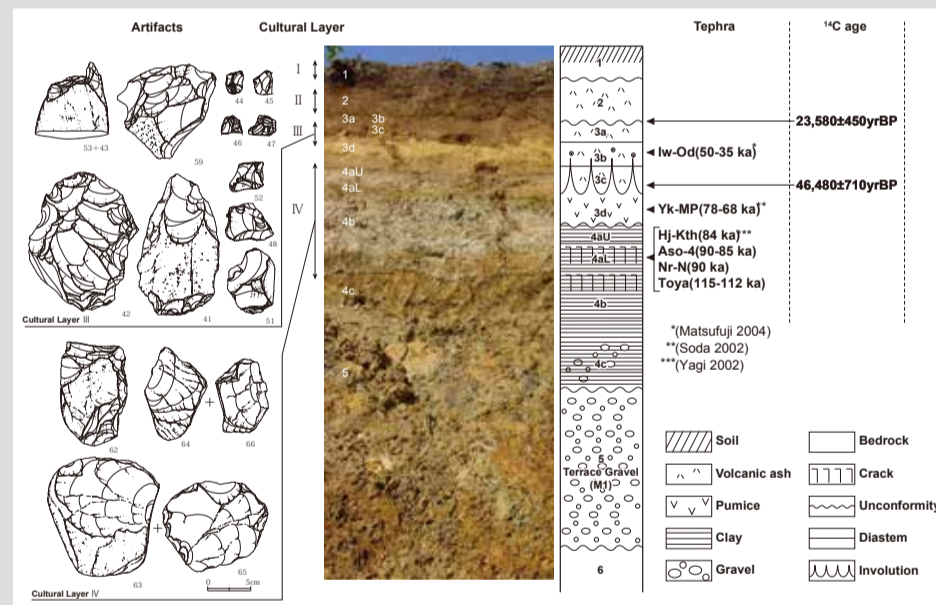


Fig.3 Cultural Layers, tephra and ¹⁴C age of Kanedori Site

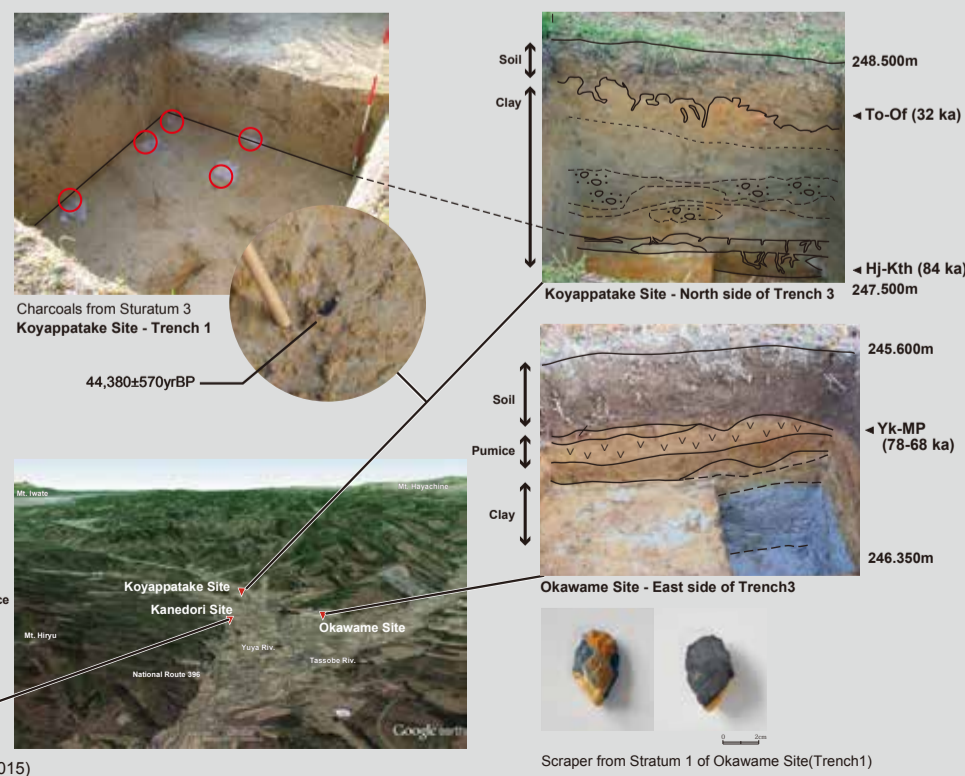


Fig.6 Stratigraphy of around the Kanedori site (after Digital Globe 2015)