

The Ulaanbaatar 2014 papers

Panel: Starting Over Again: the Early Palaeolithic Research in Japan Today (Fumiko IKAWA-SMITH and SATŌ Hiroyuki)

## INVESTIGATION OF THE KANEDORI SITE IN IWATE PREFECTURE, NORTHERN HONSHŪ

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### INTRODUCTION

When did the humans arrive in the Japanese archipelago? This simple question is a large and difficult study subject in Japanese archaeology. In 1946, AIZAWA Tadahiro 相沢忠洋 found the Iwajuku 岩宿 site and proved the existence of the Late Palaeolithic in Japan. SERIZAWA Chōsuke 芹沢長介 of Tōhoku 東北 University tried to obtain evidence for the Early Palaeolithic in the Japanese archipelago. It seemed that a few disciples of SERIZAWA proved the existence of Early Palaeolithic remains by recovering lithic tools from a 40,000 year-old layer of the Zazaragi 座散乱木 site during the third excavation in 1981. However, it was disclosed in 2000 that the so-called evidence had been forged, and the study in the Early Palaeolithic age had to start all over again.

The Kanedori 金取 site was discovered by TAKEDA Yoshio in 1984 and the first excavation took place in 1985. In those days, Kanedori attracted attention as the northernmost Early Palaeolithic site in Japan. After the 2000 Fujimura 藤村 Scandal, with the deletion of forged Early Palaeolithic sites, the Kanedori site came into the spotlight again as the oldest in Japan (Fig. 1). Therefore, the second and third excavations were conducted in 2003 and 2004. In these

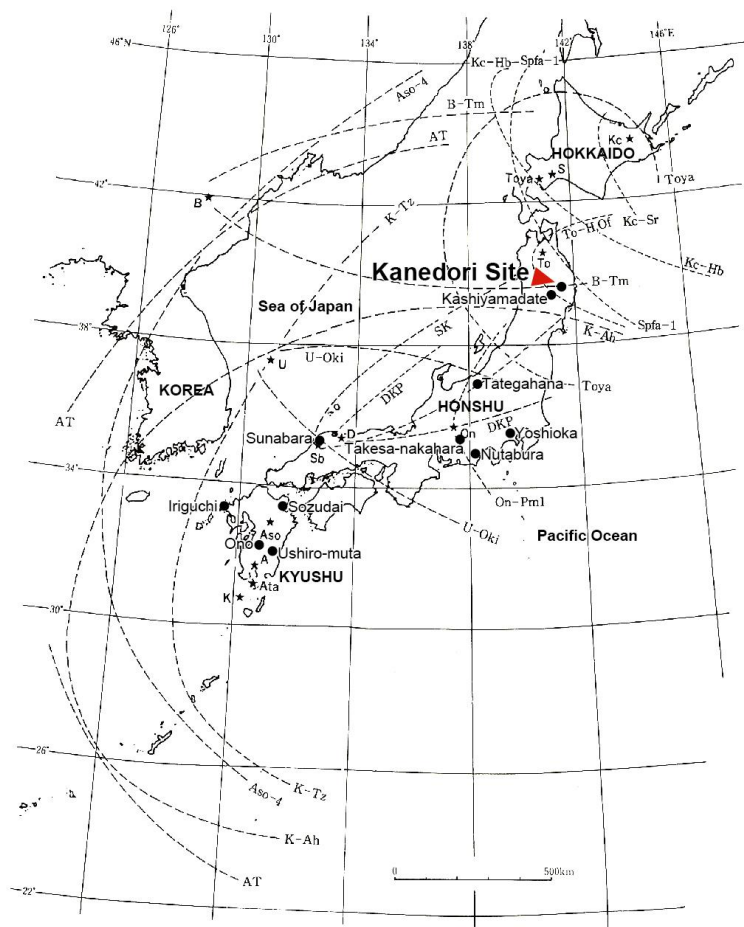


Fig. 1: Earlier Palaeolithic sites and late Quaternary widespread tephra in the Japanese archipelago (after MACHIDA and ARAI 2003).

excavations, different methods of age determination were employed, which revealed that the site contained materials dating to the Middle Palaeolithic period. This paper presents a summary of the results of all the excavations conducted at the Kanedori site.

#### LOCATION



Fig. 2: Map of referred Palaeolithic sites in Iwate (Yokoyama Laboratory, Faculty of Engineering, Iwate University).

The Kanedori site is located in Tōno City 遠野[市], in Iwate Prefecture 岩手[県], in northern Honshū 本州 (Fig. 2). The site is in the middle part of the Kitakami Highlands 北上[高地], to the west of the Kitakami River 北上[川]. There are many Palaeolithic sites in the area. To the east of the Kitakami River is the Ōu Mountain Range 奥羽[山脈], which forms the backbone of northern Honshū. There are several volcanos in the Ōu Mountains that sent out numerous tephra falls during the Pleistocene (Fig. 3). The tephra deposits are most useful for age estimation of the Palaeolithic assemblages. The site is located in a remnant of the middle terrace of the Yuya River 湯屋[川], in the southwestern part of the Kitakami Highlands. The high, middle, and low terraces along the Yuya and Tassobe Rivers 達首部[川] can be correlated with riverine terraces of the Saruga'ishi 猿ヶ石[川] and Kitakami Rivers, in terms of the relative heights from the river beds and from the sea level (Fig. 4). It should be noted that the middle terrace of the Yuya River, on which the site is located, can clearly be correlated with the Murasakino 村崎野・Isawa 胆沢 terrace of the Kitakami River, with refer-

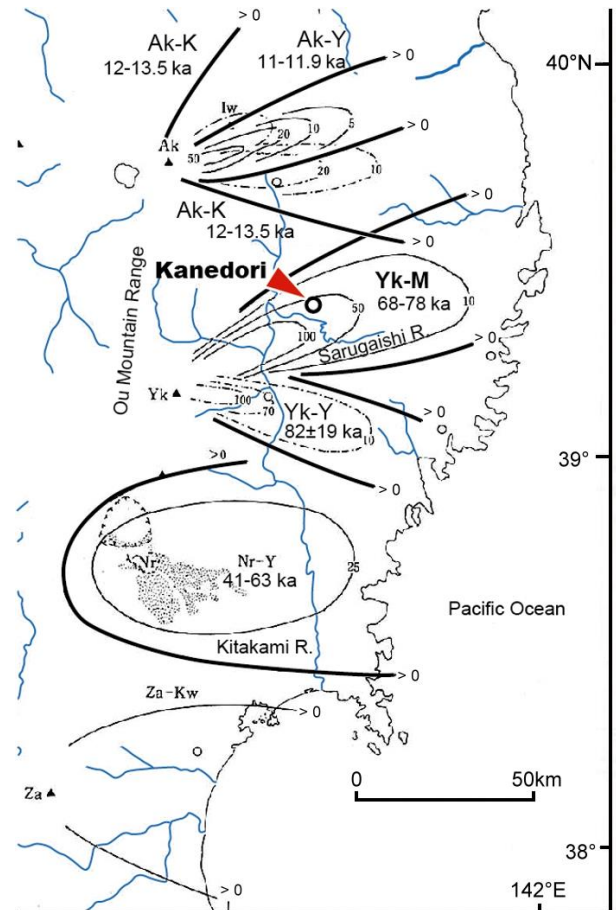


Fig. 3: Isopach map of Yk-M (after MACHIDA and ARAI 2003).

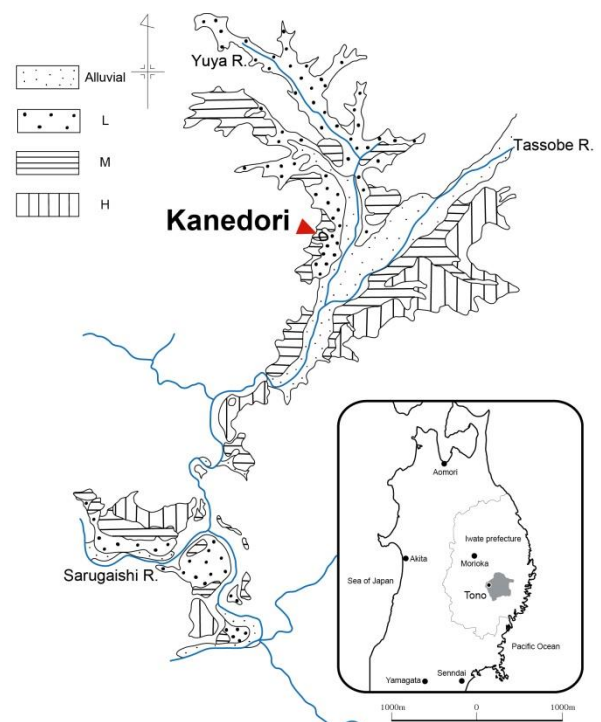


Fig. 4: Geomorphological map of the Kanedori area (after KIKUCHI 1986).

ence to the horizon marker tephra, the Yake'ishi-Murasakino 焼石村崎野 Pumice, or “Yk-M”. The site is on the tongue-shaped terrace which extends from Hiryū Mt. 飛龍[山] on the west bank of the Yuya River. It is at 242 m above sea level, and at about 20 m from the river bed. The terrace remnant hill on which the site is located is separated from the Hiryū Mt. by the National Highway 396 (Fig. 5). The highway runs through a shallow valley, which marks the boundary between different kinds of bedrock: serpentine on the west side of the highway, and argillite on the east side.

RESEARCH HISTORY AND METHODS

The site was discovered in 1984 by TAKEDA Yoshio. It was investigated by the Kanedori Excavation Group, led by KIKUCHI Kyōichi. The first investigation, which took place from July 26, 1985 to March 31, 1986, covered some 300 square meters of the site. It revealed that the site contained materials dating to the Middle Palaeolithic period. Because of the Fujimura Scandal of 2000, the municipal Board of Education conducted the second and the third investigations, for one month each, in 2003 and 2004. The investigations confirmed the Middle Palaeolithic status of the site (Fig. 6).

The investigation was conducted by horizontal excavation of lamina unit in each layer. Artefacts were recorded 3-dimensionally, and fabric measurement was conducted. Of the scientific methods of investigation, the analyses of physico-chemical properties of tephra, with the view to identifying its source and the eruption date, were applied. Also we took radiocarbon and OSL dating, phytolith analyses, geological research, and lithological analyses of the lithic artefacts.



Fig. 5: Distant view of the site (after Digital Globe 2015).

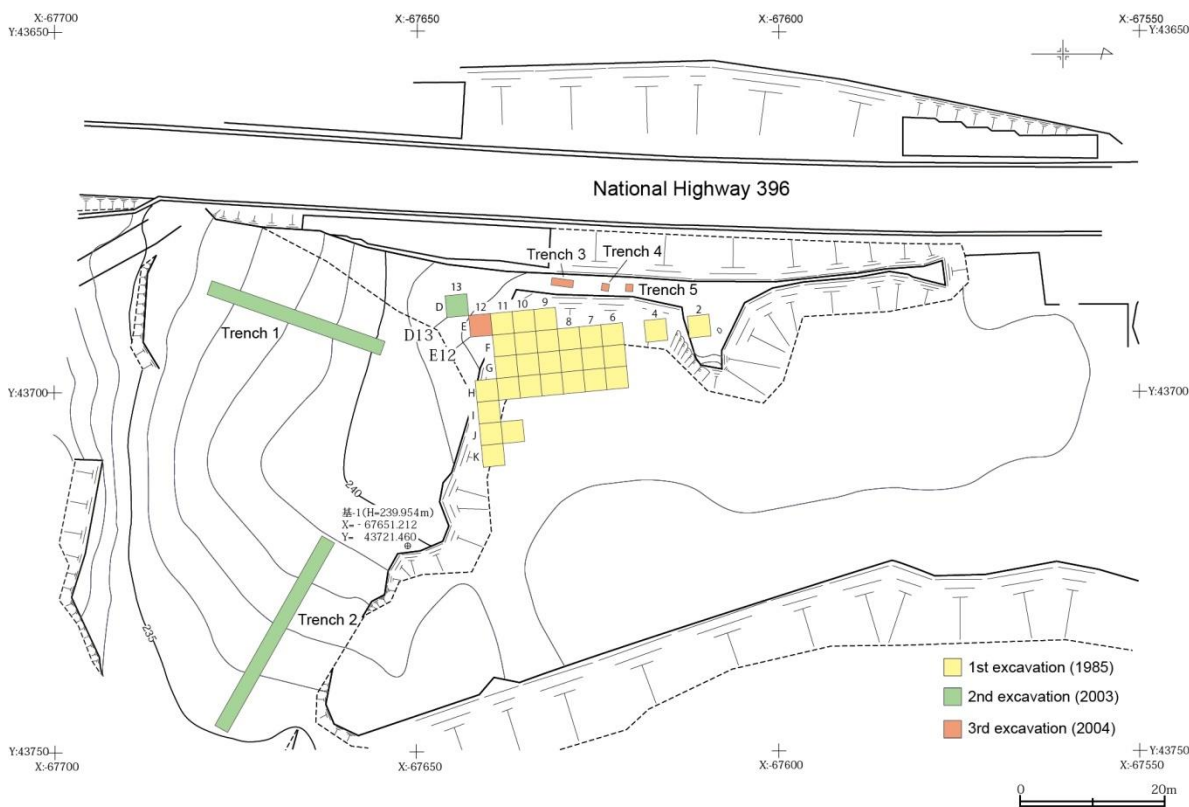


Fig. 6: Detailed plan of the excavation area (graph by KURODA Atsushi).

STRATIGRAPHY

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. 7). Of these, cultural remains were found in the following strata: the lower part of Stratum 1 con-

tained Late Yayoi 弥生 to Final Jōmon 縄文 remains, and the upper part of Stratum 2 contained Early Jōmon materials. Middle Palaeolithic 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 (Fig. 7, Fig. 8): the tephra named Iw-Od dated 35,000 to 50,000 years ago in Stratum 3b; Yk-M (68,000 to 78,000 years ago) in Stratum 3d, and, from the lower part of Stratum 4a, were extracted Hj-Kth (84,000 years ago), Aso-4 (85,000 to 90,000 years ago), Nr-N (90,000 years ago), and Toya (112,000 to 115,000 years ago).

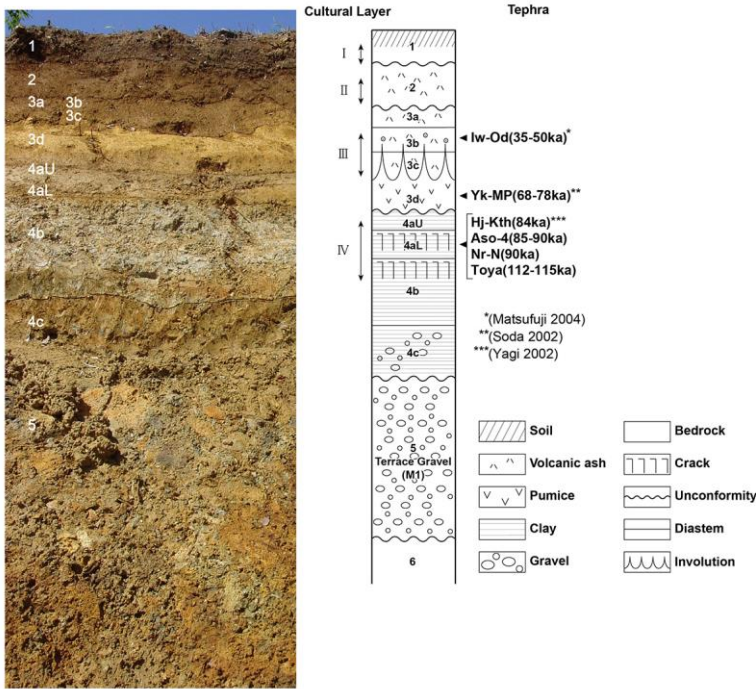


Fig. 7: Stratigraphy of Kanedori (photo by KURODA Atsushi).

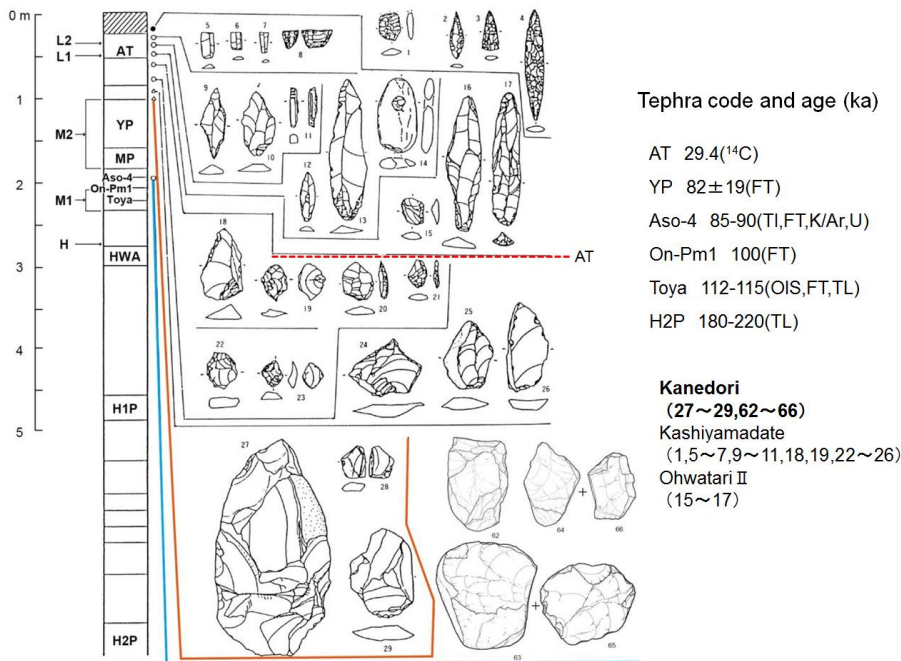


Fig. 8: Tephra and stratification of Palaeolithic sites in around Kitakami River (after KIKUCHI 1996).

ARTEFACTS

In Cultural Layer III, we noted an area of artefact-concentration, named Unit A, where we found large tools in hornfels and smaller tools made of siliceous shale, as well as many carbonized remains. There is also a more loosely-defined cluster of smaller artefacts in the southwest (Fig. 9). We recovered 40 items from Cultural Layer III, which consist of one axe-shaped tool

(No. 41), one discoidal core (No. 42) (Fig. 11), a chopper (No. 43) (Fig. 12), scrapers (Nos. 44, 45, 46, 49, and 50), a wedge-shaped tool (No. 47), flakes (Nos. 48, 51-59) and 24 chips (Fig. 13, Fig. 14). By the way, the axe-shaped tool (No. 41) was what led to the site discovery by TAKEDA Yoshio and the core (No. 42) was collected by the landowner and its imprint on the ground was subsequently confirmed.

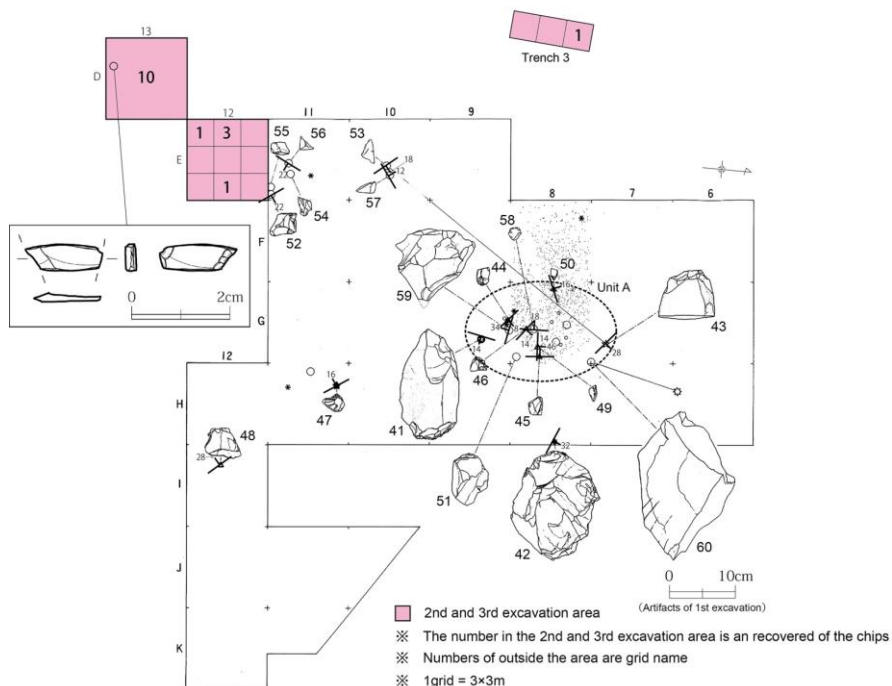


Fig. 9: Distribution map of artefacts in Cultural Layer III (after KIKUCHI 1986).

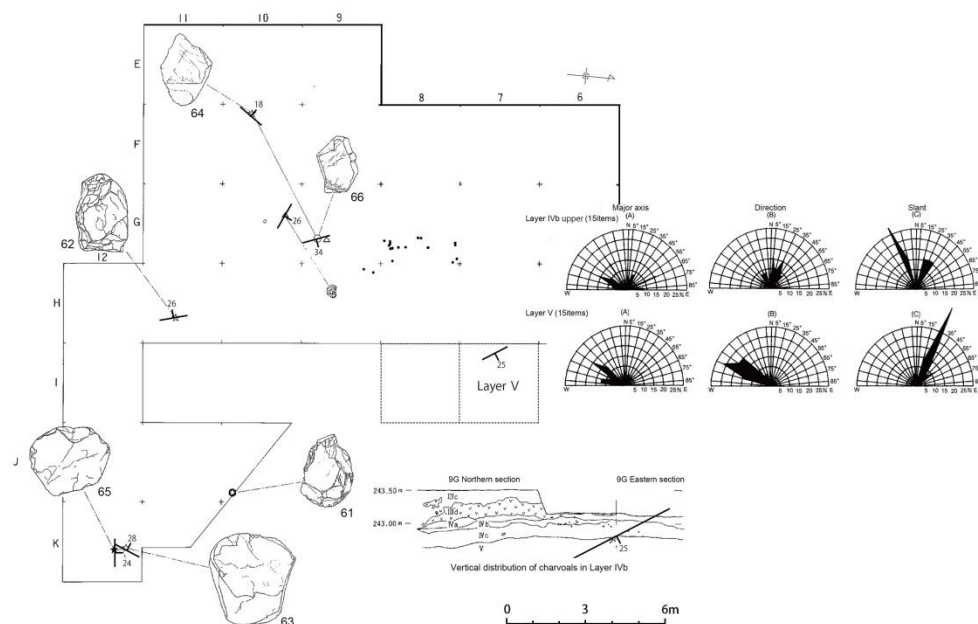


Fig. 10: Distribution map of artefacts in Cultural Layer IV and rose diagram of Cultural Layer IV and Natural Layer V (after KIKUCHI 1986) (after KIKUCHI and NAKAMURA 2004).



Fig. 11: Artefacts from Kanedori site 1 (Cultural Layer III) (photo by KURODA Atsushi).



Fig. 12: Artefacts from Kanedori site 2 (Cultural Layer III) (photo by KURODA Atsushi).



Fig. 13: Artefacts from Kanedori site 3 (Cultural Layer III) (photo by KURODA Atsushi).

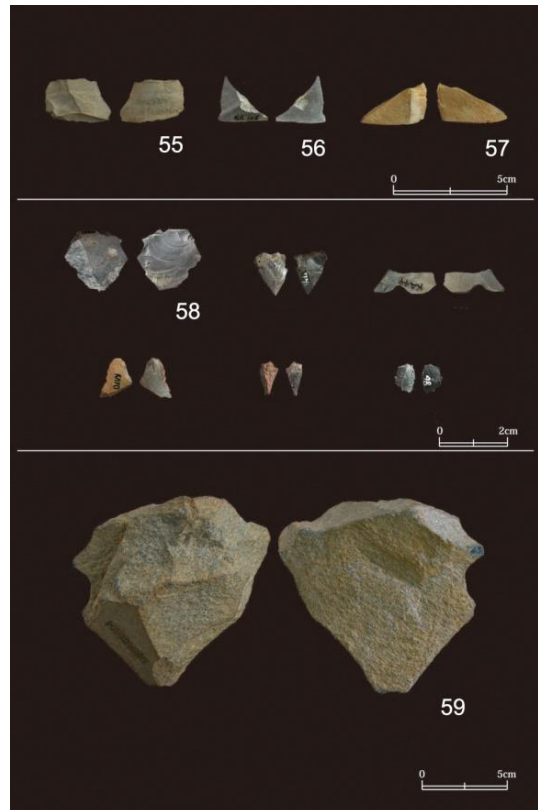


Fig. 14: Artefacts from Kanedori site 4 (Cultural Layer III) (photo by KURODA Atsushi).

AGE OF THE SITE

Volcanic glass of Iw-Od tephra, dated 35,000 to 50,000 years ago, was found in the upper part of Cultural Layer III (Fig. 16), and the Yk-M tephra, dated 68,000 to 78,000 years ago, is deposited in the lower part of Cultural Layer III. Thus, the age of Culture Layer III would be between 35,000 and 68,000 years ago. This is consistent with the radiocarbon date of 46,480±710 BP obtained on a sample from the lower part of Culture Layer III. The age of Culture Layer IV is estimated to be between 68,000 years ago and 85,000 years ago, because of the presence of the Yk-M tephra deposits just above the Culture Layer IV, and because volcanic glass from Aso-4, dated 85,000 years ago, and other tephra have been found in the Culture Layer itself.

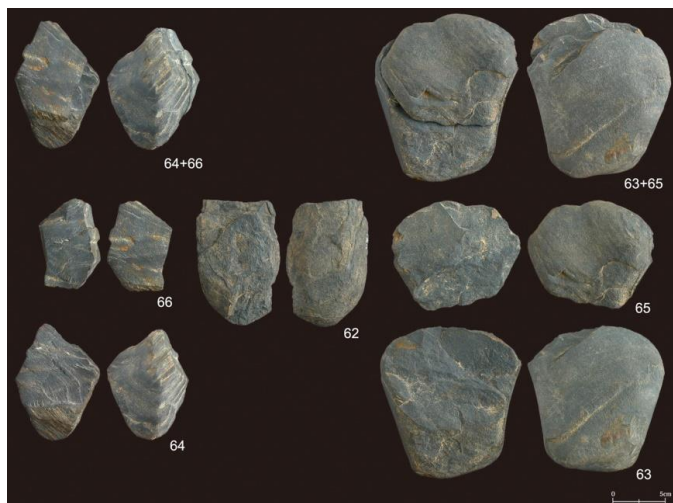


Fig. 15: Artefacts from Kanedori site 5 (Cultural Layer IV) (photo by KURODA Atsushi).

No artefact concentration area was found in Cultural Layer IV (Fig. 10). The assemblage consists of an oval artefact (No. 61), choppers (Nos. 62 and 64), a chopping tool (No. 63), scrapers (Nos. 67 and 71), and flakes (Nos. 65 and 66), for the total of eight pieces (Fig. 15). Nos. 64-66 and 63-65 are refitting. They are made of a kind of hornfels that contains andalusite and garnet. This kind of hornfels is not included in Terrace Gravel but it can be gathered in a riverbed of the Tassobe River.

CONCLUSIONS

Culture Layer III is estimated to date between 35,000 and 68,000 years ago, on the basis of tephrochronology and the radiocarbon method. Forty artefacts and numerous carbonized material were recovered from this layer. The age of Culture Layer IV is estimated to be between 68,000 and 84,000 years ago, on the basis of the tephra analyses. Eight artefacts and carbonized material were recovered from this Layer. The Culture Layer III assemblage consists of large tools made of hornfels and small artefacts in siliceous shale.

Absence of the hand-axe and the pick, which are often found in early assemblages of China and the Korean peninsula, seems to suggest unique composition of Palaeolithic assemblages in the Japanese archipelago. The Kanedori site, which can be firmly dated by means of tephrochronology and geochronology, is a rare example of Middle Palaeolithic site in Japan.

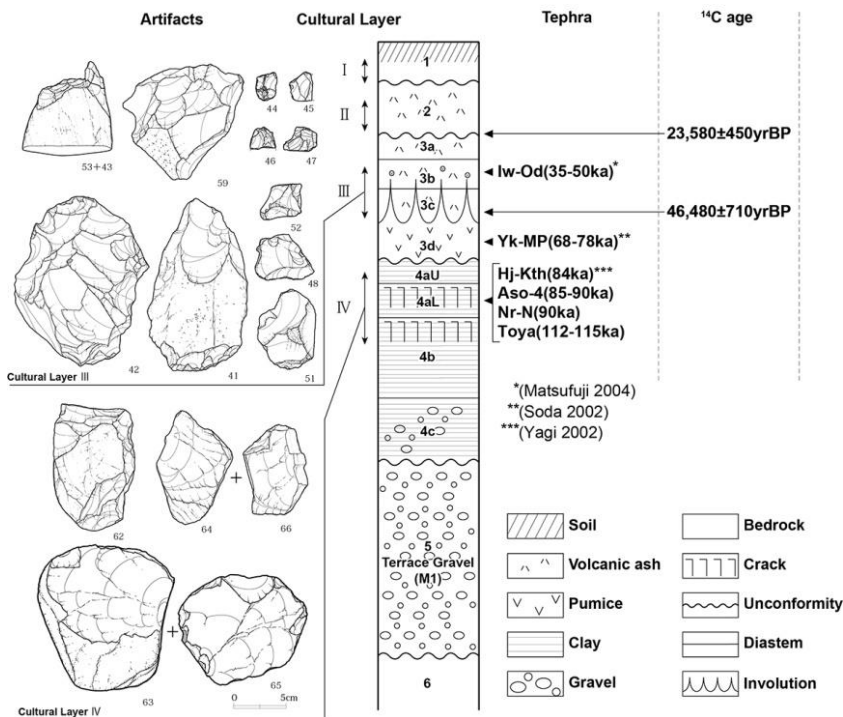


Fig. 16: Cultural Layers, tephra and 14C age of Kanedori Site (photo by KURODA Atsushi).

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