

[Abstract]

**Studies of the Kamikuroiwa Site in Ehime Prefecture, Japan**

Bulletin of the National Museum of Japanese History, Vol. 154, September, 2009

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## Overview

### 1. Preface

The Kamikuroiwa site is a rock shelter site of the Incipient to Earliest Jomon Period located among the mountains of Kumakogen-cho of Ehime prefecture on the island of Shikoku in western Japan. It was discovered in May 1961 by the owners of the land, father and son Wataru and Yoshiteru Takeguchi, and there were five excavations between October 1961 and October 1970, conducted by Teruya Esaka (Faculty of Letters, Keio University), Sakae Nishida (Faculty of Education, Ehime University), Kenji Okamoto (Kochi Women's University), and Tamotsu Ogata, Iwataro Morimoto, and Takahiko Ogata (Faculty of Medicine, Niigata University).

The items excavated included large amounts of potteries and stone implements, and the human-made relics are stored at the Archeology Department of Keio University, the Museum of Ehime History and Culture, and the National Museum of Japanese History (Rekihaku), while the human skeletal remains are stored at the Faculty of Medicine, Niigata University. The site has been designated a National Historic Site. The most noteworthy materials among them are the oldest Jomon pottery and stone implements, including pointed stoneware, from the Incipient Jomon Period, a stone "Venus," many groups of human bones from the Earliest Jomon Period, a human hip pierced by a pointed bone implement, and, among the animal bones found there, the oldest bones of a domestic dog found in Japan.

Despite Kamikuroiwa being such an important site with important relics, 40 years passed without any detailed reports to the academic world. For that reason, persons who had not taken part in the excavations at that time gathered together over a period of four years from 2005 to 2008, mostly at Rekihaku, to catalogue and research the excavated artifacts and publish reports under the auspices of the museum. The following persons had a hand in the writing of these reports. (Note: Titles and affiliations as at March 2009.)

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## 2. The Site

The rock shelter is located at an elevation of 420 meters. It is a small-scale site, eroded from a rock face of coal-bearing rock by the upper reaches of the Kuma River. Facing southwest, it is 9 meters wide, 4 meters high, and 2 meters deep. Artifacts have accumulated to a depth of 2 meters inside the rock shelter.

The authenticated materials that allow us to confirm the use of the Kamikuroiwa rock shelter are ridge-patterned earthenware from Layer IX. The shelter was used continuously from that time until the *Kofun* Tumulus Period. The order of the layers and their corrected Carbon 14 datings are as follows: (The absolute ages are arrived at through calibration of the Carbon 14 dates, and classifications of vegetation are based on the calibrated dates, matched with European standards.)

Layer I: Kofun Period, Hajiki pottery

Layer II: Late to Latest Jomon Period, about 4,000 years BP, Sub-Atlantic Period, warm period

Layer III: Beginning of Early Jomon Period, Todoroki-type pottery, about 6,000 years BP, Atlantic Period, warm period

Layer IV: Black earth layer, Mid-Earlier Jomon Period, cord-patterned pottery, about 10,000 years BP, Boreal Period, warm period

Layer V: Layer of coal rock breccia, about the same period as Layer IX

Layer VI: Black earth layer, Late Incipient Jomon, unmarked pottery, about 12,000 years BP, Younger Dryas Period, long cold period

Layer VII: Layer of broken pebbles, about the same period as Layer IX

Layer VIII: Yellow-brown earth layer, about the same period as Layer IX

Layer IX: Alternating layers of brown clay and black earth, Early Incipient Jomon, ridge-patterned pottery, about 14,500 years BP, Bölling Period, brief warm period

Layer X: Yellow brown clay layer

Layer XI: Layer of broken pebbles, blade flakes

Layer XII: Yellow brown clay layer

Layer XIII: Fallen rock layer

Layer XIV: Yellow-brown clay layer, Late Paleolithic, side blow flakes

In other words, the use of the Kamikuroiwa rock shelter occurred mostly in warm periods from the final Ice Age to the Post-Glacial Age, excluding the period of unmarked earthenware from Layer

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VI, which was a cold period. However, even though these were warm periods, winter temperatures fall sharply in inter-mountain areas, so it is quite likely that, whatever era., people did not use the rock shelter all year, but only from spring to autumn, descending to the plains in winter.

Not very many sites of the same era as Kamikuroiwa—Layers VI and IX—have been found along the shores of the Seto Inland Sea, nor have pointed stoneware and stone “Venus” figurines of the same shape as those from Kamikuroiwa been unearthed at any site on the plains along the Seto Inland Sea. The linear relief pattern earthenware from Kamikuroiwa Layer IX is distributed in an area extending from Chugoku and Shikoku to Kinki and the western part of the Tokai region. Since sites from this period have been found in the mountainous regions of Okayama, Hyogo, and Kochi prefectures, there is no doubt that many fine sites still lie buried in mountainous areas. However, sea levels during this period were about 30 meters lower than present levels, and the Seto Inland Sea was still an area of forests and grassy plains, so that the livable space of that time is buried under today’s plains and seabed. We must also consider that current land within a range of 10 meters above sea level to 10 meters below sea level was eroded and lost in the process of forming the Seto Inland Sea.

The Kamikuroiwa rock shelter faces the Kuma River, is the upper course of the Niyodo River, which empties into the Pacific in Kochi prefecture. Excavation of cowry, cone snail, abalone, cockle, clam, oyster and other marine shells demonstrates that the range of the people’s activities extended to the shores of the Pacific.

The living space under the Kamikuroiwa rock shelter was about 4 meters by 20 meters, or 80 square meters. It is unlikely that the population of the Kamikuroiwa group ever exceeded 15 persons.

### **3 . Stone Implements and Potteries**

The evolution of stone implements at the Kamikuroiwa rock shelter from leaf-shaped stone points to stone stemmed points to stone arrowheads is proved by the succession of strata, and there have been theories that posited the innovations that accompanied the change from spears to javelins to bows and arrows as an event of the Incipient Jomon Period. Our current reexamination of the excavated stone implements showed that there were more than 60 examples of stemmed points, fewer than 10 examples of leaf-shaped points, and two examples of arrowheads from Layer IX. Most of the leaf-shaped points items were used as scrapers or axes, or else they were mistaken for unfinished pointed tools or scrapers, meaning that the previous schema became untenable. Most of the animal remains are Japanese deer or wild boar, with no change between Layer IX and Layer IV. The Kamikuroiwa site dates back to the end of the Pleistocene Era, but no bones of Naumann’s elephant, a characteristic animal of the Pleistocene, are found either at this site or along the Seto Inland Sea.

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This was already the post-Pleistocene era of small and medium-sized animals. The fact that there is no stemmed points beginning in Layer VI, and only arrowheads is probably an indication of influences from other regions.

Among the animal bones excavated at Kamikuroiwa are those of a domestic dog, the oldest example of a domestic dog in the Japanese archipelago. The people who lived in the Kamikuroiwa rock shelter probably caught medium-sized and small animals such as deer and wild boars with spears, bows and arrows, and hunting dogs, and they probably lived by gathering plant-based foods, such as chestnuts, walnuts, and shoots and tubers of various plants.

The linear relief pattern pottery from Layer IX at Kamikuroiwa, namely, Kamikuroiwa-type pottery, is not found among chronologically parallel pottery forms in the Chugoku, Shikoku, or Kinki regions. Carefully dividing linear relief pattern pottery into 3 periods, Kamikuroiwa-type pottery is chronologically parallel with the second period. The calibrated Carbon 14 date is 14,500 years BP. Linear relief pattern pottery was made over an extremely long time span, from about 15,500 years BP to 13,800 years BP. One can see how rare sites from this period are.

The potteries excavated at Kamikuroiwa rock shelter can be classified into more than 10 pieces of linear relief pattern pottery, 5 pieces of unpatterned pottery, and 4 forms of cord-patterned pottery, so that we have no more than 20 pieces from any era, not even those with the most examples.

The amount of potteries excavated from any Incipient Jomon site is extremely small, and no more than 1 or 2 pieces are preserved from any given time. Pottery appeared in Japan at the end of the Pleistocene Period and goes back farther than the oldest part of the Dryas Period during the last Ice Age, and viewed in terms of the scarcity of pottery from the Incipient Period, this means that the ways the pottery was used when it first appeared and the ways it was used when it spread were different.

Siberia's Far East is one place in which the appearance of pottery goes back to the end of the Pleistocene, as in the Japanese archipelago. This has given rise to a theory that pottery was used to make fish oil. However, potteries from the earliest period is scarce in this region, too. It is probably best to assume that, as in the Japanese archipelago, pottery first appeared as a tool for special uses, and its range of use expanded later, so that large quantities of it were made for purposes such as manufacturing fish oil. Carbide adhesions have been found on even the oldest pottery, as proof that it was used for stewing and boiling, so it was certainly used for that purpose. If it was used only rarely to stew small amounts of substances, then this was not everyday cooking. Now that we have determined that pottery appeared during the last Ice Age and that little of it was used, we have to renew the search for some special uses during the initial period, perhaps for boiling medicinal herbs.

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#### 4. Stone Figurines

Thirteen examples of stone figurines, the so-called Kamikuroiwa “Venuses” have been found at the Kamikuroiwa rock shelter. They are from 3.6 to 6.3 cm in length, 1.3 to 3.8 cm in width, and from 3.4 to 7.5 mm thick, long, thin pieces made using a single round pebble of green schist or crystal schist, with lines incised in the hard rock. The upper part of the body has hair and breasts, and the lower body is decorated with lattice markings and sawtooth markings, with a representation of an anus on the back. On the other hand, some figurines have only the hair represented. The lattice pattern has been thought of as representing a grass apron, but with one horizontal line and several vertical lines, it may represent female genitals. No figures resembling the Kamikuroiwa Venuses have been found at other sites. It may be that most figurines were made of bone or tusk and people only rarely made them of stone.

Examples of incised pebbles from the early New Stone Age have been found on the Asian continent along seacoasts, including some that closely resembles the specimens from Kamikuroiwa. The line incisions at this site represent hair, so the Kamikuroiwa figurines may be descendants of the Old Stone Age Venuses of Eurasia. Many examples of these kinds of materials are buried on the Asian continent, and we are inclined to assume that the Kamikuroiwa stone figurines are elements that came from eastern Japan and have links to the Eurasian continent.

Some examples of Kamikuroiwa stone figurines have representations of breasts, and some do not. The latter are children, according to one theory, or males, according to another theory. However, if we array all the materials from the most complex representations to the simplest representations, we can confirm that the changes are slow and steady, and we see that even the figurines without breasts are Venuses that represent females.

Stone figurines have been excavated only from Layer IX, and after that, there are four examples of oval pebbles without line incisions from Layer VII. A rod-shaped pebble with lines incised has been excavated from Layer VI, and perforated cowry shells have been excavated from Layer IV. In Japan, the cowry goes by the alternate name of *koyasugai*, or “cowry shell,” and if we consider the fact that during the early modern period, women of the Ryukyu Islands clutched cowry shells during childbirth, we are inclined to interpret the stone figurines and cowry shells of Kamikuroiwa as amulets used in prayers for a safe delivery. The rock shelter may have been a place where women gave birth, and it may also have been used as a cemetery.

#### 5. Ornaments

Most of the ornaments at Kamikuroiwa were found near human bones in cord-patterned earthenware from the Earliest Jomon Period, and there is a strong possibility that they were once associated with the bones.

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These ornaments include round beads made of shells, necklaces of small beads or triangular shapes, rod-shaped earrings made of deer antler, bracelets made of boar tusks, round beads made of fish bones, small stone beads, and triangular stone pendants. All the shells at Kamikuroiwa are seashells, with a high percentage of *Strombus* snails, cone shells, and cowries. The scarcity of tooth tubular and small beads made of tusk shells may be due to the investigators not using methods for gathering very small remains. Nowadays, it is possible to gather cowries, cone shells, and *Strombus* snails on the west coast of Shikoku and Vernede's tusk in Tosa Bay, which indicates that water temperatures were warm.

The ornaments from Kamikuroiwa are valuable for uniquely and clearly showing the state of personal ornamentation at the beginning of the Jomon.

## 6. Human Bones

Human bones from 28 individuals have been excavated at Kamikuroiwa, all of them from the era of cord-patterned earthenware in the Earliest Jomon Period. This is the largest number of specimens from any single site that dates back to the Earliest Jomon Period. The 28 bodies include 11 adults (3 males and 8 females), and 17 children or adolescents. Eighty percent of the younger bodies are those of infants. This fact tells us about the circumstances of a time when birth and child rearing were extremely difficult.

Of these bodies, seven have been determined to be primary burials, and three have been reburied, while the others are partial skeletons. In addition to bones that may have been reburied, some may have been scattered. The frequency of reburial and conjoint burial is high among the Kamikuroiwa remains, and we can see quite a difference from the burial methods of later eras. In the nomadic lifestyles that they led before adopting settled lifestyles, people used this rock shelter as a dwelling place, but the reason that it was the site of so many burials is that the people established specific places, or, in other words, cemeteries. Even if we assume that people who died during their wanderings were buried where they died, the group must have eventually transported the bodies and reburied them.

The human bones include an example of a hipbone pierced by a pointed object made of bone. This bone was long considered to be that of a man who died from being accidentally stabbed with a spear while hunting. However, investigations have led us to determine that the bones are those of a woman who had given birth and that she was stabbed twice. It is probably that she was stabbed once after death, after which the spear was removed, she was stabbed again, and the spear was left in her. This was probably done as a spell to stab the evil spirits existing inside the dead woman and to implore them not to move.



## **7. Conclusion**

As described above, the Kamikuroiwa site is a rock shelter site from 14,500 to 9,000 years BP, or, from the Incipient to the Earliest Jomon Periods, from the end of the Pleistocene Period to the early post-Pleistocene Period, a time corresponding to the latest Palaeolithic and Mesolithic in Europe. This report clearly shows that it is one of Japan's major rock shelter sites, one that tells us a great deal about the nature of the lifestyle and culture of that period.

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