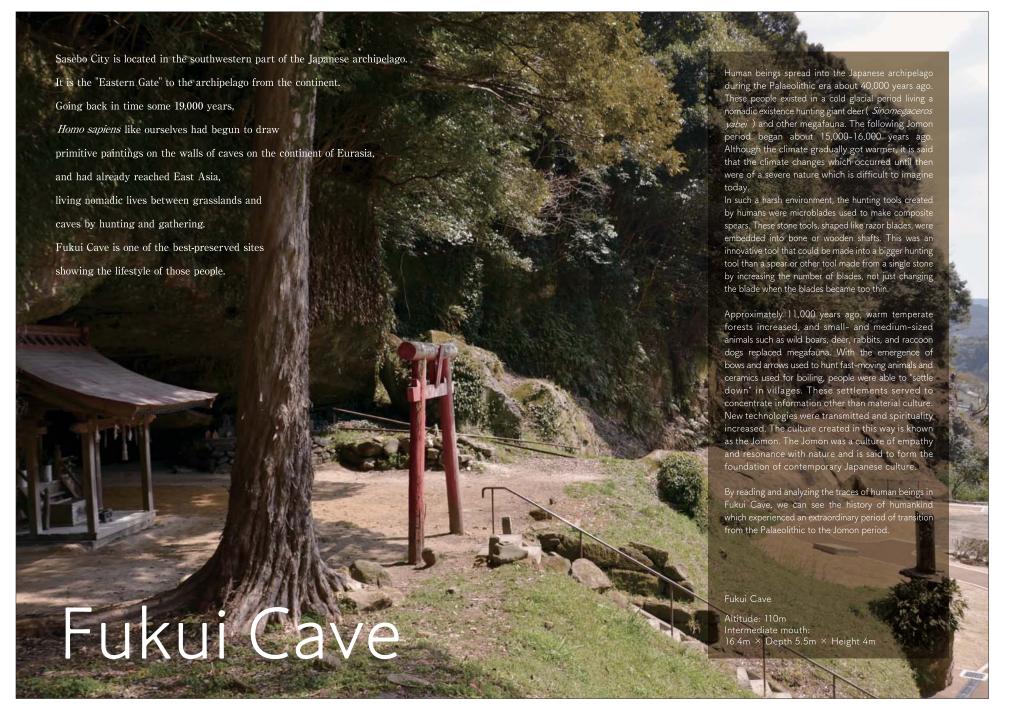


P2 P3



P4 P5

Fund take

From the Discovery of Fukui Cave to Historic Site Designation

Fukui cave is located in Fukui, Yoshii-cho, Sasebo City, near the border with Matsuura City. About 60 years ago, this cave was an important discovery considered to relate to the beginning of Japanese history.

In 1960, the Japanese Archeological Association, which emphasized the study of cave sites in order to explore the origins of the Japanese archipelago, established a research team headed by Chosuke Serizawa and Yoshimasa Kamaki who were researchers of the Palaeolithic and Jomon periods. Three excavations were conducted by this team until 1964.

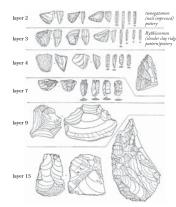
As a result of this work at Fukui cave, microblades and Jomon pottery, which were considered to be from the Palaeolithic era, were found from the same stratum, indicating that the pottery appeared in the microblade culture phase. This was an important achievement in the history of Japanese archaeology in showing the stratigraphic change from the Palaeolithic to the Jomon through excavation.

In addition, Serizawa and colleagues used radiocarbon dating, a scientific method that had only just been introduced at that time. The age of each layer was estimated, and the appearance of Jomon pottery, that is, the beginning of the Jomon period, was estimated to start about 12,700 years ago, a date which became a key marker for subsequent research.

In the excavations, the process by which Jomon pottery changes pattern and shape according to age was confirmed and *ryukisenmon* linear appliqué pottery was found to be the oldest pottery in Japan.



1960 Fukui cave State of the first survey



Excavation materials from 1960 to 1965 (Reprinted from Serizawa and Kamaki 1967)

In addition, the age of the lowermost layer of the cave was measured to be older than 32,000 years ago, the limit of the technology at that time. A bifacially-flaked stone tool made of andesite was excavated from the lowest layer, suggesting the presence of Lower Palaeolithic humans in the Japanese archipelago before the Upper Palaeolithic. Fukui cave was designated a national historic site in 1978 due to its scientific and historical value.

Junichi Matsuse and the Discovery of Fukui Cave

A monument of the reconstruction in 1936 is located near the shrine. At the time of this reconstruction, the ground of the cave was dug about 1 m for the foundations of the shrine building. From the soil, pottery and arrowheads were discovered by the local historian Junichi Matsuse, and the cave become known as an archaeological site.

After finding an arrowhead in a potato field when he was around twenty, Mr Matsuse became absorbed in archaeology. He was also deeply involved with painting & calligraphy, haiku, and Ebine orchids, and maintained friendships with both haiku poets and archaeologists. Through his highly-regarded achievements, he became the first honorary citizen of Yoshii town and was awarded the Order of the Sacred Treasure, Sixth Class, from the Japanese Government.

The Matsuse family tradition is transmitted through the three promises not to tell lies, not to be idle and not to steal.



Fature 12 12 1

Re-excavation and Site Maintenance

Merged with former Yoshii-cho in 2005, Sasebo city became a city with 31 cave sites, the largest number in Japan. Taking this opportunity, the city formulated a basic design to make Fukui cave useful for town development and as a regional symbol, and it was planned to maintain the historical site as a place of education. In addition to the preservation of the site, we planned the re-excavation of the cave for the purpose of museum display and education.

After several years of preparation, from February 2011 a re-excavation of one year and four months was realized for the first time in half a century.

The results of the excavation were used to carry out the subsequent maintenance design and work from 2016.

Through this excavation, prehistoric life in Fukui cave was clarified more clearly than half a century ago. There were two reasons for this.

First, new analyses based on recent technological advances made it possible to identify the animals and plants as well as the source and technology of the stone tools used at the site.

Second, by safely digging a 6m-deep trench, it was possible to use three-dimensional photogrammetry to review the stratigraphy and understand the formation of the cave. The long duration of the excavation also enabled discovery of hearths and the fabrication processes of stone tools. These successes built on previous research and excavation and the fact that, for half a century, local residents had carefully protected the historical site.



Prior to site maintenance: the two excavation trenches from the 1960s were exposed to the elements inside the fence. The trench walls had collapsed and the site had suffered damage.





Excavation: The first trench excavated in 1960 was investigated again.



After the site maintenance work: the trench was backfilled and the artifacts were removed. Only a shrine is enshrined in the cave. It maintains a landscape unique to Japan.

P6 Ρ7

From the Past to the Present of Fukui Cave.

The stratigraphic profile consisted of 15 layers covering about 9,000 years between 19,000 and 10,000 years ago. Approximately 70,000 artifacts, primarily microblades, were excavated. In addition, for the first time in Palaeolithic caves in Japan, a hearth and stone paving were found.

Unfortunately, the age of the beginning of Fukui cave (Layers 14 and 15) is unclear, but it seems that Palaeolithic people started to make tools in the cave at a time when sand was not being eroded or accumulated by the Fukui River. Actual occupation of the cave becomes clear at 19,000-18,000 years ago in Layers 12 and 13. We know that humans made a fire a little way back from the centre of the cave and that they made stone tools and ate meals around that fire.



the cave triggered the fall of the cave ceiling and accumulation of sand and earth inside the cave. It must have been difficult for humans to live in the cave at that time and we can imagine that they moved to a different location. Before long, however, similar remains of tool making and hearths can be recognized from around 17,000 years ago in Layers 7-9. It is thought that at this time the cave had a narrow entrance and deep chamber, and that water dripped from the back wall of the cave.

From around 16,200 years ago (Layer 4), the number of rocks falling from the ceiling gradually decreased and we know that humans cooked animals and ate meals at the center of the cave. A large number of microblades were produced between 14,000 and 16,000 years ago (Layers 2 and 3). In addition, pottery appeared for the first time. Since the teeth of wild boar have been found, these animals may have been cooked in the pottery and eaten.

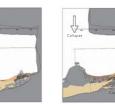
Layer 1, a stratum dating to 10,000 years ago, had been cut to make the foundations of the later shrine in the cave, and is poorly understood, but humans made spears made of andesite rock collected from the Fukui River and it is assumed that they hunted in the surrounding evergreen broadleaf forest. Following that, a few sherds of Yayoi period pottery have been found around Fukui Cave, but there are fewer signs of human settlement. It is believed that during the 16th century Warring States period, a shrine was set up to form the northeast (Kimon or unlucky direction) boundary of nearby Naoya castle and that this shrine was the predecessor of the current Fukui Inari shrine.



Layer 15: before 19,000 years ago Layer 12: 18,000 years ago



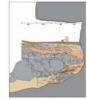
Layer 10: 17, 500 years ago Layers 7-9: 17,000 years ago Layer 4: 16, 200 years ago







Layer 11: 17,500 years ago (landslide)



Palaeolithic Cave People



1)L12 Hearth at Fukui Cave

Hearth (52cm wide x 60cm long) about 17,700 years ago (Layer 12). The hearth was located in what is thought to have been a dry and light place in the middle of the cave. It was found in a good state of preservation with the soil and stones clearly burnt red. The burnt stone is estimated to have received heat above about 300°C.

2L13 Stone Pavement at Fukui Cave

Stone pavement (more than 2m wide × 1.6m long) about 19.000 years ago (Layer 13) and found in the cave entrance, under the basalt. The flat surface of an angled basalt stone is on top.



Reconstruction based on 3D photogrammetry



P8 P9



P10 P11

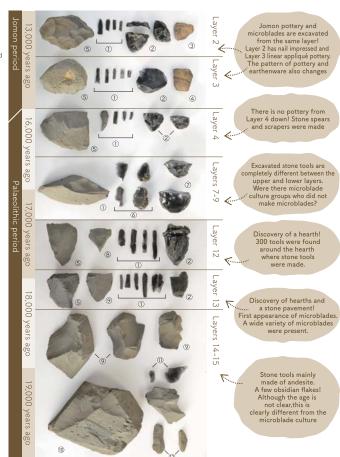
Artifacts from Fukui Cave

Fukui Cave is a cultural bridge that links the Palaeolithic and the Jomon cultures ~From the excavated artifacts of various layers, you can read the change of tools~

- ① microblade
- 2 microblade core
 3 tsumegatamon
 (crescent-impressed
- 4 ryūkisenmon (slender clayridges pattern)
- ⑤ scraper

pattern)

- 6 small blade
- 7 pebble core
- ® drill
- flakes
- (1) core
- 11) obsidian
- ② andesite



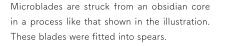
Remains from Trench 1

About 70,000 artifacts were excavated in Trench 1. It is possible that the total will reach 200,000 if the previously discovered artifacts are combined. By comparing stone tools and pottery for each layer, it is possible to decipher even minor changes over time and we can use this to study the technology and social structures of the prehistoric groups.

√ Various Excavated Artifacts ✓



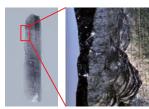






Discovery of two Palaeolithic microcores from Layer 12 about 18,000 years old. About 50 microblades were re-fitted to each core.

Animal Bones of the Incipient Jomon Period(about 13,000 years ago)





Wicroblade from Layer 2 Magnification with a microscope. Identification of possible use wear. Burnt animal bones from the same layer had cut marks.





The Jomon people used resources from both the land and the sea.



Mackerel tail bone

A tooth of a young wild boar

P12 P13

The Discovery of Plant Remains in Pottery

When a sherd of pottery excavated from the site was examined by CT scan, fibers were found in a hollow space. They derive a species of fern that had been kneaded into the clay.



Special Tools: Perforated Stone and Clay discs



One clay disc (diameter 65 mm x thickness 5.5 mm).

Two sandstone discs (diameter 110 mm x thickness 6.1 mm & diameter 80 mm x thickness 4.4 mm). Each has a hole in the center. It is thought that the linear appliqué clay disc was used as pottery and then reused as a secondary tool. One theory is that it was a decorative item such as a pendant or else a ritual tool worn on the head of the leader of the group. This type of clay artifact dating from the time of the earliest pottery is very rare in world prehistory.

Excavated in 1963 from Trench 2. (Photo: provided by Tohoku University)

Andesite: sources and tools



Standardized tools such as scrapers were made with the abundant lithic resources of the area.



Large quantities of andesite can be collected from the Fukui River flowing in front of Fukui Cave.

Living in prehistoric caves in Northwest Kyushu





Cave life in the Palaeolithic (18,000 years ago)

Cave life around the beginning of the Jomon period (16,000 years ago)

Excavation of Fukui cave shows the changes of cave life from the Palaeolithic about 19,000 years ago to the Jomon period about 10,000 years ago.

Unlike in Europe, Palaeolithic cave sites are rare in Japan. It is thought that most excavations do not dig through a fallen-rock layers to reach the Palaeolithic cultural layers, but it is also assumed that fixed living spaces were not suited to the nomadic lifestyle of the Palaeolithic people.

However, when the Palaeolithic era was coming to an end, humanity was forced to make new adaptations to climate change. In northwest Kyushu, which was has little flat land, the caves of the sandstone topography should have been attractive locations for humans. Fukui Cave, which was several meters larger than now, may have been a good place to make tools and talk about tomorrow's hunting while keeping warm by the fire. The excavation of Fukui Cave has made it possible for the first time to understand the Palaeolithic cave life in Japan.

In the Jomon period, the residential elements become even stronger. The number of microblades increased and pottery, which requires several processing stages, was manufactured. Fukui Cave is a key site to unravel the history of the emergence of earthenware, a revolutionary new tool in the human history. The importance of Fukui is further enhanced by its overlap with the nearby Senpukuji and Iwashita caves.



Cave life in the Initial Jomon period (10,000 years ago)

P14 P15

The Cave Sites of Sasebo \sim Japan's No. 1 City for Cave Archaeology \sim



2 Naoya Rock Shelter

◆Naoya, Yoshii-cho, Sasebo City

Palaeolithic (ca. 40, 000 years ago?), Incipient and Early Jomon Period (ca. 15,000 and 4,000 years ago), and Late Yayoi Period(ca. 1,800 years ago).

Located in the middle basin of the Fukui River, 74m above sea level Excavation was carried out by the cave site survey team in 1960. Excavations have been conducted intermittently since Sasebo City began a re-investigation programme in 2006.

Many materials have been found from the layers of the end of the Palaeolithic to the Jomon period showing the connections between this site and Fukui Cave. The lowest layer of this site has been dates to more than 40,000 years and stone tools made of andesite have been

This is a rock shelter which can be considered as an important site for future research on human history in Japan



Hashikawachi Cave (designated in 1989)

◆Hashikawachi, Yoshii-cho, Sasebo City

Initial to Final Jomon Period, Initial Yayoi Period (ca. 10,000-2,000 years ago).

The site is located at an altitude of 113m on the left bank of the middle basin of the Saza River, which flows in the north of Sasebo City. The site opens to the northeast side into a large cave with a frontage of 13m. The cave does not receive much sunlight but there is a spring for water nearby.

Excavation was conducted in 1970 by the Faculty of Medicine of Nagasaki University. The artifacts include pottery, lithics and bone and antler tools. A spatula-like object made of a deer tibia (leg bone) is a rare find. The cave was used primarily during the Initial Jomon



4 Iwayaguchi Rock 2nd Shelter

◆Sechibaru-cho, Sasebo City

Initial, Late and Final Jomon Period; Kofun Period (ca. 10,000, 4,000 and 1,500 years ago).

The site is located on the right bank of the middle Sasa River basin, which flows in the north of Sasebo City, at an altitude of 90m. The four caves are open facing the south side, and spring water is found in the vicinity. Excavation was conducted in 1966 by the Paleological Association of Japan

From the discovery of a fragment of a bronze mirror with a naikokamon of flower petal, it is thought that this is an example of the ritual use of caves during the Kofun period. In addition, a large number of flaked arrowheads made of Koshidake obsidian using the Suzuoke technique were found with pottery from the layer of the beginning of the Late Jomon. The excavated artifact are city designated cultural assets.

(5) City designated Daihikan Rock Shelter (designated in 1980)

◆Kosaka, Kosaza-cho, Sasebo City

Initial, Early and Late Jomon Period (ca. 10,000, 6,000 and 4,000 years ago).

The site is near the sea and located at an elevation of 20m in the hills looking southwest toward Usunoura. Excavation was carried out by the Sasebo Archaeology Research

From the Initial and Late Jomon Period, shells such as oysters and blood clams we found with ash, pottery and stone tools, and the rock shelter is considered to have been a base camp along the Saza River basin, Furthermore, one of the towering sandstone walls is engraved with the words 'Daihikan(the Deity of Mercy)' and is counted as one of the Hirado Hakkei scenic spots of the late Edo period. Currently, this area is being maintained as Daihikan park and has become a nationally designated scenic spot.



6 Ohashi Kannon (Ishibashi)

◆Yoshii-cho, Sasebo City

Late Edo Period (ca. 400 years ago).

This scenic spot is located on the right bank of the middle basin of Saza River, which flows in the north of Sasebo City, at an altitude of 120 m. It is a strange rocky terrain where the wall of the cave collapsed and a stone bridge was formed naturally. It is thought that the final topography of the cave was 30m long and 5 m wide, and that it was possible for people to come and go in the cave during the Edo period. Although there are no artifacts, the cave was introduced as "Ishibashi"or Stone Bridge, one of the eight Hirado Domain scenic spots established along the Hirado road in the late Edo period, and is now designated as a nationally designated scenic spot. The fern plant communities that flourish in the cave are nationally designated natural monuments.



National Senpukuji Cave (nationally designated in 1986)

◆Setogoshi 1 cho, Sasebo City

Final Palaeolithic Period, Incipient to Initial Jomon Period (ca. 16,000 to 10,000 years ago).

The site is located at an altitude of 89m on the left bank of the middle basin of the Ainoura River, which flows through the center of Sasebo City. Four caves are open facing the south side, and spring water is found in the vicinity. The cave was discovered by junior high school students in 1969, and a 10year-long excavation was conducted by a team headed by on Professor Masaru Aso.

Senpukuji has been designated as a national historic site that shows the beginning of the Jomon period. Out of 50,000 excavated artifacts, eight pots of 'bean impressed' type and 1956 stone tools are designated by the state as important cultural properties.



8 Prefecture designated Iwashita Cave (prefecturally designated in 1969)

◆Matuse-cho, Sasebo City

Initial to Early Jomon Period(ca. 10,000 to 6,000 years ago).

The archaeological site is located 200m above a sandstone outcrop on the south slope of Mt. Ishimori on the opposite bank from Senpukuji Cave. Excavations have been conducted by Professor Masaru Aso four times since 1964.

Thirty human skeletons of the Initial and Early Jomon Period have been discovered here and it is clear that the cave was used as a cemetery. Recent analyses by the National Science Museum have thrown light on the short and gracile lives of Jómon hunter-gatherers. Iwashita cave can be said to be one of Japan's most important





P16 P17



Prefecture designated Shimomotoyama Rock Shelter (prefecturally designated in 2007)

◆Shimomotoyama-cho, Sasebo City

Early and Late Jomon Period, Late Yayoi Period (ca. 6,000, 4,000, and 1,800 years ago).

The site is located in the lower reaches of Ainoura near the river mouth at an elevation of 10 m. Excavations were conducted twice in 1970.

A rock shelter with a 30m wide opening facing the Akemi River and about 4m deep and 3m high was used for burials and habitation from the Early Jomon to the Yayoi period. From the Jomon period layer, there are 4 human burials and a large number of animal bones including wild boars, birds, fish, as well as shellfish, pottery, stone tools, fishing gear such as fishing hooks, shell rings and other ornaments. From the Yayoi period, there are two box-type stone coffin burials, showing that the rock shelter was used as a cemetery.



10 National Place of Scenic Beauty Ryujin Cave (Fukuishiyama)

◆Fukuishi-cho, Sasebo City

Heian-Kamakura Periods, Edo Period (ca. 1,000-800 and 400 years ago).

The site is located at the end of a ridge which extends from Mt. Eboshi at an elevation of 25m. The rock shelter opens to the west and, before modern land reclamation, the waters of Sasebo Bay would have been visible.

Haji and Sue pottery and soapstone net sinkers have been discovered as well as remains of oysters and rocky shore molluses. The cave is thought to have served as a fishing camp at this time. In the late Edo period, it was known as Erkusishiyama, one of the Hirado Hakkei scenic spots. It is now a nationally designated scenic spot and is well known in the area under the name of Fukusishi Kannot



11) Kengyuzaki Cave

♦Hino-cho, Sasebo City

Muromachi Period (ca. 600 years ago).

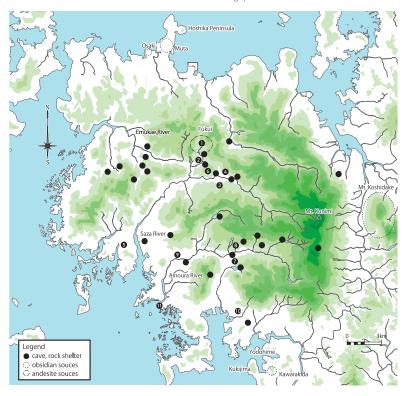
The site is located under a sea cliff facing the sea surface of the Kujukushima Islands in the Saikai National Park. It is as low as 3 m above sea level, and only 30cm from the coastline at high tide. The cave opens to the south and the pumice inside is presumed to have been washed in after the eruption of the Kikai volcans.

The 14th century Chinese Jingdezhen white porcelain and Japanese Haji pottery were excavated. A small number of conches is thought to result from temporary use of the site.

The excavation history of Sasebo city area begins from with the excavations in Northwest Kyushu by the Japanese Archaeological Association. The investigation of Fukui cave led to the academic investigation of Iwashita cave, Shimomotoyama rock shelter, and Senpukuji cave, and as of 2018, 31 cave sites have been discovered. In addition to the large number of such sites, Sasebo can be said to be the most significant place in Japan in terms of understanding the history of human use of caves. There is no other city where the history of Japan from prehistory to the present can be told in terms of caves and this explains why Sasebo is known as 'Japan's Number One City for Cave Sites'.



Researchers looking at pottery pieces in front of lwashita cave in 1964. From right: Chosuke Serizawa, Ishimaru Taro, Yoshiatsu Naito, Masaru Aso, Shizuo Oda, Photographer: Tomonori Hasuda



P18 P19

Date	Geological Division	Japan		Fukui Cave		Cave Sites in Sasebo City
40000yr		Paleolithic		A • *	i	Naoya Rock Shelter
	Pleistocene			*	i	Senpukuji Cave • Iwashita Cave Komoda Cave Fudoumyououdani Rock Shelter Kaminaoya Rock Shelter • Naoya Rock Shelter
16000yr		Jomon	1	<u>-</u>		Senpukuji Cave
						Shimomotoyama Rock Shelter
						Tenjin Cave
2000yr	Holocene	Yayoi	•		I	Shimomotoyama Rock Shelter
1800yr		Kofun			I	lwayaguchi Second Rock Shelters
1400yr		Ancient			I	Senpukuji Cave
1000yr		middle Ages	•		ı	Ryujin Cave
					ı	Kengyuzaki Cave
400yr		recent times			•	Fudoumyououdani Rock Shelter Hirado Hakkei. The Eight Places of Scenic Beau in Hirado Damain(Takaiwa,Ohashi Kannon, Daihikan,Fukuishiyama)
		present day				Mukyudou

{ Education and Community Building Using Fukui Cave }











Grand Prize

Goto Hiroshi "Meganeiwa"



Kariatsumari Momoha "Meganeiwa"

Yamashita Suzuno "Various pottery"

Kawahara Hitomi

Tsumoto Hanayo "Toryumon pottery found in Senpukuji cave"

Sasebo City Board of Education has held hands-on lectures for citizens interested in local history from 2002 as part of an effort to nurture love of the local community and understanding of cultural assets. In addition, we have published supplementary readers on historical education which have been distributed to all elementary and junior high schools in the city. 'Local history discovery' lectures for first year middle school students have visited local sites. In 2018, elementary school children in the city were asked to draw illustrations of the historical sites. Special lectures on Fukui cave have also been conducted in schools and other facilities. Interest in the local area has been growing through learning about the Palaeolithic age, which is not found in textbooks, as well as historical walks.

In 2018, the "Yoshii Cultural Property Conservation Liaison Council" was newly established based on the local conservation societies. In addition to traditional events such as local festivals, community cleaning and visits to Fukui cave, Hashikawanai cave, Naoya Castle ruins, the stone bridge group and other sites has become part of community life. We hope that these important cultural assets will be passed on to children in 10, 20 ... and 50 years' time.















