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Edited by
Teruhiko Takahashi
Tatsuo Nakakubo
Joseph Ryan
Naoya Ueda

Nonaka Kofun and the Age of the Five Kings of Wa

The Government and Military of 5th-Century Japan

Osaka University Press

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Preface

- 1 This book is the English version of 『野中古墳と「倭の五王」の時代』 (*Nonaka Kofun to wa no goō no jidai*), which was published alongside the “Nonaka Kofun and the Era of the ‘Five Kings of Wa’” exhibition (hosted from February 1st to March 22nd, 2014, by the Osaka University Graduate School of Letters and the Museum of Osaka University, in cooperation with Osaka University’s 21st Century Kaitokudō) as a part of the Nonaka Kofun Artifact Preservation Project, FY2013 Cultural Heritage Regional Activation Promotion Project (Expenses for the Presentation and Utilization of Historical Sites and Buried Cultural Property).
- 2 This publication was edited by Takahashi Teruhiko, Nakakubo Tatsuo, Joseph Ryan, and Ueda Naoya under the supervision of Fukunaga Shin’ya and with the cooperation of the graduate students of the Osaka University Graduate School of Letters. Manuscripts for the columns of Part One and the entirety of Part Two were generously provided by Hashimoto Tatsuya of The Kagoshima University Museum, Suzuki Kazunao of the Cultural Property Division of Hamamatsu City, Sakaguchi Hideki of the Kyoto University Graduate School of Letters, and Tsukamoto Toshio of the Gangoji Institute for Research of Cultural Property. Authorship is indicated at the end of each piece. Contributors not indicated above are graduate students of the Osaka University Graduate School of Letters.
- 3 Artifacts without specified ownership throughout the text are the property of Osaka University. Photographs and illustrations of Nonaka Kofun and other *kofun* of Kawachi from the time of the original excavation by Osaka University were produced by Kitano Kōhei. Photographs of the artifacts are all the property of Osaka University and, with the exception of Figs. 56, 58, 63 to 65, 69, 70, 73, and 74, were generously taken by Jufuku Shabō. Photographs from the Sakai City Museum (Fig. 58) and Nijyōsan Museum (Figs. 69 and 70) were reproduced with their generous permission.
- 4 The preservation and restoration of the artifacts presented here was conducted using the funds of Osaka University, in addition to subsidies from the Agency of Cultural Affairs and funds from the Asahi Shimbun Foundation and the Sumitomo Foundation. We express our deepest gratitude for their assistance.
- 5 Names are presented in the Japanese order, with the surname given first.
- 6 A majority of the text was translated by Joseph Ryan and the layout of the English manuscript was prepared by Ueda Naoya, with the assistance of Hida shōko and Nishiura Hikaru (students of the Osaka University Department of Archaeology).
- 7 The publication of this book was supported by Management Expenses Grants of Osaka University.

Part One Captions

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Foreword

Located in Fujiidera City, Osaka Prefecture, Nonaka Kofun was excavated by the Japanese History Laboratory of Osaka University. An essential archaeological site for the study of Japan's Kofun period, it is situated inside the Mozu-Furuichi Kofun Group, which is registered on the UNESCO World Heritage Tentative List. The Furuichi Kofun Group stretches from Fujiidera City to Habikino City and comprises numerous massive keyhole-shaped mounded tombs that were constructed over 1,500 years ago. This mounded tomb group is an invaluable historical heritage that reveals a bygone era when the great kings recorded in the Chinese dynastic histories as the "Five Kings of Wa" governed the Japanese archipelago and held diplomatic relations with China.

Nestled among numerous giant keyhole tombs exceeding 200 meters in length, Nonaka Kofun is a relatively small square tomb less than 40 meters to a side. The artifacts excavated from within, however, are unparalleled in number and quality. Especially notable are the 11 sets of iron armor, the second greatest number of armor excavated from a single tomb in Japan. Furthermore, three of the cuirasses are of a particularly rare collared construction. Not only have such collared cuirasses only been found from approximately ten tombs throughout the Japanese archipelago, the three-pronged feathered helmet ornaments (*sanbitetsu*) once affixed to the leather helmets are gilt bronze, a decoration not seen on other similar helmet ornaments. The significant academic value of Nonaka Kofun and its significance as an archaeological site of the Kofun period should be readily apparent.

Unfortunately, some of the iron artifacts excavated from Nonaka Kofun had become brittle from rust, some had become damaged, and others had been kept in unsuitable preservation conditions. The deterioration of the numerous

iron artifacts continued for many years after the excavation. In order to rectify this, Osaka University, with the assistance of the Graduate School of Letters, embarked on a project to preserve, repair, and reconstruct these artifacts. Furthermore, the university was fortunate to receive subsidies for the preservation and repair of the iron armor from the Agency for Cultural Affairs as a Cultural Heritage Regional Activation Promotion Project. Additionally, funds were also secured for several years from multiple private organizations such as the Asahi Shimbun Foundation and the Sumitomo Foundation. We express our sincerest gratitude to these organizations.

This publication contains the results of these conservation efforts. It also contains information regarding artifacts excavated from tombs located around Kawachi (where the Osaka University's Graduate School of Letters has conducted numerous excavations), in addition to research undertaken to further clarify the era of the Five Kings of Wa, which is still shrouded in mystery.

Finally, we would like to formally thank everyone who supported the publication of this English edition. In the spirit of the Osaka University motto of "Live Locally, Grow Globally", it is our desire that this publication will lead to an increased understanding of the historical significance of the mounded tombs (*kofun*) of Japan, as well as assist local efforts toward World Heritage inscription.

August 2016

Graduate School of Letters
Osaka University





Located on the far eastern edge of the Eurasian Continent, the Japanese archipelago witnessed the construction of a great number of mounded tombs (*kofun*) from the mid-3rd century to the 7th century A.D. In Japanese archaeology, this span of 350 years is called the Kofun period, named after the mounded tombs (*kofun*) that characterized the society of the time.

The Kofun period was preceded by the Yayoi period, which witnessed the introduction of wet rice agriculture and the spread of bronze and iron, and followed by the Asuka and Nara periods, which witnessed the construction of palaces, capitals, and temples, as well as the establishment of a mature ancient state bolstered by written legal codes and a bureaucratic organization. Additionally, based on the distribution of giant *kofun* and what can be gleaned from the little textual evidence available, it is widely accepted that the Kofun period witnessed the establishment of the archipelago's first centralized government (the Yamato government). The Kofun period is therefore regarded as a formative stage in the state formation process of ancient Japan.

The society of the Kofun period is considered to have been a class society, with the *kofun* built exclusively for the elite. Approximately 160,000 *kofun* were built over an extensive stretch of the Japanese archipelago, across the roughly 1,300 kilometers from southern Tōhoku to southern Kyushu. These *kofun* are characterized by the existence of giant examples over 400 meters long, unique shapes (most notably the keyhole-shaped mounds), and the fact that the sociopolitical status of the interred is believed to have been physically manifested in the shape and size of the mound. Archaeological evidence of the Kofun period also includes the remains of settlements and large-scale ritual sites in the mountains or on islands, in addition to materials related to craft production, such as ironworking, metalworking, pottery, bead-making, and spinning and weaving. This text, however, will focus primarily on *kofun* and mortuary ritual.

The shapes of *kofun* In Japan, several different shapes of *kofun* were built concurrently during the Kofun period: round keyhole-shaped tombs (*zenpōkōenfun*), square keyhole-shaped tombs (*zenpōkōhōfun*), round tombs (*enfun*), and square tombs (*hōfun*). Of these, the round keyhole tombs are particularly distinctive among the mounded tombs of the world.

The origin of this curious keyhole shape can be traced back to the burial mounds of the preceding Yayoi period, during which round or square burials with low mounds surrounded by ditches were built. The square moated burial mounds are called *hōkei shūkōbo* and the round moated burial mounds are called *enkei shūkōbo*. While these moated burials had been built in dense concentration as common family burials in the Middle Yayoi period, they gradually transitioned into independent mounds built for powerful families or elites. In the Final Yayoi period, an earthen projection was attached to the square or round mound as a ritual stage, thereby developing into such unique shapes as

round or square keyhole tombs and square tombs with four corner projections.

Interestingly, the shape of the burial mounds differed by region or group and the sharing of the same mound shape is believed to have reflected a certain level of political affinity. Upon entering the Kofun period, however, the various Yayoi tomb styles adopted throughout the Japanese archipelago were consolidated into the four main *kofun* shapes discussed above, with the round keyhole tombs at the height of the new political hierarchy. The mounded tombs now acted as a representation of the social and political background of the buried elite.

The size of *kofun* As the size of a *kofun* reflected the scale of invested labor, it also served as a manifestation of the political and economic power of the elite. There are tremendous differences between the sizes of the tombs, which span from giant round keyhole tombs measuring nearly 500 meters in total length to smaller round or square tombs measuring only 10 meters in diameter or to a side. Throughout the 350 years of the Kofun period, the largest tombs were without exception of the round-keyhole shape and were all consistently built in the Kinki region, located in the center of the archipelago. This is interpreted as suggesting that the central administration of the period was situated in this Kinki region and that the leaders of this administration wielded authority as kings.

Daisen-ryō Kofun in Osaka Prefecture is the longest round keyhole tomb in Japan, measuring 486 meters in length and 36 meters in height, boasting a total volume of 1,400,000 cubic meters, and surrounded by two moats. According to an estimate by the Ōbayashi Corporation, a Japanese construction company, the construction of this mounded tomb would have required a total of 6.8 million workers; assuming 2,000 workers labored each day, it would have taken approximately 16 years to complete (Ōbayashi Corporation Project Team, 1985).

As suggested above, the mounded tombs of the Kofun period functioned as a unique system for the indication of political status, social background, and level of influence through shape and size. Tsude Hiroshi called this political construct the “Round Keyhole Tomb Order” (hereafter, the “Keyhole Tomb Order”) after the giant round keyhole tombs that were situated at the top of this sociopolitical hierarchy. The Furuichi–Mozu Kofun Group, which includes Nonaka Kofun, was located at the center of this Keyhole Tomb Order and is thus essential to our understanding of the Kofun period.

Burial facility The mounded tombs of Japan's Kofun period are also distinctive in their mode of burial. In the first half of the period, the pit-style burial facility was located at the top of the mound, thus positioning the hill-like mound, itself, as the mortuary stage. In the second half of the period, under influence from the Korean peninsula, horizontal stone chambers similar to passage graves became common. Rather than being built deep underground, however, they were installed into the side of the mound.

This relationship between the mound and the burial facility presents a significant difference from the other mounded tombs of the world.

What the burial goods convey Just as in the kingly and elite burials of other parts of the world, many burial goods were interred in Japan's *kofun*. The burial goods up until the Middle Kofun period did not include vessels for food and drink necessary for the afterlife, but rather served to display the prestige, status, and political affiliations of the occupant. In the following Late Kofun period, however, vessels for food and drink began to be buried with the deceased, influenced by concepts of the afterlife introduced from the continent.

Burial goods mainly comprised bronze mirrors, iron weapons and armor, horse trappings, iron tools, personal ornaments consisting of beads and gilt-bronze items, and earthenware. The composition of burial goods changed significantly over the 350 years of the Kofun period and particularly between each of its three phases. This allows archaeologists to determine the nature of the buried elite within each phase.

In the Early Kofun period, which spanned from the mid-3rd century to the mid-4th century, burial goods of a ritual nature were predominant, such as bronze mirrors imported from China, domestic mirrors made within the Japanese archipelago, stone armlets designed after shells from the distant Nansei Islands, comma-shaped and cylindrical beads, iron and bronze arrowheads, iron swords and spears, and iron tools. Particularly, the triangular-rimmed deity-and-beast mirrors imported from China exclusively by the central administration and distributed to subservient local leaders are not only representative of the Early Kofun period, but also indicate a strong political relationship with the central administration, which was in turn legitimated by its relationship with China.

The Middle Kofun period, which is the subject of this text, spans from the late-4th century to the end of the 5th century, and is characterized by an increased militarization of the elite in reaction to the aggressive expansion of Goguryeo and the tumultuous international atmosphere of contemporary East Asia. While less and less elites were buried with large numbers of bronze mirrors, the burial of great numbers of weapons, such as single- and double-edged iron swords and arrowheads, increased significantly. Moreover, horse trappings introduced from the Korean peninsula and iron armor produced using the most sophisticated ironworking technology of the time became the primary burial goods. Other burial goods from this period include large numbers of iron tools, stone imitation objects shaped after mirrors, swords, or *magatama* (found atop the mound), personal ornaments such as gilt bronze earrings, crowns, ornamental shoes, *magatama* and cylindrical beads, and Sue ware (stoneware). Numerous objects produced using new technologies introduced from the Korean peninsula are notable. The typical composition of burial goods from the Middle Kofun period is well

represented by Nonaka Kofun, from which we can paint a picture of a central administration with control over military, land development, the importation of advanced technologies, and foreign relations.

In the Late Kofun period (6th century), horizontal stone chambers were introduced from the Korean peninsula and the practice of utilizing a single burial chamber by a family unit spread. Burial goods of this period reflected the political status of the occupant or the political group to which the occupant belonged to; most representative were gilt-bronze horse trappings and decorated swords with pommels bearing dragon or phoenix motifs and sheaths with gilt bronze or silver decorations. Additionally, a large amount of Sue ware was deposited into the stone chambers, as well as burial goods such as weapons and armor, horse trappings, iron tools, beads, gilt bronze personal ornaments and crowns, and ornamental shoes. Furthermore, clusters of tens to hundreds of small mounded tombs were constructed on mountain sides and other locations, attending an expansion in the number of people buried in mounded tombs. This is interpreted as suggesting an increase in the central administration's control over the lower levels of the elite.

The burial goods most prized in each respective phase, such as the bronze mirrors of the Early Kofun period, the iron armor of the Middle Kofun period, and the decorated swords of the Late Kofun period, not only represented the nature of the interred elite, but also strongly reflected the sociopolitical system of the time, as the acquisition or production and distribution of these items was almost exclusively controlled by the central administration. This text will thus attempt to shed light on the true nature of the central administration of the Kofun period through an analysis of the artifacts excavated from Nonaka Kofun, which saw the mass burial of a large number of representative burial goods of the Middle Kofun period.

Although writing saw limited use among the elite during the Kofun period, full-fledged textual evidence is not attested to until the following Asuka and Nara periods. Therefore, archaeological evidence, mostly deriving from the *kofun* considered here, is most useful in considering the politics and society of the Kofun period. Burial goods highly representative of the 5th century were deposited within Nonaka Kofun and this text attempts to clarify the historical background against which such *kofun* were actively constructed in ancient Japan.

Bibliography

- Fukunaga Shin'ya. (2001), *Yamataikoku kara Yamato seiken e* (From Yamataikoku to the Yamato administration). Osaka University Press.
- Shiraishi Taichirō. (2001), *Kofun to sono jidai* (The age of the *kofun*), Yamakawa Shuppansha Ltd.
- Tsude Hiroshi. (2000), *Ōryō no kōkōgaku* (Archaeology of kingly tombs). Iwanami Shinsho.
- Wakasa Tōru. (2013), *Kofun jidai guide book* (Guide book to the Kofun period). Shinsensha Co., Ltd.

Part One

Catalogue:

Nonaka Kofun and the Tombs of Kawachi

Furuichi Kofun Group

(Large *kofun* in foreground: Hakayama Kofun; giant *kofun* in background: Konda-gobyōyama Kofun)

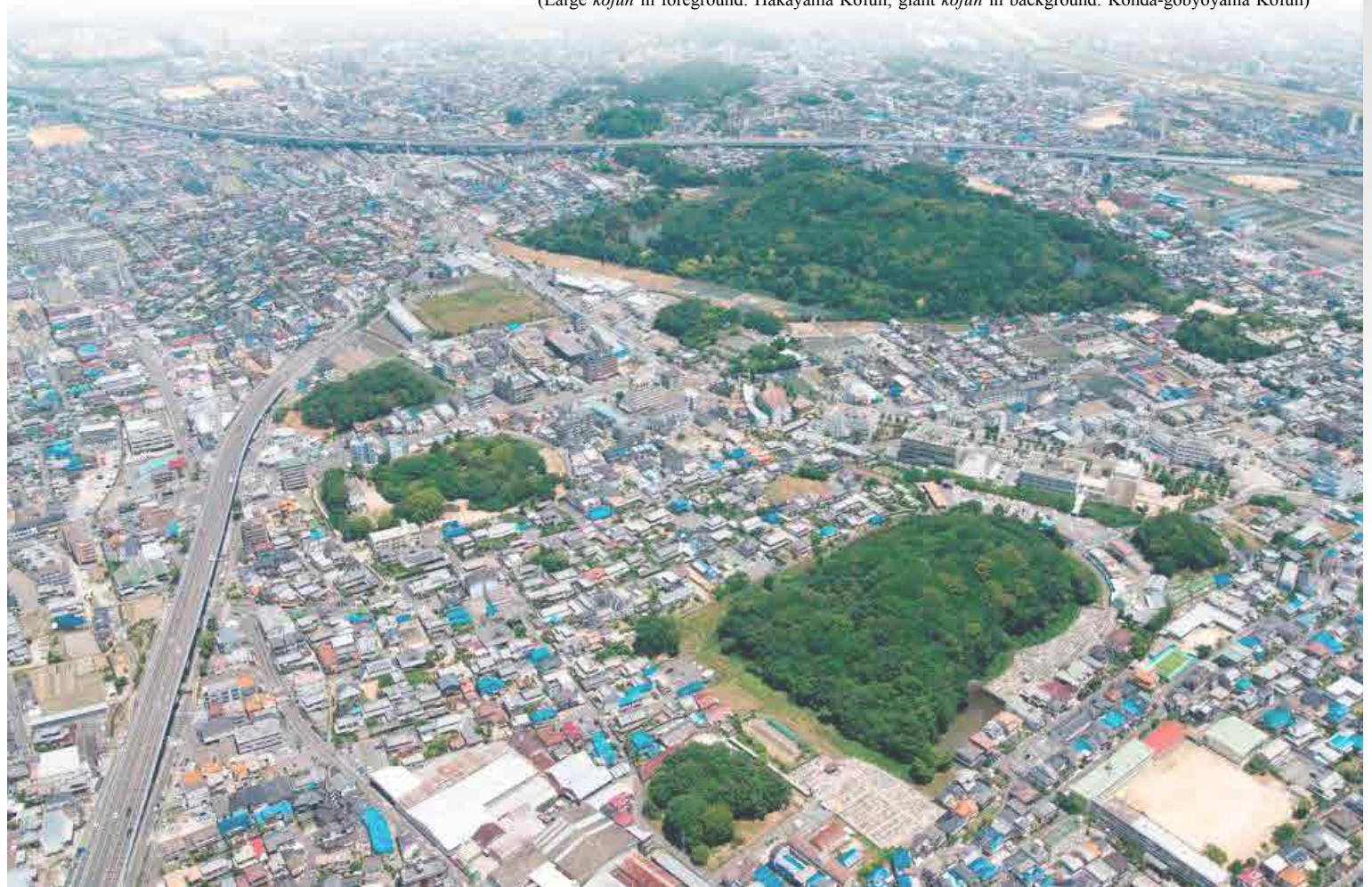




Plate 1 Armor from Nonaka Kofun



Plate 2 Cuirass no. 10 (laced triangular-plate collared cuirass with leather keeled helmet)



Plate 3 Iron tools and farming implements from Nonaka Kofun

Top-left: one knife, five hand sickles; Bottom-left: spade and hoe blades (four square blades, one U-shaped blade); Right: six axe heads



Plate 4 Stone and earthenware objects from Nonaka Kofun

Top-left: Stone imitation objects (20 knife-shaped items); Top-right: Stone imitation object (one axe head-shaped item); Middle-right: one comma-shaped bead, two cylindrical beads; Bottom-left: Stone imitation objects (two sickle-shaped items); Bottom-center: one stone spindle whorl; Bottom-right: two earthenware spindle whorls

1 SEARCHING FOR THE FIVE KINGS OF WA

(1) Archaeology and the Era of the Five Kings of Wa

In 5th-century East Asia, the society of the central Japanese archipelago was known as *Wa*. While there are very few written documents concerning the archipelago of this period, the era is recorded in Chinese dynastic histories as witnessing the reign of the “Five Kings of Wa”: San, Chin, Sai, Kō, and Bu. According to the Book of Song, the Wa king San sent tribute during China’s Song Dynasty (Liu Song) in 421 and 425, followed by Chin in 438, Sai in 443, Kō in 462, and Bu in 478. Bu was appointed “Great General who Subdues the East” in 479.

This era of the Five Kings of Wa coincided with the construction period of the Furuichi–Mozu Kofun Group, whose representative *kofun* include Konda-gobyōyama Kofun (traditionally considered Emperor Ōjin’s mausoleum) and Daisen-ryō Kofun (traditionally Emperor Nintoku’s mausoleum), which are located on the Osaka Plain. Archaeologists believe that the Furuichi–Mozu Kofun Group is home to the tombs of the 5th-century Wa kings, including the five kings discussed above. Ascertaining which tombs, however, belonged to the Five Kings of Wa and reconstructing the detailed conditions of the 5th century are not easy tasks. Research has been constrained both by the scarcity of contemporary written documents and the lack of excavations conducted on these giant kingly tombs.

However, this is not to say that there are no clues by

which to further illuminate the reality of 5th-century Japan. Information has steadily accumulated through archaeological research and excavations conducted on *kofun*, settlements, and production sites in the Kinki region and elsewhere throughout Japan. In particular, small *kofun* located around the giant keyhole tombs, referred to as satellite tombs, contain a great number of weapons and armor, tools used in farming and daily life, pottery from overseas, and traditional ritual items. Like a time capsule, these items present an invaluable record of the politics, society, economy, diplomacy, lifestyle, and culture of the era of the Five Kings of Wa.

This publication focuses on the artifacts excavated from Nonaka Kofun, one of the many small satellite tombs located in the Furuichi Kofun Group. Located in Fujiidera City, Osaka Prefecture, Nonaka Kofun was excavated in 1964 by the National History Laboratory of the Osaka University School of Letters. While this small *kofun* measures less than 40 meters to a side, it nevertheless revealed 11 suits of armor, in addition to a great number of weapons, Sue ware, *haniwa* (earthenware funerary sculptures), iron farming tools, and stone ritual objects. While ancient Japanese history is still greatly shrouded in mystery, this publication aims to consider the era of the Five Kings of Wa through the many artifacts excavated from Nonaka Kofun and surrounding tombs.

(Tachibana Izumi and Kirii Riki)

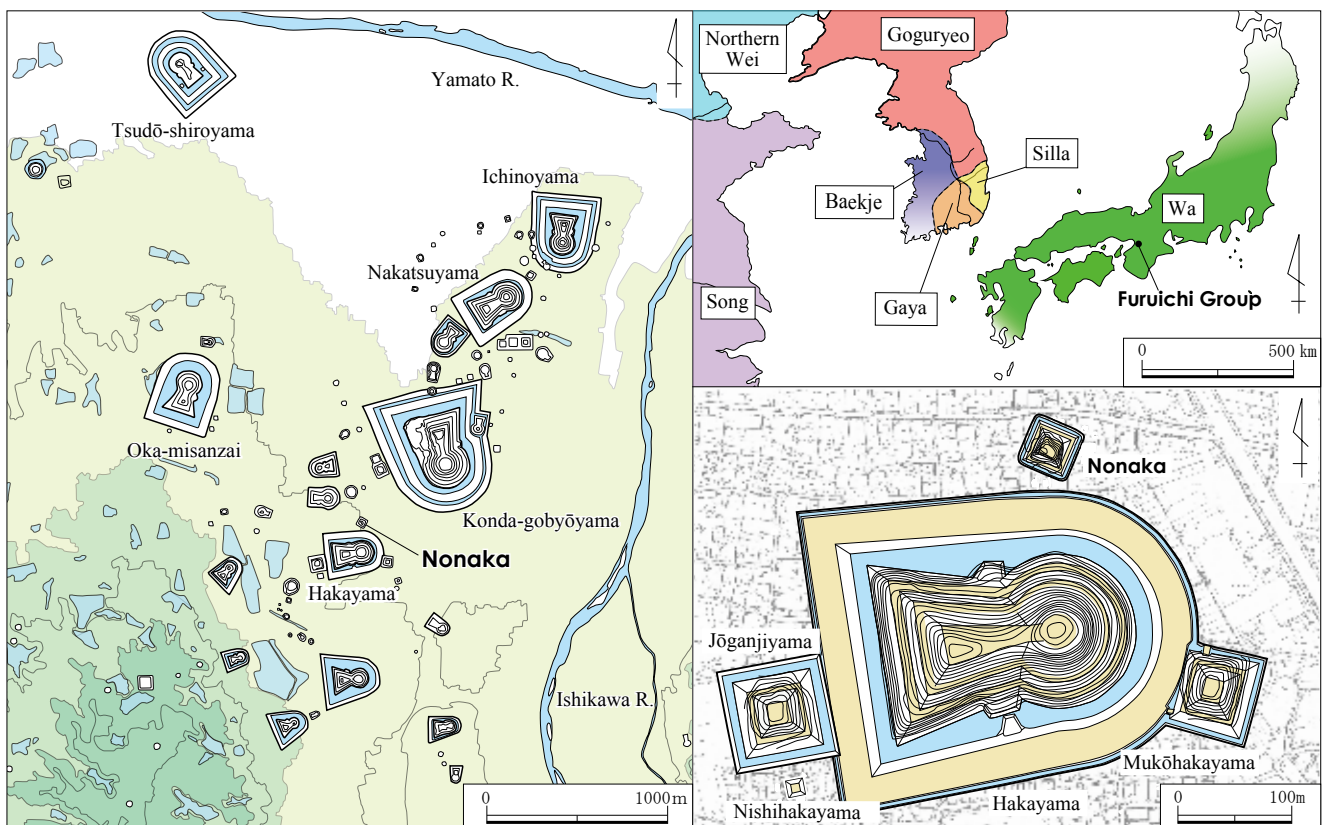


Fig. 1 Furuichi Kofun Group and Nonaka Kofun

(2) The Excavation of Nonaka Kofun

Nonaka Kofun (hereafter, Nonaka) is a mid-sized square *kofun* measuring 37 meters to a side. It is located on the third block of Nonaka in Fujiidera City, Osaka Prefecture. It was constructed in the Middle Kofun period, which roughly corresponds to the 5th century. The Furuichi–Mozu Kofun Group, which was the largest tomb group of the Kofun period, was constructed spanning the modern-day cities of Sakai, Fujiidera, and Habikino, in Osaka Prefecture. Nonaka is situated roughly in the center of the Furuichi Kofun Group, next to Hakayama Kofun, a giant keyhole tomb measuring 225 meters long. In Japanese archeology, a large-scale *kofun* such as Hakayama Kofun is referred to as the “main tomb”, while the surrounding small- to medium-sized tombs such as Nonaka are referred to as “satellite tombs”.

Prior to the excavation, local residents thought the mound was simply a wooded hill, as the existence of a tomb was yet unknown. In 1964, however, Kitano Kōhei, an adjunct of the National History Laboratory of the Osaka University School of Letters, conducted the excavation that would come to reveal a great deal about the political society and foreign relations of the time.

Atop the mound was a flat area measuring 13 meters east-to-west and eight meters north-to-south. Using hand sickles and shovels to strip grass and roots from this area, excavation began on Nonaka. As the excavation progressed, a massive amount of pottery and *haniwa* fragments and stone objects in the shape of tools and farming implements was discovered (Fig. 3:2–4). It is believed that these artifacts accompanied various rituals conducted atop the mound after earth was heaped over the burial facility.

After recording and removing the various artifacts and digging approximately one meter below the surface, a brown-red rusted iron plate was uncovered. After more careful digging, a row of iron armor appeared. An enormous number of iron arrowheads, single- and double-edged iron swords, tools and farming implements, foreign pottery, and ritual objects was discovered (Fig. 3:5–10). While Nonaka was a relatively small tomb, it was nevertheless equipped with a great number of objects made of iron, which was a highly precious material at the time. These items were recorded through detailed drawings, photographs, and 8 mm color film, which was very rare at the time.

Fig. 2 shows the layout of the burial goods.

It is apparent from the location of the surrounding iron nails that the burial goods had originally been placed in wooden boxes and lined in a row. From the west, the rows of artifacts are labeled as row no. 1, row no. 2, etc. The layout of four of these rows was recorded in a detailed line drawing; row no. 5 was located two meters away from row no. 4 and contained tools and farming implements. While row nos. 3 to 5 no longer retained their original position due to looting, row nos. 1 and 2 were unharmed and maintained their original condition. Row no. 1, which comprised ten suits of armor neatly arranged in a row, has come to be considered within Japanese archaeology as representative of the nature of the Middle Kofun period.

(Nakakubo Tatsuo)

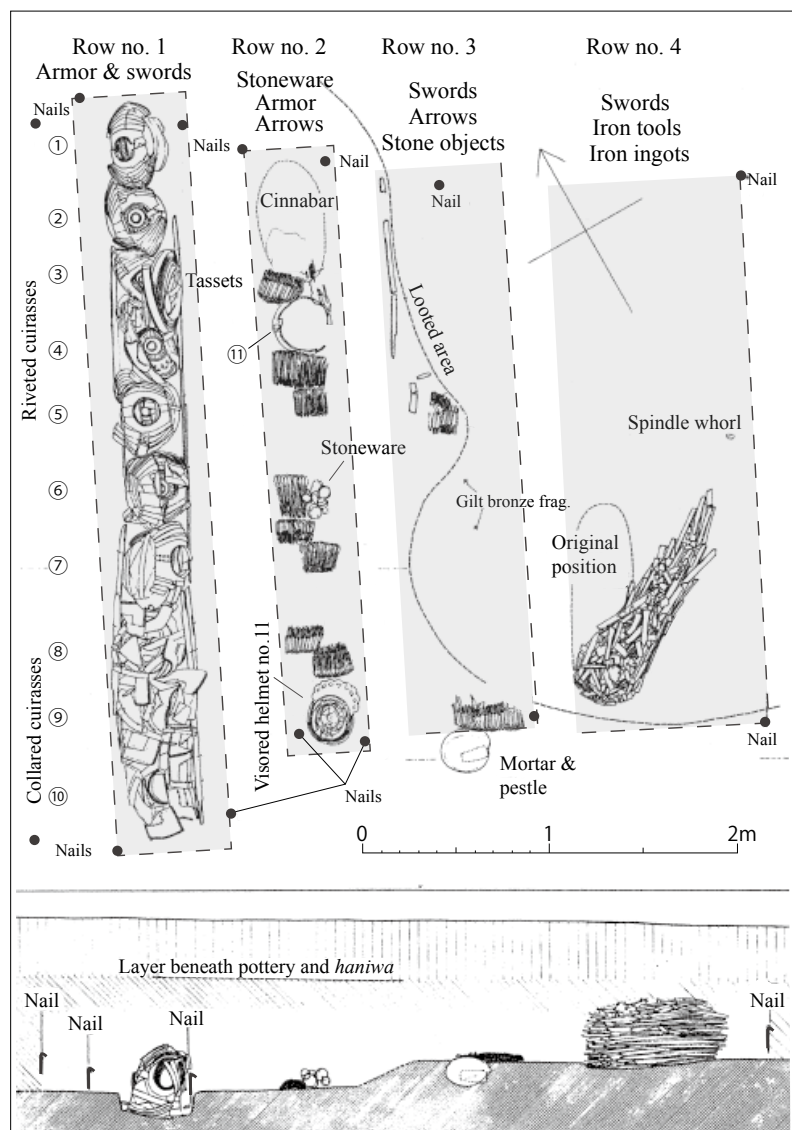


Fig. 2 Location of burial goods within the burial facility (after drawing by Kitano Kōhei)



1. The excavation of Nonaka Kofun



6. The remains of row nos. 1 to 4



2. Stratigraphy of the mound



7. Sets of armor from row no. 1



3. Pottery, *haniwa*, and stone and iron objects from atop the mound



8. Tassets uncovered from row no. 1



4. Haji ware and *haniwa*



9. Interior of a visored helmet discovered from within a cuirass



5. Leather keeled helmets, collared cuirasses, and iron swords



10. Visored helmet no. 11 and iron arrowheads

Fig. 3 Excavation of Nonaka Kofun

The Historical Significance of the Excavation of Nonaka Kofun

Osaka University conducted its excavation of Nonaka under Kitano Kōhei from March to July of 1964. As March 2014 was the 50th anniversary of the excavation, this section was originally written as an introduction to the excavation's academic impact.

The first individual to utilize the excavation results of Nonaka was Nogami Jōsuke, who also participated in the excavation (Nogami, 1967). His analysis of armor production technology and manufacturing organization is well-known within Japanese archaeology.

Following Nogami, Kitano himself went into further detail in a paper published several years later (Kitano, 1969). After introducing the Nonaka excavation, he discussed the background behind the mass burial of iron objects through a comparison with similar *kofun*, proposed that the Yamato polity secured its superiority through monopolizing the acquisition of iron resources and controlling the production and distribution of standardized armor, attempted a reconstruction of the military organization and center-periphery relations through an analysis of burial patterns, and theorized that Middle Kofun-period armor was imbued with strong political significance.

These innovative perspectives elucidating the relationship between armor production and the Yamato polity made way for new horizons in Kofun-period research and laid the foundation for later research considering regional relationships and the nature of the elite through analyses of armor burials, which greatly advanced in the 1980s to 1990s. Kitano's research has become the foundation of our current understanding of the Kofun period, to the extent that many no longer recognize that this understanding originally stems from his research on Nonaka.

The results of the Nonaka excavation came to fruition in 1976 with the publication of the site report. Not even considering the academic importance of the excavated artifacts, this publication can surely be considered one of the most outstanding site reports in Japanese archaeology, containing beautiful line drawings, clear photographs, and precise writing, in addition to a foreword and analyses that offered a multifaceted investigation of the tomb.

The diagrams depicting the excavated artifacts' location and the photographs showing the armor arranged neatly in a row have become essential resources used to discuss the Middle Kofun period and are reproduced in numerous publications from general overviews to specialized texts. As many of the large *kofun* of the Furuichi-Mozu Kofun Group have not been excavated, these materials have immense academic worth.

Moreover, the publication also touched upon numerous other areas of research, including typological research into iron armor, iron arrowheads, tools, and stone imitation

objects, patterns in the burial of weapons and armor, military organization theory, the mass burial of iron objects, the nature of satellite tombs, and inquiry into Middle-Kofun government and the Furuichi-Mozu Kofun Group.

In particular, interest in the armor became a catalyst for research into the Yamato polity of the Middle Kofun period.

Indeed, it would not be unreasonable to suggest, for example, that Fujita Kazutaka's research into armor ownership and burial patterns (Fujita, 2006) and Tanaka Shinsaku's suggestion that a standing army existed during this period (Tanaka, 2001) would be missing a significant line of evidence without the results from the Nonaka excavation.

In recent years, 8 mm film videos and color reversal film from the excavation were found in good condition. While detailed observation of the armor had long been difficult due to the resin coating applied after its discovery, the conservation efforts conducted recently revealed that the original surface of the armor had survived quite well under the hardened outer coating. The collared cuirasses that were found crushed at the time of excavation had been stabilized by backing them with cloth, which facilitated later conservation efforts.

The original excavation was also pioneering in that it utilized documentation techniques and handling methods of brittle artifacts that were rare at the time. Now, 50 years later, the forward-thinking excavation of Nonaka by Kitano continues to contribute to the advancement of Japanese archaeology. (Hashimoto Tatsuya)



Fig. 4 Kitano Kōhei during the excavation of Nonaka Kofun

References

- Tanaka, Shinsaku. (2001). *Mozu-Furuichi kofungun no kenkyū* (Research on the Mozu-Furuichi Kofun Group). Gakuseisha.
- Nogami, Jōsuke. (1968). *Kofun jidai ni okeru kacchū no hen'nen to sono gijutsushi teki igi* (Chronology of Kofun-period armor and its technological significance). *Kōkogaku kenkyū*, 14(4):12–43.
- Fujita, Kazutaka. (2006). *Kofun jidai no ōken to gunji* (The government and military of the Kofun period). Gakuseisha.
- Kitano, Kōhei. (1969). *Go seiki ni okeru kacchū shutsudo Kofun no shomondai* (Issues surrounding tombs with armor in the 5th Century). *Kōkogaku zasshi*, 54(4):1–20.

(1) Armor

Of the many artifacts excavated from Nonaka, the 11 sets of plate armor are most characteristic; this ranks as the second greatest amount of iron armor excavated from a single *kofun* in Japan. Evidence of organic body armor in Japan dates back to the Middle Yayoi period, several centuries before the common era. While iron weapons were used during the Yayoi period, iron armor only emerged during the following Kofun period, which began in the mid-3rd century. It was not until the Middle Kofun period (late 4th century through the 5th century), however, that armor burials increased, becoming an essential feature of elite burials. Nonaka is therefore representative of the Middle Kofun period, which has also been called the “century of armor”.

As the Japanese archipelago during this period was technologically unable to produce iron domestically, it relied on the importation of iron resources from the southern Korean peninsula; additionally, its technological level of ironworking was also limited. The iron armor of the Middle Kofun period (5th century), however, was produced using the most advanced ironworking technology of the time. Precious iron resources and advanced ironworking technology were monopolized by the central Yamato administration, which was based in the Kinki region; iron armor is therefore considered to have been produced in workshops strongly controlled by the central government. This is supported by the fact that all armor excavated from across the Japanese archipelago, from the Kantō region to southern Kyushu, is morphologically similar and was constructed using standardized techniques.

Armor produced in workshops controlled by the central Yamato polity was buried not only in large *kofun* over 100 meters in length, but also in small- to medium-sized round and square *kofun*. These *kofun* with armor are believed to hold the remains of powerful elite who maintained political and military ties with the central administration. As armor not only protected the wearer, but also had a symbolic function indicating political or military prestige, it can be a useful tool for the investigation of Middle-Kofun society and politics.

Two different combinations of body armor and helmets were excavated from Nonaka (refer to Column 2 on pp. 24–25).

The first combination is of a cuirass to protect the torso, a neck guard, shoulder guards, and a visored helmet. Iron tassets (an armored skirt hanging from the hip to the thighs) were found associated with one set of armor. The individual plates of the cuirasses, neck guard, and visored helmets were joined using iron rivets. This combination of armor, which allowed for the protection of most of the upper body,

weighed approximately six kilograms in total, resulting in a heavy set of equipment. This combination was accompanied by single-edged iron swords.

The second combination is of a collared cuirass, covering the back of the neck, in addition to the front and rear torso, and a leather keeled helmet. This set did not include shoulder guards, and may be considered to have been comparatively lightweight. Collared cuirasses did not employ rivets; rather, the individual iron plates were joined by threading leather laces through adjoining holes opened in the plates (and are therefore called “laced” cuirasses). In contrast to the first combination, double-edged iron swords were placed next to the collared cuirasses.

We can infer that of the two combinations uncovered from Nonaka, the former was the standard equipment, while the latter was of a special type. Additionally, the former combination employed the new technological innovation of riveting, which would have been cutting-edge at the time of the tomb’s construction. Laced cuirasses are believed to have had a special function, imbued with traditional or ritual significance.



Fig. 5 Comparison of armor sets

Cuirasses A cuirass is a piece of body armor made of plates that protects the torso. Such plate armor would have hung from the shoulders and been secured at the waist using sashes.

This type of armor was made by joining numerous iron plates between a central frame of long iron bands approximately four centimeters wide. Armor made in this method is referred to as framed armor. At Nonaka, both cuirasses using triangular plates and those using rectangular plates stretched lengthwise between the structurally supportive ribs were discovered. As mentioned above, there were two types of methods for connecting the iron plates, leather lacing and riveting, and the latter was an advanced technology introduced from the Korean peninsula. The technology for working long rectangular plates into a cuirass also appeared from the time of Nonaka.

Riveted triangular-plate cuirasses, riveted rectangular-plate cuirasses, and laced triangular-plate collared cuirasses were excavated from Nonaka. Of these cuirasses, cuirass nos. 1–10 were excavated from row no. 1: cuirass nos. 1–7 are riveted triangular-plate cuirasses and riveted rectangular-plate cuirasses, while nos. 8–10 are the special laced triangular-plate collared cuirasses. Cuirass no. 11 was uncovered from row no. 2, slightly separated from row no. 1. From a technological standpoint, no. 11 was the newest type of riveted rectangular-plate cuirass for the time and most likely the newest of the cuirasses excavated from Nonaka.

The most unique of the cuirasses are nos. 8–10, the laced triangular-plate collared cuirasses. Very few of these cuirasses have been discovered; including Nonaka, they have only been excavated from seven *kofun*: Shichikan, Toyonaka-ōtsuka, Katano-higashikurumazuka, and Mozu-ōtsukayama in Osaka; Chasuriyama in Hyogo; and Enshōji-hakayama no. 1 in Nara. Its most notable characteristics are the pronounced collar and wings protruding out from the shoulders. Furthermore, there are crescent-shaped plates on each side below the armpit, which are not found in conventional cuirasses. Of the numerous cuirasses of the Kofun period, collared examples are therefore considered to have been imbued with special meaning.

A detailed analysis of each cuirass reveals slight differences in the total number, size, and shape of the plates, in addition to the total number of rivets (refer to Part 2, pp. 68–71, for more details). For example, cuirass no. 7 is the only riveted triangular-plate cuirass with hinges installed on both underarm areas, making it the only cuirass in which both the right and left front sections open. Meanwhile, cuirass no. 6 includes a long vertical plate for the installment of hinges, but no actual hinges. It has been riveted shut and is unable to open. This may suggest changes to the design plan during production.



Fig. 6 Side hinges (marked by white circles) on cuirass no. 7 (riveted triangular-plate cuirass)



Fig. 7 Leather bordering (top arrow) and lacing (lower arrows) on cuirass no. 9 (laced triangular-plate collared cuirass)



Fig. 8 Cuirass no. 1 (riveted triangular-plate cuirass) (front)



Fig. 9 Cuirass no. 1 (riveted triangular-plate cuirass) (rear)



Fig. 10 Cuirass no. 2 (riveted rectangular-plate cuirass) (front)



Fig. 11 Cuirass no. 2 (riveted rectangular-plate cuirass) (rear)



Fig. 12 Cuirass no. 3 (riveted rectangular-plate cuirass) (front)



Fig. 13 Cuirass No. 3 (riveted rectangular-plate cuirass) (rear)



Fig. 14 Cuirass no. 4 (riveted rectangular-plate cuirass) (front)



Fig. 15 Cuirass no. 4 (riveted rectangular-plate cuirass) (rear)



Fig. 16 Cuirass no. 5 (riveted rectangular-plate cuirass) (front)



Fig. 17 Cuirass no. 5 (riveted rectangular-plate cuirass) (rear)



Fig. 18 Cuirass no. 6 (riveted triangular-plate cuirass, neck guard, shoulder guards, and riveted lamellar helmet with visor)



Fig. 19 Cuirass no. 7 (riveted triangular-plate cuirass, neck guard, shoulder guards, and riveted lamellar helmet with visor)



Fig. 20 Cuirass no. 8 (laced triangular-plate collared cuirass) (front)



Fig. 21 Cuirass no. 8 (laced triangular-plate collared cuirass) (rear)



Fig. 22 Cuirass no. 9 (laced triangular-plate collared cuirass) (front)



Fig. 23 Cuirass no. 9 (laced triangular-plate collared cuirass) (rear)



Fig. 24 Cuirass no. 9 (laced triangular-plate collared cuirass and leather keeled helmet)



Fig. 25 Cuirass no. 10 (laced triangular-plate collared cuirass) (front)



Fig. 26 Cuirass no. 10 (laced triangular-plate collared cuirass) (rear)



Fig. 27 Cuirass no. 11 (riveted rectangular-plate cuirass)

Neck guards Neck guards protect both the front and rear neck area. They would have been attached after the cuirass had been worn. They are comprised of two side plates (one on either side of the neck) and two iron “plackets” joining them in the front and back. The neck guards found at Nonaka present an inverted trapezoid shape when viewed from the front. It is common for the four plates of a neck guard to be laced together for flexibility; the neck guards from Nonaka, however, used rivets on one side of the front placket. Slight differences in the width and general shape of the front and rear plackets can be witnessed.

Shoulder guards Shoulder guards protect the area from the shoulder down to the upper arm and can be found in two types: those made by stacking rows of long, curved horizontal plates and those made by joining numerous lamellae. The shoulder guards excavated from Nonaka belong to the former type, made by hanging thin iron plates (11 to a side) measuring 3.5 centimeters in width and 36 to 37 centimeters in length from the neck guard using leather laces. This type of shoulder guard is the most commonly

found type from the Kofun period. Of the 390 *kofun* with armor burials, only around 120 of them have accompanying shoulder guards; this suggests that their ownership and use was limited. Nonaka, which contained seven shoulder guards, most surely had a highly martial character.

Iron tassets Iron tassets are worn to protect the lower half of the body. It has been suggested that tassets made of organic materials were also used during the Kofun period, but very few examples remain. Iron tassets were made by connecting hoop-shaped iron plates vertically into a skirt using leather laces. The tassets found from Nonaka are made up of 11 iron plates. At the time of excavation, the iron tassets were found placed atop cuirass no. 3; none of the other cuirasses were accompanied by iron tassets. *Kofun* from which tassets have been uncovered include Mozu-ōtsukayama and Kurohimeyama in Osaka Prefecture, Enshōji-hayakama no. 1 in Nara Prefecture, Minoyama-ōtsuka in Kyoto Prefecture, and Rōji in Fukuoka Prefecture. It is apparent that tassets were quite rare for the Middle Kofun period.

Helmets Two types of helmets were excavated from Nonaka: riveted lamellar helmets with visors and leather keeled helmets.

The riveted lamellar helmets are highly decorated and have a visor equipped with openwork designs. At the top of the helmet is a decoration consisting of a bottom inverted bowl, middle connecting rod, and top bowl. The visor of helmet no. 2 is decorated with triangular, rectangular, and lens-shaped openwork designs, and the outermost brim is fashioned into a petal-like wave pattern. Furthermore, there are two types of visor patterns found from Nonaka: those that have rectangular openwork (nos. 2 and 5), and those that do not (nos. 3, 4, and 6). Based on the pattern composition, it is likely that the latter pattern belonged to a separate craft lineage that no longer retained its rectangular designs.



Fig. 28 Neck guard no. 4



Fig. 29 Neck- and shoulder-guards set no. 1 (front)



Fig. 30 Neck- and shoulder-guards set no. 2 (front)



Fig. 31 Iron tassets no. 3

Analysis of the inside of the helmet reveals that small rectangular iron lamellae measuring five centimeters by two centimeters in size were arranged between the horizontal iron bands. The visor patterns originally derived from those found on continental belt fittings and these visored helmets suggest a strong connection with the metalworking technology of the Korean peninsula.

Keeled helmets are characterized by the shape of the front section of the helmet, which narrows to a point, similar to the front of a ship. Iron examples of these helmets were common during the Middle and Late Kofun periods (5th to 6th centuries). This type of helmet preceded the visored lamellar helmets. Interestingly, the oldest extant framed collared cuirass, excavated from Katano-higashikurumazuka Kofun, was accompanied by an iron keeled helmet. The keeled helmets excavated from Nonaka were made of leather and also accompanied the collared cuirasses. Leather helmets are extremely rare and have only been found at Shichikan Kofun and Nishikoyama Kofun in Osaka Prefecture.

As the keeled helmets of Nonaka were made of leather, the organic material had rotted away by the time of discovery (Fig. 3:5); the auxiliary metal sections, however, remained. A single iron neck plate wrapping around the rear of the head was found, presenting a significant difference from the neck guards of the visored lamellar helmets, which were made by lacing several long, horizontal plates together. Leather was found attached to the inside of the neck plates and the bottom of the feathered helmet ornaments (described

in detail later), confirming that the main body of the helmet was made of leather. Furthermore, the iron bordering that had lined the bottom of the helmet still remained; this thin iron border lining came to a V-shaped point at where the front of the leather helmet would have been, suggesting that it was located at the keeled section of the helmet.

Atop each leather keeled helmet was an ornament. These ornaments comprised a main body and three prongs, to which bird feathers are believed to have been attached. Such feathered helmet ornaments have not been found attached to all keeled helmets, however. The examples from Nonaka have an iron base covered in gilt bronze and are decorated along the edges with wave patterns. While these ornaments are most commonly made of iron, the example found from Mozu-ōtsukayama Kofun in Osaka Prefecture is cast bronze. There are no other examples, however, of such ornaments covered in gilt-bronze, suggesting that keeled helmets with gilt-bronze feathered ornaments were most likely limited to particular individuals among the elite.

(Miyoshi Yūtarō)



Fig. 32 Helmet no. 6 (riveted lamellar helmet with visor)



Fig. 33 Helmet no. 8 (leather keeled helmet)



Fig. 34 Helmets from Nonaka Kofun
(Back row: nos. 2, 3, and 4, from the right; center row: nos. 5, 6, 7, from the right; front row: nos. 8, 9, 10, from the right)

Armor: Terminology

•Terminology of Kofun-period armor

It is not clear what armor was called during the Kofun period. In the early days of modern Japanese archaeology, however, it was common to apply traditional names to archaeological materials; accordingly, the names of armor were drawn from Nara-period documents and research on ancient court ceremonies and customs. Furthermore, naming conventions from the archaeology side combined with the above to form a unique naming system (Suenaga, 1934). Today, an increase in archaeological materials from the Nara period, as well as from Korea and China, has made it readily apparent that a reorganization of terminology is necessary. In this section, the traditional names used for armor will be discussed.

•Armor and helmets

While the Japanese character 甲 can also be read as “helmet” (*kabuto*), the term is consistently used within archaeology to refer to body armor. In contrast, the character 冑 is used for “helmet”. The combination of these two characters thus becomes the general term “armor”. Although Kofun-period armor can be understood as a set of protective gear covering the neck, shoulders, arms, and lower body, in reality, there are frequent cases of cuirasses being excavated without helmets or other auxiliary gear.

•Plate and lamellar armor

Two types of body armor are known from the Kofun period: plate armor and lamellar armor. Plate armor is attested to from the second half of the Early Kofun period through the Middle Kofun period, while lamellar armor appeared during the middle phase of the Middle Kofun period and lasted until the Nara period. The commonly used terms *tankō* (短甲: plate armor) and *keikō* (挂甲: lamellar armor) were borrowed from the Nara-period *Kokka chinpō chō* (A Record of the Nation’s Rare Treasures, a document listing the items once owned by Emperor Shōmu that were dedicated to Tōdaiji by Empress Kōmyō) and applied to the armor of the Kofun period and cannot be considered correct usage. Indeed, while the application of the term *tankō* to plate armor was made by Seki Yasunosuke (1868–1945), an authority on ancient court customs, around the turn of the 20th century (Numata, 1901), archaeologists now recognize that plate armor did not survive into the Nara period. While common, the use of the term *tankō* for plate armor is therefore inappropriate (Miyazaki, 1983; Kondo, 2010). In recent years, *kozaneyoroi* (小札甲) has come to overtake *keikō* (挂甲) as the term for lamellar armor⁽¹⁾; it has been suggested that plate armor should instead be referred to as *itayoroi* (板甲) (Hashimoto, 2009).

•Iron framed cuirasses

Middle-Kofun plate armor was constructed by setting iron plates within a framework comprising a shoulder frame covering the back, an iron base plate that ran along the waist, and two horizontal iron bands that acted as ribs. This characteristic structure became standardized and this type of armor is known as framed armor. Iron plates are found in several different shapes, such as triangular and rectangular, and the joining method of these plates varies from leather lacing to iron riveting. Lacing with leather strings was primarily implemented during the Early Kofun period through the first half of the Middle Kofun period, and riveting techniques were introduced from the Korean peninsula during the middle phase of the Middle Kofun period.

The names of Kofun-period armor and their detailed component parts were established by Suenaga Masao (1897–1991), who analyzed the artifacts of Enshōji-hakayama no. 1 in Nara (Suenaga, 1930). Subsequently, the designation of laced rectangular-plate cuirasses made by Kobayashi Yukio (1911–1989) brought the general categorization of armor to its present state (Kobayashi, 1965).

•Collared cuirasses

This type of cuirass has a collar and strongly protruding shoulder plates. Discovery of these cuirasses is primarily limited to the Kinai area, with three examples found from Nonaka. Cuirasses of this type had been reported from Enshōji-hakayama no. 1 in Nara, but their preservation conditions limited an understanding of their structure at the time. The complete form of the collared cuirass was finally discerned following the excavation of Kurohimeyama Kofun in Osaka from 1947 to 1948, whereby these cuirasses were newly dubbed “collared cuirasses” (Suenaga and Mori, 1953).

•Neck guards and shoulder guards

Akabeyoroi (頸甲) refers to protection for the neck area and *katayoroi* (肩甲) refers to the shoulder guards. Neck guards are thought to correspond to a term found in the 8th-century *Nihon shoki* (in the 14th year of Emperor Kinmei’s reign), and the reading of those characters (頸鎧: *akabeyoroi*) was adopted (Numata, 1901). There is no conclusive evidence, however, that the neck guards of the above text are of the same type as those found from Nonaka (which utilize iron plates). Just as in plate armor, neck guards utilizing either leather binding or iron rivets are found, with the former preceding the latter. Shoulder guards are made by vertically stacking long, curved iron

plates and are connected to the neck guard with leather lacing.

•Keeled and visored helmets

Helmets from the Middle Kofun period come in two types: those with a pointed front like the keel of a warship (“keeled helmets”) and those with a visor in the front like a baseball cap (“visored helmets”). Following the presentation of these classifications by Seki Yasunosuke and Takahashi Kenji (1871–1929), the systematic research of Suenaga Masao (Suenaga, 1930) finalized their detailed naming conventions.

Just as with cuirasses, helmets are classified by the shape of their iron plates and joining methods, such as laced triangular-plate keeled helmets or riveted lamellar helmets with visors. Just as with plate armor, the laced type are older, with the riveted helmets appearing from the middle phase of the Middle Kofun period. Visored helmets are often covered in gilt bronze, suggesting a relation to crowns.

The body of some keeled helmets was made out of leather, which was first discovered through the Nonaka excavation (1964). While the body of Nonaka’s keeled helmets were leather, the neck plates and borders were of iron. Atop each helmet was a three-pronged feathered ornament (三尾鉄: *sanbitetsu* or *mitsuogane*) covered in gilt bronze.

•Other Components

Various auxiliary gear is also known from the Kofun period: iron tassets for the waist, gauntlets for the arms, and greaves for the legs. However, examples are extremely limited. Indeed, only one set of iron tassets was found at Nonaka. Judging by the many armor-shaped *haniwa* depicted with what are believed to be leather tassets, it is likely that organic tassets were common during the Kofun period. (Suzuki Kazunao)

Note

(1) The Japanese term for lamellae, *kozane* (小札), originally referred to small plates approximately one centimeter in width that appeared during the Late Middle Ages; since the Early Modern period, however, larger lamellae have also come to be called *kozane*. Considering this, these should more accurately be called *saneyoroi* (札甲), rather than *kozaneyoroi* (小札甲).

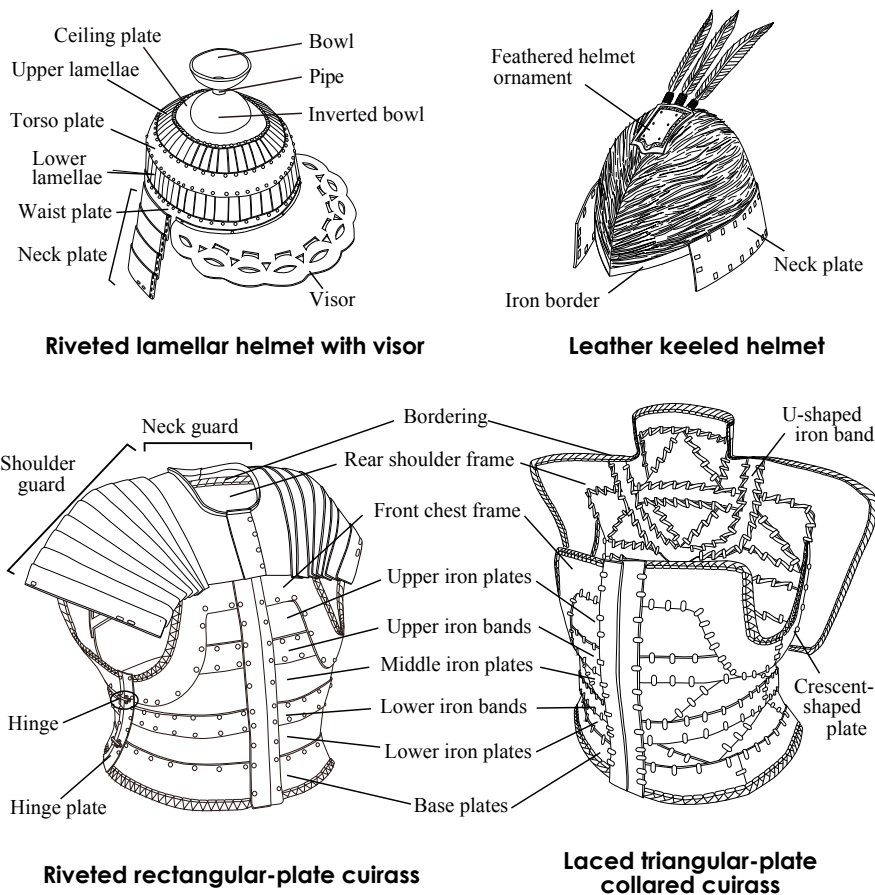


Fig. 35 Components of Kofun-period armor

References

- Kobayashi, Yukio. (1965). *Jingū Ōjin ki no jidai* (The Era of Jingū and Ōjin). *Chōsen gakuho*, 36:25–47.
- Kondo, Yoshikazu. (2010). *Bugu no nihonshi* (Japanese history as seen through armor). Heibonsha shinsho.
- Suenaga, Masao. (1930). *Soekami-gun Obitoke-chō Enshōji-hakayama daiichi-gō kofun no chōsa* (Excavation of Enshōji-hakayama tomb no. 1). *Nara-ken shiseki meisshō ten'nen kinenbutsu chōsa hōkoku*, Book 11. Nara-ken.
- Suenaga, Masao. (1934). *Nihon jōdai no kacchū* (Ancient Japanese armor). Oka Shoin.
- Suenaga, Masao and Mori Kōichi. (1953). *Kawachi Kurohimeyama Kofun no kenkyū* (Research on Kurohimeyama Kofun). Ōsaka-fu kyōiku iinkai.
- Numata, Yorisuke. (1901). *Bicchū-oda gun Niiyamamura Kofun hakken no yoroi ni tsuite* (On the armor found from Niiyamamura Kofun). *Kōkokai*, 1(2):27–30.
- Hashimoto, Tatsuya. (2009). *Kofun jidai kacchū no keishiki meisshō* (Naming the armor of the Kofun period). *Gekkan kōkogaku journal*, 581:27–30.
- Miyazaki, Takashi. (1983). *Bunken kara mita kodai kacchū oboegaki: tankō wo chūshin to shite* (On ancient armor seen in historical texts: with a focus on plate armor). *Kansai Daigaku kōkogaku kenkyūshitsu kaisetsu 30 shūnen kinen kōkogaku ronsō*. Kansai daigaku bungakubu kōkogaku kenkyūshitsu.



Fig. 36 Three-pronged helmet ornaments seen from the top (from the left: helmet nos. 8, 9, 10)



Fig. 37 Three-pronged helmet ornaments seen from the bottom (from the left: helmet nos. 8, 9, 10)

(2) Iron swords and spears

Large numbers of iron single- and double-edged swords and socketed spears were also excavated from Nonaka: 153 single-edged swords, 16 double-edged swords, and three socketed spears. The burial of weapons far exceeding an amount suitable for personal use is rare among the weapons burials of the world and has generated a great deal of debate within Japan.

A majority of the single-edged swords measured between 80–90 centimeters long, indicating a certain level of standardization. In contrast, the double-edged swords were much shorter, averaging 64 centimeters in remaining length. Nevertheless, they can still be classified as “long swords” for the period. As time progressed, double-edged swords increased in length and the examples from Nonaka are a fine representation of this phase’s characteristics.

Iron socketed spears were originally used primarily in Northern Asia. They were optimal for cavalry, as they allowed the wielder to attack their opponent effectively from a distance. Only one spear currently remains and its tip and socket are partially missing. It measures 20 centimeters in remaining length and around 2.9 centimeters at its widest.

While eight single-edged swords were placed alongside the seven sets of riveted armor in row no. 1, the three sets of laced collared cuirasses on the southern end of the row were accompanied by three double-edged swords. It is particularly interesting that the double-edged swords only accompanied the special collared cuirasses. Additionally, the three spears were found in the mass deposit of iron objects in row no. 4. The large number of weapons is believed to have had a symbolic meaning, boasting great military power in an age when iron resources were limited. (Joseph Ryan)

(3) Iron arrowheads

Iron arrowheads are one of the most representative items found buried in *kofun*. While they were originally buried as arrows, their organic shafts decayed, leaving only the iron arrowheads behind. Approximately 740 iron arrowheads were discovered from Nonaka. They were found in ten groupings, each grouping likely the remains of a bundle of arrows.

They can be divided into five major types. The first are willow-leaf shaped barbed arrowheads (Fig. 38:1, 2) and the second are narrow S-shaped arrowheads (Fig. 38:3, 4). The S-shaped examples are all in their final typological forms and the elongation of their blades has greatly weakened their curvature. The willow-leaf shaped barbed arrowheads and S-shaped arrowheads can both be traced back to the 3rd to 4th centuries. The third type are short-necked arrowheads,

which have a short rod between the blade and the organic shaft (Fig. 38:5); this type first appeared in the early 5th century under influence from the Korean peninsula. These three types are older styles representative of the period before the construction of Nonaka.

In contrast to the above, the long-necked single-barbed arrowheads (Fig. 38:7) and standard long-necked arrowheads (Fig. 38:6) were typologically the newest at the time of Nonaka’s construction. The former have a barb on the neck, independent of the blade, and are most commonly found in armor burials. The latter were created under influence from the peninsula; those from Nonaka are some of the earliest examples of this type. The breakdown of each type is shown in Table 1. It is apparent that the older types of arrowheads common prior to Nonaka were numerically superior to the newer types, which accounted for only slightly over 10% (94 examples) of the 740 total arrowheads. Nonaka can therefore be understood as marking a transitional phase.

It is interesting that the new long-necked single-barbed arrowheads were buried near the center of row no. 2 near the stoneware. Furthermore, this bundle was made up solely of this type, suggesting that it held a special significance. Additionally, as the short-necked and S-shaped arrowheads from row no. 3 were typologically older than the arrowheads from row no. 2, it is likely that they were deliberately separated at burial.

The arrowheads of Nonaka share common characteristics with those found across the Japanese archipelago, supporting the assertion that the Furuichi Kofun Group served as the source for the spread of similar weapons.

(Miyoshi Yūtarō)

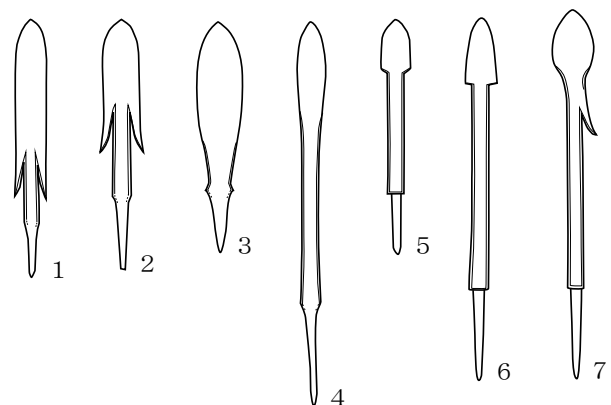


Fig. 38 Types of iron arrowheads



Fig. 39 Iron swords (eight on left: single-edged; remaining two: double-edged)



Fig. 40 Iron arrowheads and socketed spear

Table 1 Typological breakdown by group of iron arrowheads from Nonaka Kofun

Type \ Group	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10	Fig. 40
Barbed willow-leaf	1		44						17		1-8
S-shaped	29					47	48	13	9		9, 15-17, 22-25
Short-necked	42		44						17	8	10-14
Long-necked, single-barbed					45						18, 19
Long-necked							49				20, 21
Unknown	10	16	3	17	0	0	0	86	109	7	
Total (current)	82	42	47	45	45	48	97	128	188	15	

These numbers do not match those of the original site report.

3

TECHNOLOGICAL INNOVATION AND MORTUARY RITUAL

(1) New tools and the age of major land development

During the age of the Five Kings of Wa, weapons and armor had special value as symbols of military power. However, it was also an age in which there were significant changes seen in land development and tools for daily life. It can be understood as an epoch in the spread of iron tools.

The construction of Nonaka coincided with the transmission and spread of sophisticated farming tools from the southern Korean peninsula. Interestingly, Nonaka not only saw the burial of such new, sophisticated tools, but also of a great number of older types, as well. This suggests that Nonaka was constructed during a transitional phase.

The sophisticated tools included U-shaped blades and curved-edge sickles, both of which represented strong influence from the peninsula. The spread of these highly efficient iron tools enabled an increase in farmland cultivation. Although there is not sufficient evidence to demonstrate that rice paddies, themselves, increased, the number of settlements and dwellings did following the construction of Nonaka. Naturally, such a population growth would have required an increase in the harvest.

On the other hand, some of the tools excavated from *kofun* are quite small or were not equipped with a wooden handle, suggesting that they were not intended for actual use. Debate continues over the significance of the burial of such tools. In any case, it is undeniable that the occupant of Nonaka and those surrounding him exerted continued influence over the control of production tools and were able to channel foreign information earlier than others.

Square and U-shaped blades Farmers of the Kofun period used hoes and spades to clear land and cultivate. Iron farming tools of the Kofun period were attached to a wooden handle or base. During the time of Nonaka, grooved U-shaped blades appeared for use in moving earth, in addition to the former square-shaped iron blades made by folding both ends inward. U-shaped blades would soon overtake the square blades. Of course, these two types differed not only in their performance, but also in the nature of their burial. In powerful *kofun*, such as Nonaka, in which square blades were buried, the burial of a large number of tools can be witnessed; in contrast, after the spread of U-shaped blades, the quantity of buried tools greatly declined, along with the burial of other iron objects.

Iron sickles Just as today, sickles are considered to have been used for cutting weeds and rice stalks. The sickles from Nonaka include two types: hand sickles for harvesting rice stalks and curved-edge sickles for removing roots and weeds. While the curved-edge sickles are fewer in number and in poorer condition than the other farming tools, they nevertheless typify the 5th-century epoch of farming tools, along with the U-shaped blades that appeared shortly after.

Iron axe heads Although some iron axes may have been used as weapons, a majority of them were used for felling trees or processing lumber. The axe heads from Nonaka display a wide variety in the design of the shoulder between the socket and the blade in comparison with those from other *kofun*. Differences in the technological level seen in the sockets suggest the existence of multiple workshops. There are not many cases in which axe heads of different shapes or made with different methods are buried in the same *kofun*; especially in the Kinki region, such cases are rare.

Knives, planes, and chisels Spear-style planes are thought to have been used for peeling away bark to smooth the surface of wood. As for knives, between the second half of the 4th century and the 5th century, many stone imitations were made. While a large number of stone imitation knives were found from Nonaka, only a few iron examples were uncovered; they are thus important when considering the mortuary ritual. Other tools include chisels. A variety of craft tools were found in addition to the farming implements, giving Nonaka an almost comprehensive spread of the tools used in the burial ritual.

These changes indicate that daily life, which was dependent on wet-rice farming, underwent significant changes during the age of the Five Kings of Wa. During this period, the number of buildings with pillars embedded in the ground increased in addition to the number of settlements. The spread of new, efficient tools surely promoted the digging of irrigation canals, tree-felling, and woodworking. It is possible to decipher from these small iron tools that the period was one of extensive land development.

Iron nails and wooden boxes It is believed that the burial goods of Nonaka were placed into several wooden boxes. Iron nails were found from the four corners of each row of burial goods, suggesting that they joined the sides of the wooden boxes together. Most of the 19 nail fragments still have wood attached. These are therefore some of the oldest examples of wooden boxes or coffins using iron nails, as previous wooden boxes were made by simply combining boards. This also suggests considerable changes in woodworking.

Iron ingots Iron ingots are raw materials for ironworking and numerous examples have been found from the 5th century. In the Japanese archipelago, they are often found from *kofun* and settlements involved in rituals or ironworking; they are mostly found in the Kinai area and its periphery.

Most of those unearthed from Nonaka were broken and did not maintain their original positions; as they were found overlapping, however, they were likely to have been buried in bundles. Of the complete examples, the larger ones weigh



Fig. 41 Iron tools and farming implements

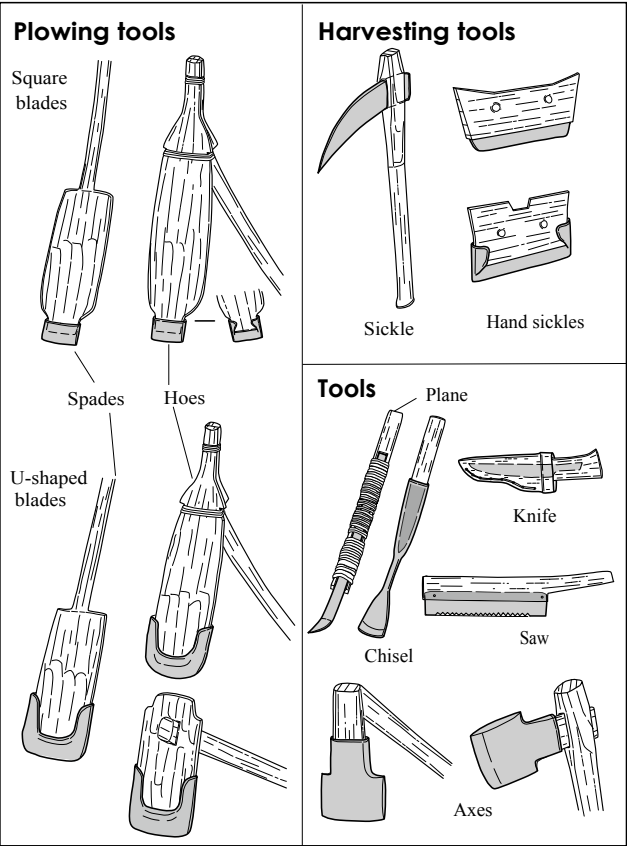


Fig. 42 Types of tools



Fig. 43 Iron nails



Fig. 44 Iron ingots

120 to 130 grams each, while smaller ones weigh 50 to 60 grams each. The total weight of the mass of fragmented pieces at the time of excavation was about 36 kilograms.

This total weight suggests that hundreds of ingots had been buried. This is the second greatest number excavated from a single *kofun* within Japan, following Yamato no. 6 in Nara Prefecture. Excluding these two cases, there are no examples of burials over 50 pieces. Turning to the Korean peninsula, while some tombs were buried with over 1,300 ingots, such as the Hwangnam Great Tumulus in Kyongju, many contain less than that of Nonaka.

While many of the tombs from the Korean peninsula may not have been buried with more ingots than Nonaka, ingots are found from many tombs from all over the region. As the Wa of this period were unable to smelt iron, they depended on the peninsula for imports. The iron ingots from Nonaka are therefore believed to have been imported to assist the massive demand for ironworking in the 5th century. The ingots from Nonaka have an irregular shape: one side of the rectangular plate opens widely to the outside, while the other side is club-shaped. Ingots of this shape can be found in Gaya tombs on the Korean peninsula. (Takeuchi Yūki)

(2) Interaction within East Asia as seen through pottery

A significant amount of stoneware and early Sue ware was uncovered from Nonaka, which is rare for 5th-century *kofun*. Both were fired at high temperatures exceeding 1,000°C, making them much harder than earthenware. Stoneware here refers to such pottery made on the Korean peninsula, while Sue ware refers to examples made

domestically. As both the production technology for Sue ware and the tunnel kiln used for firing it were introduced from the peninsula around the beginning of the 5th century, early Sue ware is incredibly similar to imported stoneware, making them difficult to distinguish. While this is also true for the examples from Nonaka, it is assumed that both types were buried. Numerous pieces of Haji ware were also found from Nonaka. A reddish-brown, soft earthenware, Haji ware was fired in the open, in contrast to a closed tunnel kiln.

Stoneware and early Sue ware As many as 6,700 fragments of stoneware and early Sue ware were unearthed from the top of Nonaka's earthen mound. The majority of the pottery from Nonaka was found in pieces atop the mound, suggesting that the participants in the mortuary ritual intentionally broke them as offerings.

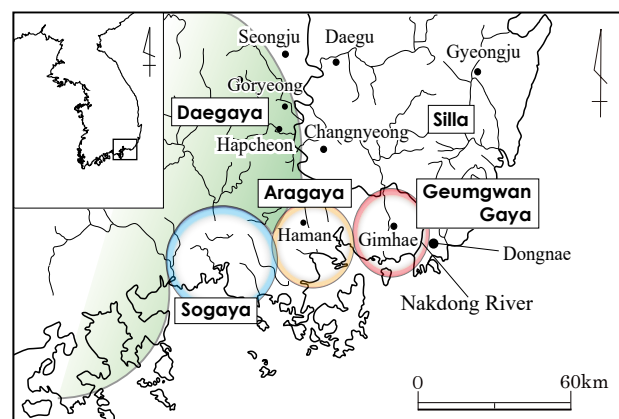


Fig. 45 Political map of the southeastern Korean peninsula



Fig. 46 Miniature jars with handles and lids



Fig. 47 Stoneware and Sue-ware jar, pottery stands, and footed jar

Examples from atop the mound include fragments of pottery stands and pots with a variety of patterns, which can be largely classified into six types: wave, diagonal lattice, comb pointed, braid cord, sawtooth, and round pipe patterns (Fig. 48). Of the fragments, those with wave patterns accounted for a quarter of the total, while other patterns accounted for around 1% or less. Wave patterns were often accompanied by a band.

Comparing these patterns with those of the Korean peninsula, similarities are found with the stoneware of the Nakdong River Basin, at the southernmost end of the Korean peninsula, suggesting interaction with this region. Not only weapons and tools, but also pottery suggests strong ties between Nonaka and the peninsula.

Pottery can be grouped largely into two types based on color: reddish brown and blue gray or yellow gray. Furthermore, while most of the examples that can be restored are finely made, some are rather crude, suggesting the existence of numerous craftsmen.

In addition to the mound top, stoneware in almost complete condition was found from row no. 2. All are small in size, composed of four small handled jars and three lids. However, judging from their patterns and sizes, these jars and lids were most likely not original pairs. These small stoneware examples were obviously treated differently from those unearthed from the mound top and were likely specially deposited. Their shapes suggest that they were brought from the southeastern part of the Korean peninsula.

(Saeki Ikuno)

Haji ware Some 2,000 Haji-ware fragments were unearthed from Nonaka and are believed to have been ritually destroyed at the mound top, the same as with the Sue ware.

The ritual server (Fig. 50, rear left) and the pedestaled dish with lid (Fig. 50, rear right) remain relatively intact.

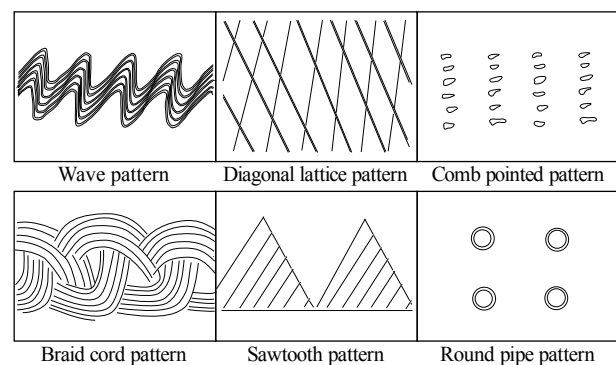


Fig. 48 Designs found on stoneware and Sue ware

The ritual server, preserved completely except for the rim, has a circular hole in the middle of the body, which is believed to have held a pipe (perhaps of bamboo) to form a spout. While this design is common for Sue ware, it is not often seen in Haji ware, although rare examples have been found from settlements. They are believed to have had a ritual purpose. The find from the top of Nonaka's mound is indeed a peculiar example.

As for the pedestaled dish with lid, the body of the dish measures 7.5 centimeters in height and the lid has a cylindrical knob. From the number of knob fragments, there would have originally been 40 such lidded dishes. Not only is the shape of the knob unique, but most Haji ware is usually not equipped with a lid. The shape of the dish's rim and the existence of a lid catch suggest influence from stoneware or Sue ware. Haji-style pedestaled dishes are extremely rare and have only been found from such sites as Furu and Tomondo-higashi in Nara and Narukami in Wakayama.

The remaining Haji ware were all fragments, including 57 feet from pedestaled dishes, 40 lid knobs, eight pot rims, and eight fragments of jars with composite rims. As many of the fragments cannot be classified, the exact type composition cannot be reconstructed, but the proportion of pedestaled dishes seems to be high.

The majority of Haji ware from Nonaka are small serving dishes, while the stoneware and early Sue ware are primarily jars and accompanying stands; there are only a few Sue pedestaled dishes. We can thus infer a functional differentiation between them within the Nonaka mortuary ritual: perhaps alcohol and fresh water was stored within the Sue jars placed atop the stands, while food and drinks in the Haji pedestaled dishes were placed before important participants.

The shapes and production techniques of the Haji ware suggest interaction with the stoneware and Sue-ware craftsmen; the Haji ware thus provides valuable information concerning the ceramic industry within Japan when Sue-ware production first began. Interaction between East Asian polities can thus be understood to have even influenced the native Haji ware.

(Kirii Riki and Nakakubo Tatsuo)



Fig. 49 Sherds of stoneware and Sue-ware jars and pottery stands



Fig. 50 Haji ware

(3) Kofun rituals, *haniwa*, and stone objects

The burial goods from Nonaka exhibit a number of advanced technologies, as seen in its armor, tools, and Sue ware. On the other hand, traditional aspects can also be witnessed.

Cylindrical *haniwa* Earthenware funerary sculptures called *haniwa* were placed atop the *kofun*, with the cylindrical *haniwa* the most common. At Nonaka, cylindrical *haniwa* were placed on the mound top and flat surfaces prepared on the slope of the mound. They were placed in a repeating pattern of three cylindrical *haniwa* followed by *haniwa* with a flaring mouth (rim).

One characteristic of the arrangement of *haniwa* within the Furuichi Kofun Group is that cylindrical *haniwa* of different diameters were placed side by side. Indeed, *haniwa* of three different diameters were used at Nonaka. The larger type has a clay band running around the rim and the smaller type has an incision around the rim (perhaps by a pallet-like tool). Others have geometric engravings near the rim (Fig. 55).

While cylindrical *haniwa* may seem simple in design, their morphological characteristics and production techniques tell us when they were made. Therefore, even if the burial facility of a *kofun* has not yet been excavated, the surrounding *haniwa* may enable archaeologists to assign a construction period. As not all *kofun* in the Furuichi-Mozu Kofun Group have been excavated, *haniwa* offer invaluable clues as to their construction periods.

One tool for determining the age of cylindrical *haniwa* are striated marks found on the outer surface (Fig. 54). These are markings from a tool used by the craftsman to

finish the surface, which archaeologists refer to as “brush marks”.

There are two types of brush marks on the cylindrical *haniwa* found from Nonaka: one in which the tool was stopped to leave an almost completely vertical mark and the other in which the tool left diagonal marks. The former is found from older *kofun* dating to the early 5th century, while the latter became common from the second half of the 5th century. Through a comparative analysis of *haniwa* within the Furuichi Kofun Group, it becomes possible to position Nonaka’s *haniwa* as newer than those of Kondagobyōyama, which has a larger proportion of vertical brush marks, and older than those of Ichinoyama, which has a larger proportion of diagonal brush marks. Nonaka’s *haniwa* display a strong similarity to those of Daisen-ryō in Mozu.

Representational *haniwa* Representational *haniwa* were designed after various objects, humans, and animals. Representational *haniwa* found from Nonaka include quiver-, enclosure-, sunshade-, and armor-shaped *haniwa*. Additionally, an excavation by the Fujiidera City Board of Education unearthed shield-shaped and waterfowl-shaped *haniwa*, as well.

While house- and rooster-shaped *haniwa* can be found from early periods, human-shaped examples date to a relatively later phase. Nonaka was constructed during the period when various other representational *haniwa* first appeared. These representational *haniwa* also provide useful clues for dating a *kofun* or reconstructing the rituals conducted therein.

Sunshade-shaped *haniwa* Sunshade-shaped *haniwa* were modeled after the sunshades used by individuals of high rank. They were made over a long period of time, from the



Fig. 51 Cylindrical *haniwa* uncovered during excavation

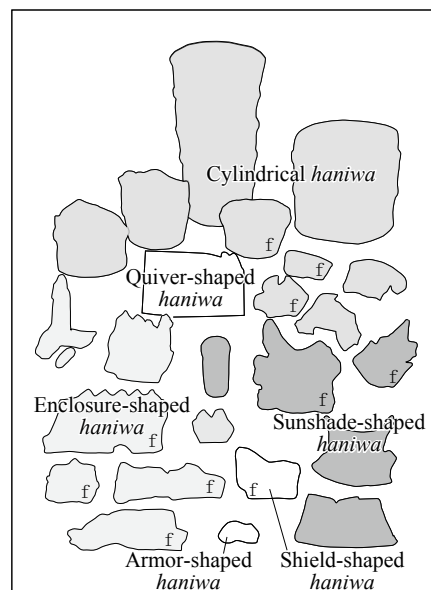


Fig. 52 Layout of *haniwa* (see Fig. 53; f marks *haniwa* owned by the Fujiidera City Board of Education)



Fig. 53 Cylindrical and representational *haniwa* (some owned by the Fujiidera City Board of Education)

appearance of representational *haniwa* to their decline (refer to Part 2, pp. 80–81).

While there are no fully intact sunshade-shaped *haniwa* in the Osaka University collection, the receiving base and the canopy are in relatively good condition and retain their original red pigment.

The shape of sunshade-shaped *haniwa* varies slightly depending on the period. In the case of the Nonaka example, the depiction of the cloth stretched over the canopy is no longer three-dimensional, but rather represented simply with three engraved lines; additionally, a clay band is attached to the edge of the canopy. Similar canopies have been excavated from the Shōningahira Kofun Group in Kyoto and the Heijō Palace site substratum. Accordingly, this type of sunshade-shaped *haniwa* can be said to have been typologically new at the time of Nonaka's construction.

Their ornamental sections are equipped with square windows; some have incisions on both sides, while others are of a simplified design with no patterns. From the shape and patterns of the canopy and ornamental sections, it is possible to situate Nonaka at a newer phase than the adjacent Hakayama Kofun.

Enclosure-shaped *haniwa* The number of enclosure-shaped *haniwa* excavated thus far is relatively small compared with sunshade-shaped *haniwa*. Some are thought to have functioned as a blind surrounding house-shaped *haniwa* or water ritual facilities; others may have had a more abstract meaning as a blind enclosing sacred ground. Since the enclosure-shaped *haniwa* excavated by the Fujiidera City Board of Education have different incisions than those in the Osaka University collection, we can infer that there were originally several arranged at Nonaka. Although enclosure-shaped *haniwa* have been found from Nonaka, no house-shaped examples have been discovered.

In the Osaka University collection of enclosure-shaped *haniwa* is a fragment that appears to be the entrance section; it has a dimple that would seem to have held a miniature door shaft (Fig. 56). Indeed, a shaft-like piece was found among the unearthed *haniwa* fragments, suggesting that they

may have been originally combined.

Armor-shaped *haniwa* Armor-shaped *haniwa* include representations of cuirasses and helmets. A *haniwa* representing the neck plate of a helmet was found from Nonaka. Actual Kofun-period helmets include visored helmets, keeled helmets, and lamellar helmets; the Nonaka example is believed to represent a keeled helmet. The details of the neck plate are simple incisions and not three dimensional. While no cuirass-shaped *haniwa* have been found from Nonaka, it is believed to have originally been part of such a pair.

Quiver-shaped *haniwa* The quiver-shaped *haniwa* of Nonaka has S-shaped arrowheads represented in incisions. These types of arrowheads were also found from the burial facility, but they are not seen in the phases following Nonaka. While early quiver-shaped *haniwa* were finely made large-size examples with beautiful *chokkomon* (intersecting lines and arcs) designs, the pattern on the Nonaka example is highly simplified and crude. We can therefore conclude that it is newer than the examples from the adjacent Hakayama Kofun. (Tachibana Izumi)

Stone and earthenware objects Many stone and earthenware objects were found from Nonaka. The stone



Fig. 54 Examples of brush marks on a cylindrical *haniwa*



Fig. 55 Fine incisions on a cylindrical *haniwa*



Fig. 56 Enclosure-shaped *haniwa* (entrance seen from interior)

objects include imitation objects, spindle whorls, cylindrical beads, curved beads, and a stone mortar and pestle. Earthenware spindle whorls have also been found.

Made of talc and other materials, stone imitation objects were modeled after various tools. Used in ritual, they can be seen from the mid-4th century. Stone imitation objects from Nonaka were all unearthed from the mound top, including objects modeled after knives, axe heads, and sickles.

Knife-shaped objects were found in the greatest amount: a total of 81 knives, including fragments. They are found in many shapes, including thick examples with a rounded back and thin examples without a step between the grip and sheath. Others have lost their realism: for example, those with their depiction of leather lacing reaching the grip, instead of stopping at the base of the sheath. Other examples represent unsheathed knives. It would seem that a wide variety of knife-shaped objects had been intentionally collected.

Axe head- and sickle-shaped stone imitation objects are more or less faithful to their models and found in smaller numbers. This suggests that different types of stone objects had different functions.

Over time, the designs of the imitation objects moved increasingly away from their original models. Nevertheless, they underwent unique changes as stone imitation objects, while consistently being influenced by the objects they were meant to depict. As a result, a great variation can be seen, as attested to in the artifacts from Nonaka.

The two cylindrical beads were both made of coarse jasper and were excavated near the layer of cinnabar in row no. 2. They were both cut diagonally on one side. It is believed that they were originally one piece that had been reworked after breaking; this may suggest long-time use.

The stone mortar and pestle made of sandstone was excavated from row no. 3. As they were both stained red, they are believed to have been used to grind cinnabar for ritual.

An additional excavation by the Fujiidera City Board of Education in 1990 revealed a great number of artifacts from the side of the mound, including mortar-shaped beads, sword-shaped talc imitations, and perforated discs (perhaps imitating mirrors). Because the composition differs from that found on the mound top, it can be inferred that different rituals took place at different sections of the mound.

Although many iron weapons and armor were found from Nonaka, many ritual objects were found, as well. While the strong military nature of Nonaka cannot be denied, a consideration of the strong ritual aspect is also needed to properly understand the political situation of the time.

(Ueda Naoya)

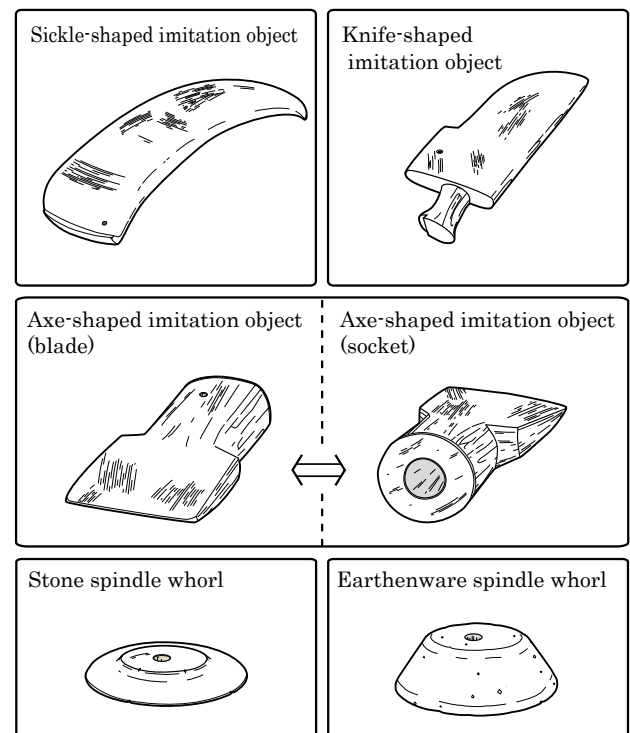


Fig. 57 Types of talc and earthenware objects



Fig. 58 Stone mortar and pestle



Fig. 59 Sword-shaped talc imitations, perforated discs, and curved (*magatama*) and mortar-shaped (*usudama*) beads (artifacts owned by the Fujiidera City Board of Education)

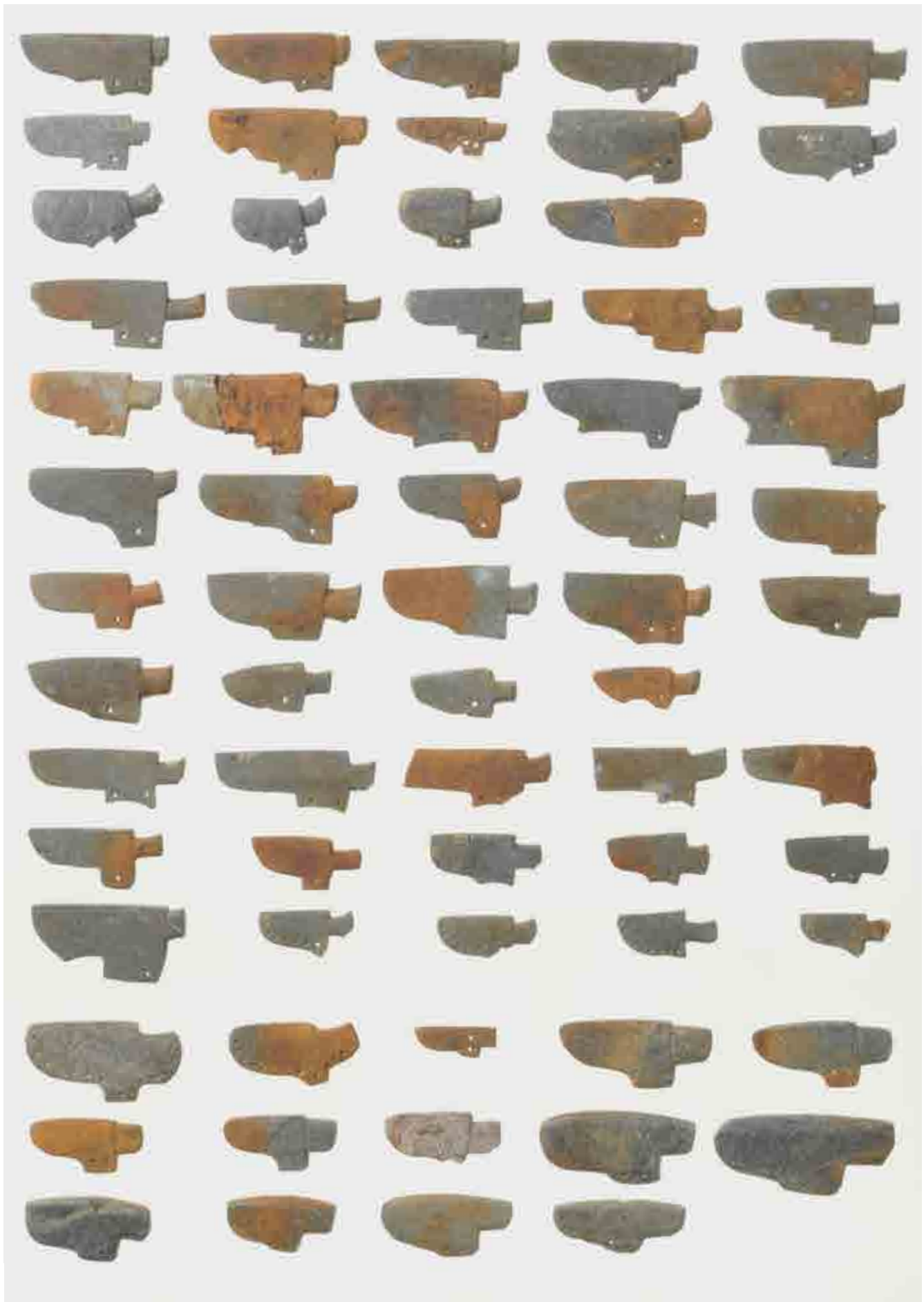


Fig. 60 Knife-shaped talc imitation objects

4 THE FORMATION AND DEVELOPMENT OF THE FURUICHI KOFUN GROUP

(1) Prelude to the Furuichi Kofun Group

The items buried in Nonaka provide many clues for understanding the age of The Five Kings of Wa. In this chapter, we will widen our perspective to focus on the surrounding Furuichi Kofun Group and its environs.

Many *kofun* were already being built in southern Kawachi in the 3rd and 4th centuries, before the construction of the Furuichi Group, such as Manai and Matsuokayama. Recent investigations have revealed the existence of Niwatorizuka Kofun at the southern end of the group. Its burial goods include a triangular-rimmed deity-and-beast mirror (hereafter abbreviated to “TR mirror”). Debate continues over the relationship between the political group that built the Furuichi Group and that which built the previous *kofun*. This section will provide an overview of the *kofun* preceding the Furuichi Group, focusing on those excavated by Osaka University.

Manai Kofun is a round keyhole tomb built at the beginning of the 4th century. Measuring 60 meters, it is located on the eastern end of the Habikino hills, along the western bank of the Ishikawa river. Lined with paving stones and *haniwa*, its burial facility was a clay-encased wooden coffin and its burial goods included TR three-deity three-beast mirrors with a beast motif band, fragments of deity and beast mirrors with an image band, jasper spindle whorls, iron axe heads, iron swords, iron arrowheads and tools, and earthenware. As one of the oldest *kofun* to have a clay-encased coffin, it has significant academic importance.

More than 14 *kofun* were built in the Tamateyama Kofun Group on the Tamateyama hills, which stretch southward along the eastern bank of the Ishikawa river. To the south is Komagatani-kita Kofun, a round keyhole tomb measuring around 55 meters. It was equipped with a clay-encased wooden coffin and was buried with TLV mirrors and iron swords. Even further south was Komagatani-miyayama Kofun, a round keyhole tomb measuring approximately 60 meters in length. The round section of the *kofun* had a pit-style stone chamber and the square section had two clay-encased coffins. It is believed that different burial facilities within the same *kofun* represented status differences between the occupants. Burial goods included TR three-deity three-beast mirrors with a beast motif band, perforated mirrors, and personal ornaments.

The Matsuokayama Kofun Group is also important in considering the political situation of the region. Nukudani-kitazuka Kofun, built adjacent to the central 140 meter-long Matsuokayama Kofun, was discovered during housing land development. While the shape and size of the *kofun* are unknown, having been destroyed in the development, the northern half of the clay encasing fortunately survived. From inside were discovered three mirrors, including a TR mirror, iron swords and axes, and personal ornaments such

as *magatama*, cylindrical beads, and stone bracelets.

The *kofun* mentioned above are significantly different in scale from those of the following Furuichi Kofun Group, a testament to the remarkable development that occurred in the late 4th century. On the other hand, many small round and square *kofun* were built surrounding the keyhole-shaped Matsuokayama Kofun, suggesting that the relationship between the main tomb and surrounding satellite tombs, representative of the Furuichi Group, can already be seen from this phase.

There was also a significant difference in their burial goods composition: in contrast to the great numbers of

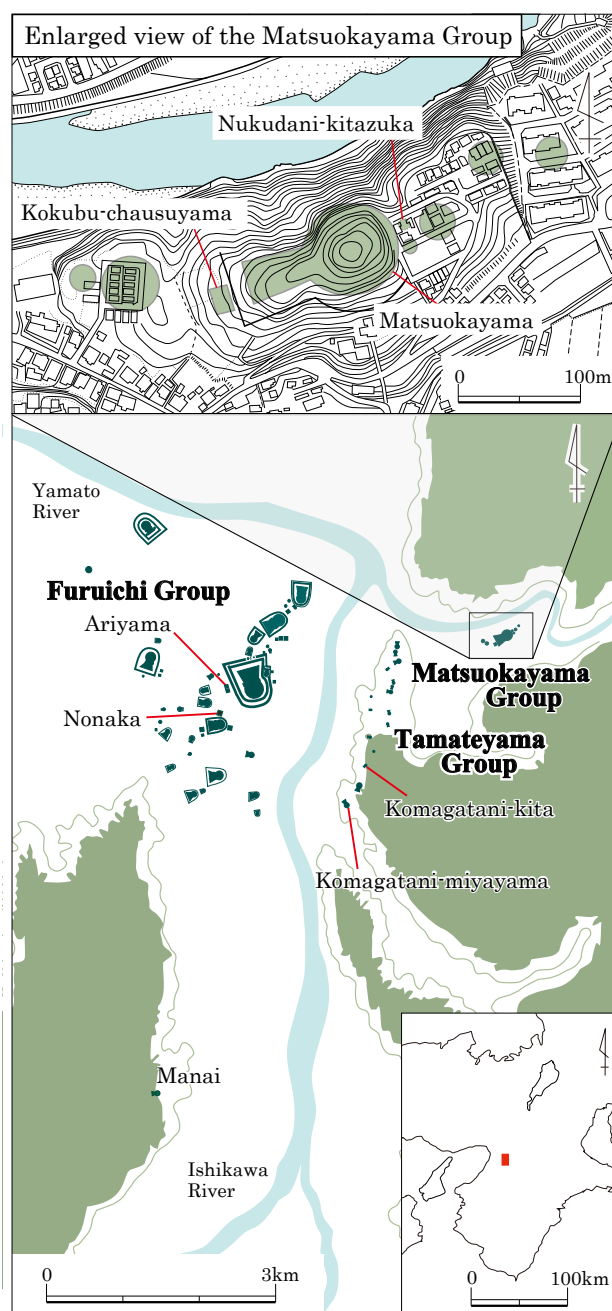


Fig. 61 Furuichi Kofun Group and its environs



Fig. 62 Imported triangular-rimmed three-deity three-beast mirror with beast motif band from Manai Kofun



Fig. 63 Domestic triangular-rimmed three-deity three-beast mirror with beast motif band from Komagatani-miyayama Kofun



Fig. 64 Domestic triangular-rimmed three-deity three-beast mirror from Nukudani-kitazuka Kofun (mirror no. 3) (bears auspicious inscription “of singular wonder”)



Fig. 65 Domestic triangular-rimmed three-deity three-beast mirror from Nukudani-kitazuka Kofun (mirror no. 2) (bears auspicious inscription “of singular wonder”)



Fig. 66 Burial goods from Manai Kofun



Fig. 67 Haji ware from Manai Kofun



Fig. 68 TLV mirror from Komagatani-kita Kofun



Fig. 69 Stone bracelets from Nukudani-kitazuka Kofun



Fig. 70 Beads from Nukudani-kitazuka Kofun

weapons and armor in the *kofun* of the Furuichi Group, these earlier *kofun* had many bronze mirrors. This suggests that a major change occurred in this region on the eve of the Furuichi Group that resulted in the rapid growth of this political group. The burial goods of Nonaka can be understood as resulting from this change. (Ueda Naoya)

(2) Hakayama Kofun, Konda-gobyōyama Kofun, and their satellite tombs

Nonaka Kofun and Hakayama Kofun In the following section, we will examine the Furuichi Group of the 5th century. The Furuichi Group of this period is characterized by the presence of large mounds (such as Hakayama Kofun) surrounded by smaller satellite tombs (such as Nonaka).

As mentioned above, Hakayama Kofun is a three-tiered round keyhole tomb located in Habikino City, near the center of the Furuichi Group. Measuring 225 meters long, it is one of the larger *kofun* in this group. The mound is surrounded by moats and embankments and has platform-like projections on both sides. While details of the burial facility are unknown, as it is designated as the 5th satellite tomb of Emperor Ōjin's mausoleum by the Imperial Household Agency, it was once reported that the lid of a stone coffin with a hexagonal pattern was sticking out of the ground. This type of coffin was also found from Tsudō-shiroyama Kofun (Osaka) and Muromiyayama Kofun (Nara), suggesting that it belonged to the highest elite.

Excavated items include talc *magatama* and representational *haniwa* (house-, sunshade-, shield-, quiver-, cuirass-, and human-shaped). The human-shaped *haniwa* is the fragment of a face; much larger than that of a normal human-shaped *haniwa*, it is believed to be an early example of a shield-holding figure-shaped *haniwa*.

The most notable of Hakayama's *haniwa* is the laced collared cuirass-shaped *haniwa*. Its notability is not only due to the fact that very few examples have been found, but also because it is so elaborately constructed. As for actual collared iron cuirasses, only ten or so have been found, three of which were from Nonaka. It is uncertain as to whether a collared cuirass was also buried in Hakayama.

In addition to Nonaka, Mukōhakayama, Jōganjiyama, and Nishihakayama were also built surrounding Hakayama. A major deposit of iron objects was also found from Nishihakayama. All four are square-shaped and considered the satellite tombs of Hakayama (see Column 3). The grounds for identifying Nonaka as a satellite tomb of Hakayama are weaker than those for the other three *kofun*, as Nonaka was not only constructed slightly later, but the main axis of both Nonaka and Hakayama point in different directions. Nevertheless, the discovery of the cuirass-shaped *haniwa* from Hakayama and the large amount of iron goods from Nonaka suggest a profound connection between the two.

(Tachibana Izumi)

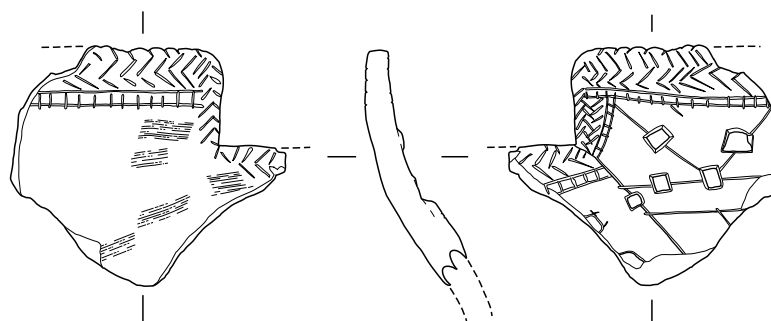


Fig. 71 Line drawing of collared-cuirass *haniwa* fragment from Hakayama Kofun



Fig. 72 Photo of collared-cuirass *haniwa* fragment from Hakayama Kofun (owned by the Kyoto University Museum)

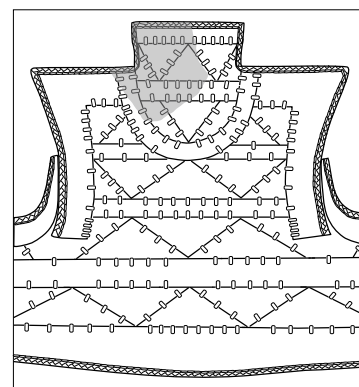


Fig. 73 Diagram of collared cuirass no. 10 from Nonaka Kofun (seen from rear); shadowed section indicates area represented by collared-cuirass *haniwa* fragment from Hakayama Kofun

Konda-gobyōyama Kofun and its satellite tombs Konda-gobyōyama Kofun (traditionally designated as Emperor Ōjin's mausoleum) is a giant round keyhole tomb in the Furuichi Kofun Group. Measuring 415 meters, it is second in length only to the 486 meter-long Daisen-ryō (designated as Emperor Nintoku's mausoleum). In terms of volume, however, it is the largest *kofun* in Japan. From its *haniwa* and mound shape, it is dated to the early 5th century. While its burial facility has not been excavated, the Konda-hachimangū shrine is in possession of an oblong chest-shaped stone coffin fragment presumably belonging to this *kofun*. Normal and flared-mouth cylindrical *haniwa*, shield-, house-, waterfowl-, quiver-, and sunshade-shaped *haniwa*, and early Sue ware have been found. The *haniwa* was fired in a tunnel kiln using the same technology as Sue ware.

While Konda-gobyōyama is surrounded by many *kofun*, not all of them can be categorized as satellite tombs. Taking into consideration their period of construction and distance from the main tomb, six out of the twelve surrounding tombs can most likely be included: Konda-maruyama and Ōkamizuka to the north, Higashiyama and Ariyama to the west, and Kurizuka and Higashi-umazuka to the east. Of these, Konda-maruyama is believed to be of a slightly newer construction.



Fig. 74 Northern burial facility of Ariyama Kofun (1)



Fig. 75 Northern burial facility of Ariyama Kofun (2)

The *kofun* that has attracted the most attention is Ariyama, which was excavated by Osaka University. Located to the west of Konda-gobyōyama, it is a square tomb measuring 45 meters to a side and 4.5 meters in height. It is dated to the early 5th century. The mound was equipped with paving stones and cylindrical and representational *haniwa*. While the central and southern facilities had been looted, a large quantity of iron objects was nevertheless found. The considerable amount of red pigment found in the central facility suggests that there may have been a human interment. In contrast, the northern facility contained so many burial goods as to make human burial unlikely: over 2,700 iron objects, including 1,542 arrowheads (comprising two types: double-barbed and triangular), 77 single-edged and eight double-edged swords, eight tanged spears, and a socketed spear. Additionally, around 650 tools were also found, including 201 iron sickles, 134 iron axes, 49 spade or hoe blades, and 151 knives with curled handles. Furthermore, 412 pieces of S-shaped iron objects of unknown use were also discovered.

The only other satellite tomb of Konda-gobyōyama whose contents are known is Konda-maruyama, a round *kofun* to the north of Konda-gobyōyama's square mound. Measuring 45 meters in diameter and six meters in height, it sits mostly on the latter's central axis, cutting into its outer moat. Paving stones, cylindrical *haniwa*, and house-, sunshade-, and quiver-shaped *haniwa* have been found. It is surrounded by a moat and may have originally had a side projection. Artifacts include fragments of a riveted cuirass, sword fittings made of deer antler, iron swords, single-edged long-necked iron arrowheads, and gilt-bronze horse trappings. The latter have been designated national treasures.

The types of satellite tombs Several patterns can be detected in the burial goods of satellite tombs: indeed, the types of artifacts and their respective amounts differ significantly between Ariyama and Konda-maruyama. While the latter was buried with what are considered the personal luxury items of the upper elite, the former was buried with a massive deposit of iron goods, similar to Nonaka and Nishihakayama. Satellite tombs can thus be roughly divided into two groups based on their burial goods: those with no significant differences from other independent tombs and those with massive deposits of goods.

There were also differences in the types of goods emphasized within mass burials. For example, while Ariyama's northern facility and Nonaka were buried with 1,542 and 740 iron arrowheads, respectively, no iron arrowheads were discovered from Nishihakayama. Meanwhile, while Nishihakayama had more than 1,088 tools and Ariyama's northern facility had around 650 tools, Nonaka only had around 141 tools; even taking looting into consideration, the difference is stark. Although all of these

small *kofun* contained mass deposits of iron goods and were located adjacent to a larger main tomb, they likely had slight functional differences.

Certain similarities can be found, however, between Nonaka and Konda-maruyama: namely, they were both built some time after the construction of the main tomb. This issue will no doubt influence how we understand the nature of satellite tombs and their relationship to the main tomb. In other words, after the death of the main tomb's occupant and until the time of the satellite tomb's construction, the next leader (to be buried in the next main tomb) would have been in power. Why, then, was the satellite tomb buried next to the former leader, rather than the successor? Assuming positions were institutionally fixed, the tomb of a subordinate who retained his office until the time of the next leader would likely have been built as a satellite next to the successor's tomb. Considering, however, that Nonaka and Konda-maruyama were built next to their respective main tombs some time after the latter's construction, we may perhaps assume a more personal, rather than institutional, relationship.

Much is still unknown concerning the *kofun* of the Furuichi Group. The small number of *kofun* that have been excavated, however, provide invaluable tools to understand the political structure of the time. (Joseph Ryan)

(3) East Asia and the Furuichi-Mozu Kofun Group

During the age of the Five Kings of Wa and concurrent to the construction of the Furuichi-Mozu Kofun Group, East Asia was in a period of turmoil. After the fall of the powerful Han dynasty in the late 2nd century, China entered an extended period of disunity until its eventual reunification under the Sui and Tang dynasties (beginning in the 6th century). Following the Three Kingdoms period of the 3rd century, when the Wei, Wu, and Shu competed for dominance, and the rule of the Western Jin, China of the 4th century entered the tumultuous period of the Sixteen

Kingdoms in the north and the rule of the Eastern Jin in the south. The period when the Five Kings of Wa held diplomatic relations with China in the 5th century corresponds with the Period of North and South Dynasties, when China unified under the Northern Wei in the north and the Song in the south.

The political turmoil and beginnings of a new age in China had a great impact on the surrounding polities. On the Korean peninsula, Goguryeo, Silla, Baekje, and Gaya emerged and competed for power. Goguryeo, in particular, adopted a policy of advancing southward when the political situation in the northern part of China became more stable. This brought an atmosphere of military tension to the polities in the southern part of the Korean peninsula.

These changes in the political situation of East Asia also had a great impact on the societies of the Japanese archipelago. While the giant keyhole tombs had been built in the Yamato Basin during the Early Kofun period (from the mid-3rd century to the 4th century), those of the Middle Kofun period (5th century), the age of the Five Kings of Wa, began to be built on the Kawachi Plain. It is believed that this represents a shift in hegemony within the Yamato government from powers located in Yamato to those in Kawachi. This is represented most clearly in the Furuichi-Mozu Kofun Group, which was constructed to look out over the Osaka Bay.

Within these *kofun* of the Middle Kofun period, emphasis shifted from bronze mirrors, beads, and other ritual items, as seen at Manai Kofun and Komagatani-kita Kofun, to iron weapons, armor, and other militaristic goods. We can assume that a militarily powerful faction seized leadership amidst the tense atmosphere pervading East Asia.

Additionally, numerous new technologies were introduced from the Korean peninsula in the Middle Kofun period, revolutionizing various industries, including ceramics and arms and armor. The introduction of new tools improved productivity, which advanced large-scale civil engineering projects. The leadership was also able to secure new economic foundations by controlling the distribution of advanced goods and sophisticated technologies. A study of Nonaka can enhance our understanding of how the leadership pursued internal development during this period of change in East Asia. Though relatively small in size, Nonaka embodies the expansive changes of the time.

(Nakakubo Tatsuo)

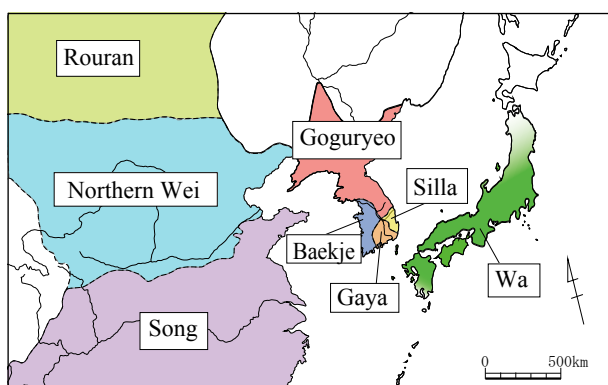


Fig. 76 East Asia of the 5th century

Satellite Tombs

Smaller *kofun* located around a larger keyhole tomb, such as Nonaka or Ariyama, are known as satellite or subsidiary tombs. In this section, we will trace the history of research concerning these satellite tombs.

Satellite tombs first attracted attention in the burgeoning period of research on *kofun*. For a long time, the predominant view was one that considered the large keyhole tomb as that of an emperor or member of a powerful family and the smaller satellite tomb as that of a subordinate (Takahashi, 1922).

Nishikawa Hiroshi, however, was dissatisfied with this conception and attempted to situate the issue within state formation theory (Nishikawa, 1961). He redefined satellite tombs as having the following three features: (1) qualitative or quantitative subordinancy in scale, burial facilities, and burial goods; (2) contemporaneity in construction; and (3) a relatively planned or structured layout. Furthermore, focusing on the fact that satellite tombs did not accompany the earliest *kofun*, but increased in the Middle Kofun period, he suggested that satellite tombs should be regarded as “the tombs of proto-bureaucrats that appeared as chiefs transformed into monarchs during Japan’s formative period of class society” (Ibid., p. 23). The idea that the proto-bureaucracy was manifested in the *kofun* is echoed in the views of Jiao Nanfeng, who suggested that the subsidiary grave pits of the Yangling Mausoleum from the Han Dynasty (mausoleum of Emperor Jing of Han) represented the bureaucratic and military organizations from the emperor’s lifetime (Jiao, 2007).

While Nishikawa discussed the nature of the occupants of these satellite tombs, increased excavations led others to suggest that these satellite tombs actually held no human interments. Mori Kōichi and Miyagawa Susumu, who excavated Katonboyama in the Mozu Kofun Group, noted that the large amount of iron burial goods would have physically prevented any human burial. They concluded that no one was buried therein (Mori and Miyagawa, 1953). Such an interpretation would suggest that satellite tombs appeared as the mortuary ritual became more elaborated, which paints the contemporary society as one that made extraordinary investments into the construction of *kofun* and rituals. Therefore, one’s interpretation of satellite tombs greatly influences one’s view of Kofun-period political society.

Of the few *kofun* whose burial goods are known within the Furuichi Kofun Group, Nonaka has been at the center of this discussion concerning the occupants of satellite tombs and their identity. Kitano Kōhei, who excavated Nonaka, believed that the interred individual led the military organization and distributed armor to powerful elites through the country (Kitano, 1976). Fujita Kazutaka, who critically developed Nishikawa’s theory, suggested that the occupant was a proto-bureaucrat who combined the functions of civil and military officers (Fujita, 1993), and Tanaka Shinsaku, through an analysis of the row of

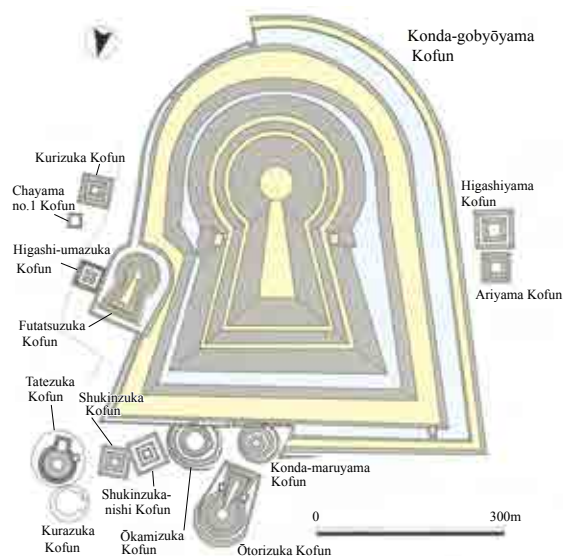


Fig. 77 Konda-gobyōyama Kofun and surrounding tombs (after Chikatsu Asuka Hakubutsukan, 2011)

armor and accompanying swords, posited the establishment of a standing army (Tanaka 1993).

Of course, the no-occupant theory is also a strong hypothesis. Indeed, Nishihakayama, the satellite tomb of Hakayama that was equipped with a large amount of iron goods in a manner similar to Nonaka, was reported as a “satellite tomb for burial goods” (Yamada, 1998). Some have suggested that this designation could also apply to Nonaka.

The issue of human interment within these satellite tombs or their historical significance is not a simple one. In any case, all researchers agree that satellite tombs are a distinctive feature of the Furuichi-Mozu Kofun Group. There is no doubt these small *kofun* hold the key to understanding the nature of this *kofun* group and the Middle Kofun period. (Nakakubo Tatsuo)

Reference

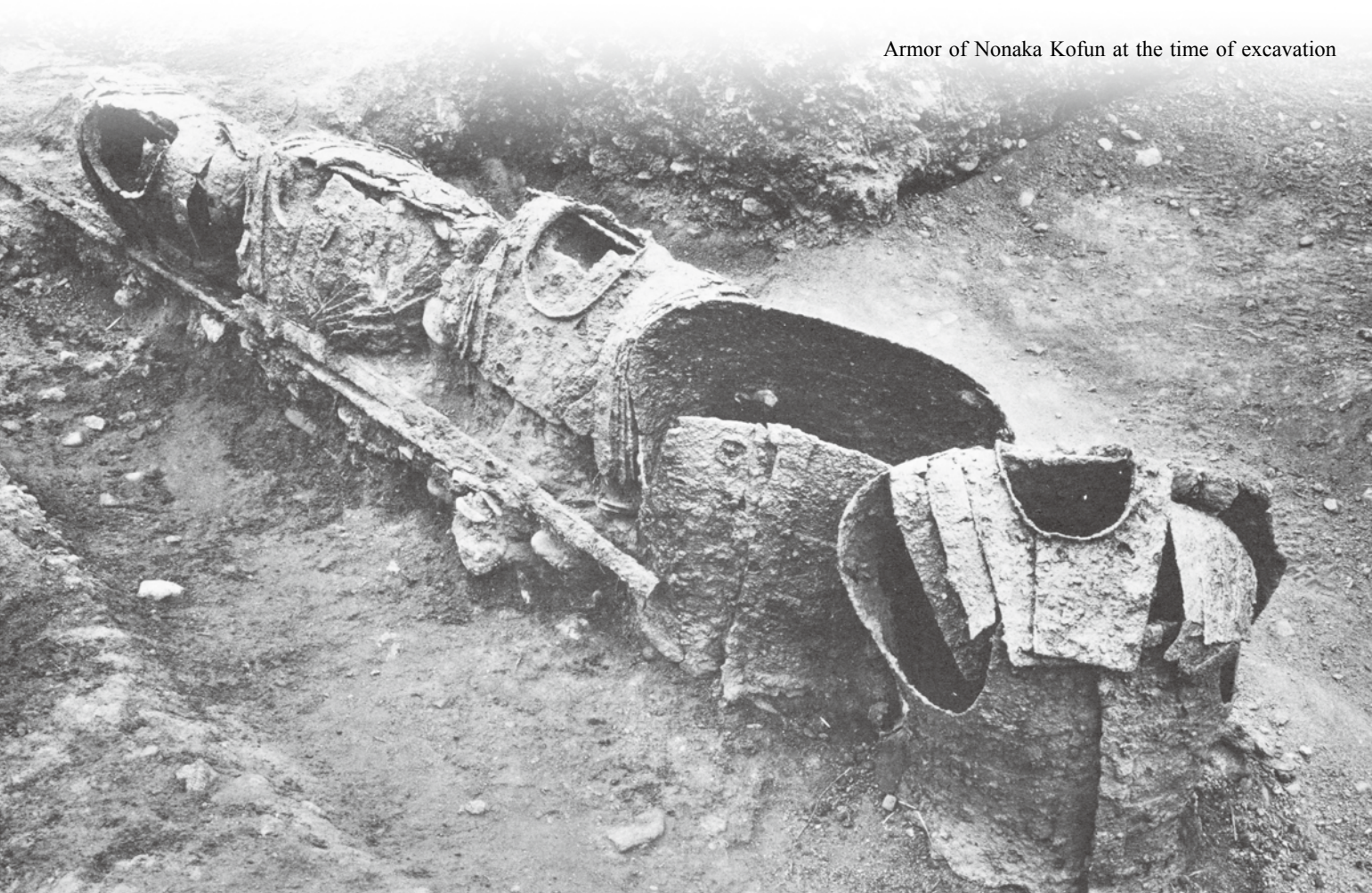
- Kitano, Kōhei. (1976). *Kawachi Nonaka Kofun no kenkyū* (Research on Nonaka Kofun in Kawachi). Ōsaka daigaku bungakubu kokushi kenkyūshitsu.
- Takahashi, Kenji. (1922). *Kofun to jōdai bunka* (Kofun and ancient culture). Kokushi kōshū kai.
- Nishikawa, Hiroshi. (1961). Baichō ron josetsu (An introduction to the issue of satellite tombs). *Kōkogaku kenkyū*, 8 (2):10–30.
- Tanaka, Shinsaku. (1993). Buki no shoyūkei kara mita jōbigun seiritsu no kanōsei nitsuite (On the establishment of a standing army from the perspective of weapon ownership). *Kodai bunka*, 45(8):13–21 & (10):14–23.
- Fujita, Kazutaka. (1993). Baichō kō (Research on satellite tombs). *Kansaidaiigaku kōkogaku kenkyūshitsu kaisetsu 40 shūnen kinen kōkogaku ronsō*.
- Mori, Kōichi & Susumu Miyagawa. (1953). *Sakai-shi Mozu Akahata-chō Katonboyama Kofun no kenkyū* (Research on Katonboyama Kofun). Kodaigaku kenkyū kai.
- Yamada, Yukihiro et al (Eds.). (1997). *Nishihakayama Kofun*. Fūjidera-shi kyōiku iinkai.
- Jiao, Nanfeng. (2007). Kanyōrō jūshōkō no kisoteki kōsatsu (Research on the subsidiary grave pits of the Han Yang Ling Mausoleum). *Hakko kenkyū*, 33:1–7.

Part Two

Contributions:

Issues Surrounding Nonaka Kofun

Armor of Nonaka Kofun at the time of excavation



The Establishment of the Furuichi Kofun Group

Fukunaga Shin'ya

Located on the southern Kawachi Plain, the Furuichi Kofun Group joins with the Mozu Kofun Group to the west to form one of the archipelago's largest tomb groups, which was constructed from the late 4th through the 5th century. Curiously, however, while this area saw the construction of giant keyhole tombs during this period, no major keyhole tombs were built there during the half century from the start of the Kofun period. In this section we will address why this region, which was home to Kawachi Lake, a hub for goods and information on the eve of the Kofun period, appears to have missed the wave of *kofun* development.

1 Major components of the Yamatai government

The story dates back to the era of Queen Himiko, approximately two centuries before the establishment of the Furuichi Kofun Group. In the *Gishi wajinden* (An Account of the Wa in the History of the Wei Dynasty) it is recorded that Himiko was elected to power, suggesting that the sovereignty of her kingdom of Yamatai was acknowledged by the Wa society of the Japanese archipelago and that the archipelago had become politically consolidated under her rule. It is believed that this unification occurred around the end of the 2nd century, when disturbances within the Wa came to an end; the half century between this period and the 240s, when an envoy was sent to the Wei dynasty, is marked by the political activity of Himiko.

During the reign of Himiko, or the Final Yayoi period, the large bronze ritual objects that had been highly prized until then, such as the bronze spears found in the northern part of Kyushu and bronze bells found in the Kinai and Tōkai regions, disappeared suddenly. These items had functioned as the symbols of regional polities through the Late Yayoi period. This sudden change witnessed in the archaeological record indicates that Japanese society abolished its regionally unique symbols and moved to a larger political unification, which coincided with Himiko's reign. The author refers to this first central political power on the Japanese archipelago as the Yamatai government.

In place of the regional bronze spears or bronze bells, the Yamatai government began utilizing Chinese-made deity and beast mirrors with image bands (*gamontai shinjūkyō*), at least two of which were found buried in Hokenoyama (Sakurai City, Nara Prefecture), one of the largest tombs for the period. As these mirrors are found distributed most heavily in the southeastern Nara Basin, from tombs dating to the Final Yayoi and Kofun periods, it is believed that the Yamatai government, which centered on the Yamato polity, actively obtained them from China and distributed them to major local powers who participated in this new government.

Ten of these mirrors have been found from the southern Kawachi region (including the Izumi region), second in concentration only to Yamato. The unified polities of Yamato and Kawachi, located in the Yamato River Basin in the southern Kinai, can be understood as the major powers of the new Yamatai government.

2 Friction between Yamato and Kawachi

In the sixth month of the third year of Jing-chu (239; JPN: *keishō*), Queen Himiko sent Nashime and Gori to the Wei to pay tribute. Pleased that the Wa visitors came such a long way across the ocean, the Wei Emperor conferred upon Himiko the title of *Shingi waō* (king of Wa, friendly to the Wei) and granted her an abundance of gifts, including a gold seal. Among the items described in the *Gishi wajinden*, the "100 bronze mirrors" have attracted the most attention. While debate continues as to what kind of mirrors they were, the author considers them to have been triangular-rimmed deity-and-beast mirrors (hereafter, TR mirrors), which are unearthed from the keyhole tombs of the powerful elite.

After 240, when the envoy to the Wei successfully returned, the status of Himiko transformed from the queen elected by the domestic Japanese society to the queen of the Wa, recognized by the emperor of the powerful Wei dynasty. While following the traditional design of a deity and beast mirror, the new TR mirrors were imbued with the prestige of Wei support. This increased their political role above that of the previous deity and beast mirrors with image bands.

However, although the number of deity and beast mirrors with image bands found in the southern Kawachi region was second only to Yamato, the number of TR mirrors is surprisingly small. Additionally, not a single TR mirror from the oldest stage (Import A), which the author dates as having been imported in 240, has been found. This may be related to the following factors: as described above, round keyhole tombs appeared in this region half a century later than those in the southeastern Yamato Basin; and the region's oldest round keyhole tombs, such as Manai in Tondabayashi City and Tamateyama no. 9 in Kashiwara City, which were built from the late-3rd to the early-4th century, were only mid-sized tombs measuring around 60 meters in length.

In contrast, the area along the Kizu and Yodo Rivers, on the northern route from the Yamato Basin to the Seto Inland Sea, showed a completely different development. In this region, round keyhole tombs over 100 meters were built continuously from the start of the Kofun period, such as Tsubai-ōtsukayama in Kizugawa City, Mori no. 1 in Katano City, and Okamotoyama in Takatsuki City. A great number of TR mirrors can also be found. This may suggest that the

polity of the Yamato Basin shifted its political focus from the southern polities of the Yamato River Basin to the northern polities of the Yodo River Basin during its transition from the Yamatai government to the Yamato government.

This strained relationship between Yamato and Kawachi during the later phase of Himiko's reign also revealed itself

in the level of regional interest in round keyhole tombs, as discussed above. The *Gishi wajinden* records that although a male king was installed after the death of Himiko, the country did not accept his rule, resulting in a war that caused over 1,000 deaths. While this passage has not received much attention by archaeologists, it indicates that a serious confrontation over Himiko's successor occurred

Table 1 *Gamontai shinjūkyō* (deity and beast mirror with an image band) and TR mirrors unearthed from the Kinai region

Region	City/Name of Mounded tomb	<i>Gamontai shinjūkyō</i> (deity and beast mirror with an image band)	TR mirrors and Wei mirror
		(Early 3rd century)	(Mid to end of 3rd century)
Southern foot of Mt. Rokkō	Kōbe/Nishi-motomezuka Kofun	<i>Gamontai kanjō-nyū shinjūkyō</i> <i>Gamontai kanjō-nyū shinjūkyō</i>	Import A/ <i>Gosaku sanshin gojūkyō</i> Import A/ <i>Gosaku sanshin gojūkyō</i> Import A/ <i>Gosaku shishin shijūkyō</i> Import A/ <i>Gosaku shishin shijūkyō</i> Import B/ <i>Gosaku joshūmei shishin shijūkyō</i> Import B/ <i>Chinzesaku goshin shijūkyō</i> Import B/ <i>Gosaku sanshin shijūkyō</i>
	Kōbe/Higashi-motomezuka Kofun	<i>Gamontai shinjūkyō</i>	Import B/ <i>Karakusa montai shishin shijūkyō</i> Import B/ <i>Jūmontai shishin shijūkyō</i> Import C/ <i>Jūmontai nishin sanjū icchūkyō</i> Import C/ <i>Jūmontai sanshin sanjūkyō</i>
	Kōbe/Hebosozuka Kofun	<i>Gamontai kanjō-nyū shinjūkyō</i>	Import C/ <i>Karakusa montai sanshin nijūkyō</i> Import C/ <i>Karakusa montai nishin nijūkyō</i>
	Ashiya/Aboshinnōzuka Kofun		Import D/ <i>Hamontai shishin sanjū hakusanrokyō</i> Import D/ <i>Hamontai shishin sanjū hakusanrokyō</i> Import D/ <i>Hamontai shinjūkyō</i> Import / <i>Sankakubuchi shinjūkyō</i> (type unknown)
	Kōbe/Tokunōzan Kofun	<i>Gamontai dōkōshiki shinjūkyō</i>	
	Kōbe/Shiramizu-hisagozuka Kofun	<i>Gamontai dōkōshiki shinjūkyō</i>	
Settsu-mishima	Takatsuki/Ama miyayama Kofun		Import A/ <i>Gosaku shishin shijūkyō</i> Import B/ <i>Jūmontai shishin shijūkyō</i> Wei/ <i>Seiryū san-nen hōkaku kiku shishinkyō</i> Wei/ <i>Hanen hokeitai dōkōshiki shinjūkyō</i>
	Takatsuki/Tsugeyama Kofun		Import B/ <i>Kushiamontai shishin shijūkyō?</i> Import B/ <i>Mon'yōtai shishin shijūkyō?</i>
	Takatsuki/Bentenryama C1 Kofun		Import D/ <i>Hamontai sanshin sanjūkyō</i>
	Ibaraki/Shikinzan Kofun		Import C/ <i>Jūmontai sanshin sanjūkyō</i>
	Ibaraki/Shōgunyama Kofun (local lore)		Import C/ <i>Karakusa montai nishin nijūkyō</i>
North kawachi	Hirakata/Mannenyama Kofun		Import A/ <i>Gosaku shishin shijūkyō</i> Import A/ <i>Karakusa montai shishin shijūkyō</i> Import B/ <i>Chinzesaku rokushin shijūkyō</i> Import B/ <i>Hamontai banryūkyō</i> Import C/ <i>Jūmontai sanshin sanjūkyō</i> Import D/ <i>Jūmontai sanshin sanjūkyō</i> Wei/ <i>Ganshisaku gamontai shinjūkyō</i>
	Hirakata/Tōdayama Kofun		
Mid/South Kawachi	Higashiōsaka/Ishikiri Shrine (local lore)	<i>Gamontai kyūshinshiki shinjūkyō</i>	Import B/ <i>Jūmontai shishin shijūkyō</i> Import C/ <i>Karakusa montai nishin nijūkyō</i> Import C/ <i>Karakusa montai nishin nijūkyō</i>
	Higashiōsaka/Ikeshima-fukumanji remains	<i>Gamontai shinjūkyō</i> (fragment)	
	Kashiwara/Kokubu-chausuyama Kofun		Import B/ <i>Shinsaku joshūmei shishin shijūkyō</i> Import C/ <i>Gosaku shishin nijūkyō</i>
	Kashiwara/Tamateyama no.6 Kofun	<i>Gamontai shinjūkyō</i>	
	Fujiidera/Shukinzuka Kofun	<i>Gamontai kanjō-nyū shinjūkyō</i>	
	Habikino/Niwatorizuka Kofun		Import B/ <i>Gosaku sanshin shijūkyō</i>
	Tondabayashi/Manai Kofun	<i>Gamontai shinjūkyō</i>	Import D/ <i>Jūmontai sanshin sanjūkyō</i>
Izumi	Kanan-chō/Kankō-ji no.10 Kofun	<i>Han-en hōkeitai shinjūkyō</i>	
	Izumi/Izumi-koganezuka Kofun	<i>Gamontai dōkōshiki shinjūkyō</i> <i>Gamontai kanjō-nyū shinjūkyō</i> <i>Gamontai kanjō-nyū shinjūkyō</i>	Wei/Keisho san-nen gamontai shinjūkyō Import B/ <i>Hamontai banryūkyō</i>
	Kishiwada/Kazefukiyama Kofun	<i>Gamontai shinjūkyō</i>	

within the government; it is interesting to note that the archaeological record for this period suggests a strained relationship between Yamato and Kawachi.

3 Uncertain East Asian relations and a change in power

Built in the mid-3rd century on an unprecedented scale in Sakurai City, Nara Prefecture, Hashihaka Kofun was the largest and most carefully constructed round keyhole tomb for its time, and its construction marks the beginning of the Kofun period. Judging from available historical material, Himiko, who died around 250, is the most likely candidate for someone whose death would have required the construction of such an unprecedentedly giant mounded tomb. Its construction was a milestone marking the transition from the Yamatai government to the Yamato government, signaling the emergence of a system in which the political order was maintained beyond the death of an individual king. Moreover, the fact that giant round keyhole tombs continued to be built around Hashihaka until the mid-4th century suggests a continuity in the political authority of the Wa kings based in the southeastern Yamato Basin.

Shortly after the establishment of the Yamato government, however, China and the East Asian international environment entered a period of instability. Chaos in northern China after the death of Emperor Wu in 290 debilitated the Western Jin, and the Lelang Commandery, which had been a channel for negotiations for polities east of China, ceased to exist in 313. Furthermore, the Western Jin collapsed in 316 following continued aggression from the Xiongnu. As the Yamato polity had relied on the political approval of China, beginning with Himiko's *Shingi waō* investiture, the disappearance of this support meant a dire loss of legitimation.

After the mid-4th century, the construction of large round keyhole tombs ceased in the southeastern Yamato Basin, which had been the center of the early Yamato government. Following a short period of tomb construction in the Saki area of the northern Nara Basin, Tsudō-shiroyama appeared in Fujiidera City, Osaka Prefecture, in the late 4th century, becoming the first giant round keyhole tomb in the southern Kawachi region. This marked the start of full-scale tomb construction in the Furuichi Kofun Group.

Very few excavations have been conducted on the large round keyhole tombs of the Furuichi Kofun Group, as they are under the control of the Imperial Household Agency, leaving very little information available concerning their burial goods and various features. However, the arms and armor, iron ingots, and stoneware excavated from Nonaka imply a relationship with Gaya on the southern Korean peninsula. The leadership of the Wa government changed from the former Yamato polity, which had relied on Chinese

authority, to the new Kawachi polity, which had secure access to iron imports from Gaya. After securing its position, the Kawachi polity resumed diplomatic relations with China in the early 5th century for the first time in over a century, thus entering the age of the Five Kings of Wa.

There is no question that the great changes resulting from the fall of the Western Jin had a significant influence on the establishment of the Furuichi Kofun Group. However, behind this shift in power, we can also detect a strong desire by the southern Kawachi polity to regain hegemony after losing its struggle for leadership 200 years prior to the Yamato polity during the final years of Himiko's reign.

Introduction

11 sets of armor were excavated from Nonaka. The details of their excavation were published in the 1976 site report and have been cited widely within archaeology. Discussion and evaluation of the armor based on detailed analysis of the artifacts, themselves, however, has not necessarily been exhaustively conducted. There are several possible reasons for this. First, a considerable amount of invaluable information had gone unprocessed before the recent conservation project, as the armor had been coated in resin atop the outer layer of soil following discovery; additionally, some pieces of armor had been left unrestored as fragments. Second, the high quality of the 1976 report may have had the adverse effect of lessening the need felt for subsequent detailed study of the armor. Research on Nonaka therefore focused almost solely on the thematic issue of the mass deposition of burial goods. In this section, a typological analysis of the armor conducted following conservation and restoration is presented and the significance of the mass burial of 11 sets of armor is considered.

1 The armor of Nonaka

The armor excavated from row no. 1 of Nonaka comprises of one group of three collared cuirasses and three leather keeled helmets and one group of seven cuirasses, seven visored helmets, seven pairs of neck and shoulder guards, and one set of iron tassets. One cuirass and one visored helmet were unearthed from row no. 2. Considering that this amount is far greater than that needed for personal use, that the burial goods have a strong martial character, and that Nonaka is a satellite tomb to the giant Hakayama Kofun, a presumed kingly tomb located in the Furuichi Kofun Group, many have argued for the existence of a military organization and proto-bureaucracy within the central government of the Kinki region (Tanaka, 2001; Fujita, 2006).

This section will reconsider these theories by reviewing the combinations of armor types from Nonaka. Note that visored helmet nos. 1 and 11 went missing following the excavation.

(1) Armor from row nos. 1 and 2

First, we will start by examining the armor from row nos. 1 and 2.

Visored helmets According to the author's classification, two types of visored helmets were unearthed from Nonaka: IVa and IVb (Fig. 1, left; Hashimoto, 1995). While type IVa (helmet nos. 2, 4, 5, and 7) was the standard type of visored helmet, examples of type IVb (nos. 3, 6, and 11) are extremely rare: in addition to that of Nonaka, they can only

be found from Mukaideyama no. 1 in Fukui Prefecture (helmet no. 1) and Inadō no. 21 in Fukuoka Prefecture. The latter two are both decorated in gilt bronze. Additionally, helmet no. 4 is of a special type, in which the inverted bowl, rather than being a separate piece, was hammered out from the helmet's ceiling plate: similar examples have only been found from Shingai no. 1 in Shiga Prefecture (helmet no. 1) and Nagaura no. 4 in Fukuoka Prefecture (Fig. 1, right; Hashimoto, 2004). The above characteristics can be dated to the TK73 to TK216 phases, according to the Sue-ware typochronology; considering they are typologically not the oldest, however, it is reasonable to date them to the TK216 phase.

There are no significant differences in the lamellae width of any of the visored helmets from Nonaka; both the right and left sides of the first and second tiers of lamellae comprised either 21 or 23 lamellae. All three visored helmets from Shingai no. 1 have 19 to 22 lamellae on both the right and left sides, and the helmet from the Shimokitakata no. 5 tunnel tomb in Miyazaki consists of 24 lamellae. Additional similarities can also be found inside the helmets: the corners of the lamellae have been cut off; the upper tier of lamellae are sword point-shaped and the lower tier are trapezoidal; and wider lamellae are used at the center-rear of the head. Each neck guard comprises four tiers of neck plates, with the bottom tier cut in an arc at the rear of the head. None of the bottom tiers are equipped with additional skirt plates.

As the difference between type IVa and IVb is believed to reflect different craftsmen groups (Hashimoto, 1995, pp. 15–16), two groups of craftsmen may have been involved in visored-helmet production at Nonaka; meanwhile, the high level of similarities between them suggests that they were likely both produced during the same period in close

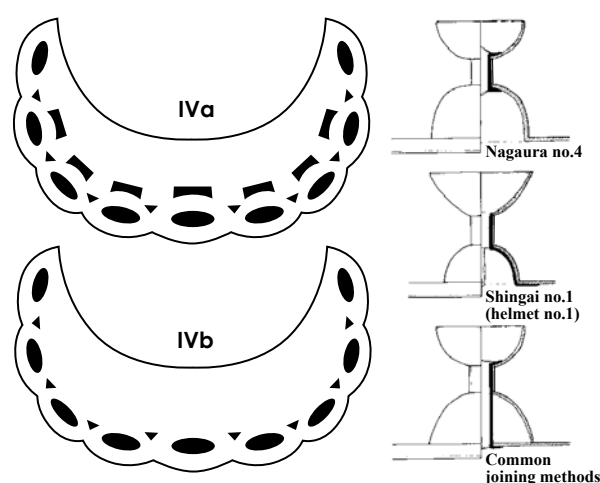


Fig. 1 Helmet type based on visor pattern (left) and methods of joining the inverted bowl (right)

relationship to one another.

Neck guards According to Fujita's classification, the neck guards can be grouped into three types: type III-b (no. 7), type III-c (nos. 3 and 5), and an interim type between the two, where the base slants slightly downward (nos. 1, 2, 4, and 6). While there is some variation, they are all believed to belong to roughly the same phase.

Cuirasses Cuirasses from Nonaka consist of four riveted triangular-plate cuirasses, four riveted rectangular-plate cuirasses, and three laced triangular-plate collared cuirasses. The former two types are standard riveted examples, while the latter is unique in that it has a collar and protruding wings.

The collared cuirasses will be discussed in the next section. Here, let us examine the typological relationship between cuirass nos. 1 through 7 and 11. Generally speaking, the peak of production and burial of riveted rectangular-plate cuirasses temporally followed that of riveted triangular-plate cuirasses. Having said that, however, there was nevertheless a considerable period of overlap, suggesting that plate shape cannot necessarily be used alone to determine chronological order. Both types can be subdivided by minute characteristics, however, allowing the ordering of individual cuirasses based on morphology (Yoshimura, 1988; Takizawa, 1991).

Table 1 presents those characteristics useful in clarifying chronological position: the rivet head size, the number of rivets on the upper band of the cuirass rear, and the width of that band. While the rivet head diameter of cuirass no. 7 measures approximately five millimeters, that of the other cuirasses is mostly 6.5 to 7.0 millimeters. As for the number of rivets used on the upper band of the cuirass rear, 13 rivets were used for cuirass no. 4, nine for cuirass no. 6, and ten to 11 for the others. The width of the band on cuirass no. 2 is 3.3 centimeters and that of cuirass no. 4 is 3.4 centimeters, which are both relatively narrow. That of the remaining cuirasses measures 3.7 to 4.5 centimeters. While smaller rivet heads, more rivets on the rear upper band, and a narrower band tend to be seen in older cuirasses, this is not always the case: for example, cuirass no. 7 has a wider band measuring 4.5 centimeters, albeit using small rivet heads; and cuirass no. 4, albeit having a narrow band and many rivets, does not use small rivet

Table 1 Morphological analysis of riveted cuirasses

Cuirass no.	Plate	Rivet head diameter (mm)	Rivets on rear top band	Width of rear top band (cm)	Torso
1	Triangular	6.5	11	4.0	Continuous
2	Rectangular	6.5–7.0	(9–10)	3.3	Continuous
3	Rectangular	6.5	11	3.7	Continuous
4	Rectangular	6.5–7.0	13	3.4	Continuous
5	Triangular	6.0–7.0	10	4.05	Continuous
6	Triangular	6.0–6.5	9	4.1	Continuous (variant)
7	Triangular	4.5–5.0	10 (11)	4.5	Segmented (hinged)
11	Rectangular	6.0		4.1	Continuous

heads, in addition to being of rectangular-plate construction.

It is thus difficult to propose a strict order of production consistent with all the attribute combinations discussed above. It would be better to evaluate them as falling within a certain level of variation. Together with their accompanying visored helmets and neck guards, which exhibit a high level of association, it would be appropriate to consider the cuirasses, as well, as falling within a limited span of time and displaying a high level of association. As the riveted rectangular-plate cuirasses are not typologically the oldest, they can be dated to the TK216 phase.

Armor combinations A visored riveted lamellar helmet (helmet no. 11) and a riveted rectangular-plate cuirass were found from row no. 2. Fragmented due to looting, it is possible that they were originally accompanied by neck and shoulder guards. The details of helmet no. 11 are unknown, but the photograph taken during excavation suggests that it had a IVb-type pattern and used narrow lamellae, from which we can infer that no significant differences existed between it and the helmets from row no. 1.

Cuirass no. 11 is a riveted rectangular-plate cuirass that opens only in the front, the same as cuirass nos. 3 and 4 of row no. 1. The majority of riveted rectangular-plate cuirasses open both in the front and on the right side; examples without this additional removable piece on the front right are rare, and have only been found from Inadō no. 21 and Kurohimeyama (cuirass nos. 11 and 19), suggesting a high commonality among cuirass nos. 3, 4, and 11 of Nonaka. This also suggests that no clear differences can be detected between the armor of row nos. 1 and 2. Rather, the armor of Nonaka can be better categorized into

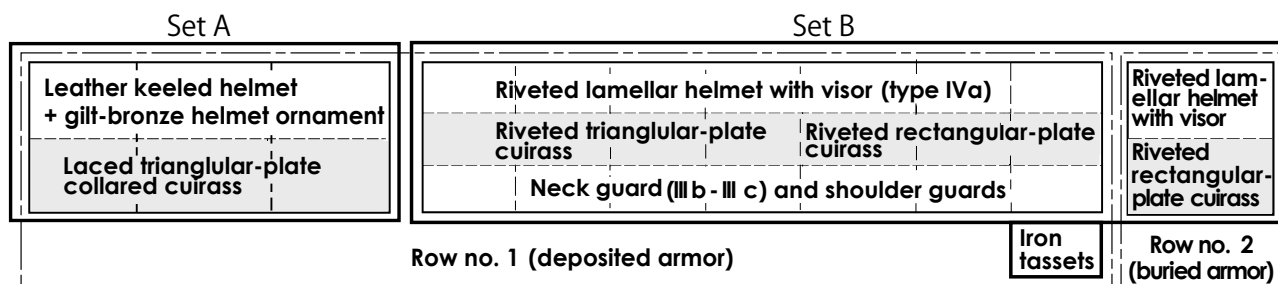


Fig. 2 The two sets of armor found from Nonaka Kofun

two sets: one of laced collared cuirasses and leather helmets and one of riveted cuirasses, visored helmets, and neck and shoulder guards. Below, the former will be referred to as “Set A” and the latter as “Set B” (Fig. 2).

2 Elaborated armor from Nonaka

(1) Armor sets and collared cuirasses

Set A (leather helmets and laced collared cuirasses) initially appears typologically older than Set B. The gilt-bronze helmet ornaments, however, would have been made after the introduction of riveting technology, placing them at roughly the same phase as the armor from Set B. While the collared cuirasses utilize the older lacing technology, and it is possible that they may have been passed down or owned for an extended period of time, the helmet of each cuirass is of a unique leather construction, suggesting that Set A held a special significance. Rather than emphasizing the mixture of new and old attributes within the typological sequence, it is more important to consider the possibility that laced armor continued limited production even after the introduction of riveting. If we instead emphasize the contemporaneity of both sets, the differing composition of the two would seem to imply use by different types of individuals or in different situations (Morishita, 1997, pp. 51–55).

However, Kitano Kōhei was of the opinion that collared cuirasses were not special items made to express social status (Kitano, 1969, p. 10). Let us reexamine this point. He cited as evidence the lack of gilt bronze examples, their

concentration in the central Kinai area (suggesting a strong connection to the government), the superiority of Kawachi and Yamato in armor distribution and a correlation between *kofun* with collared cuirasses and the mass burial of other armor, and the fact that they were only produced for a short period around the time when riveting was first introduced.

We now know, however, that a prototypical laced square-plate collared cuirass was unearthed from Uedono Kofun in Nara and that the triangular-plate iterations were fully formed by the early phase of the Middle Kofun, as seen at Higashi-kurumazuka and Toyonaka-ōtsuka in Osaka. It is apparent that there was a continuous production of a limited number of these collared cuirasses. The author agrees with Suzuki Kazunao’s suggestion that the form of the collared cuirass was based on that of decorated wooden fitted cuirasses (Suzuki, 1999, pp. 494–495). In other words, collared cuirasses can be situated as the most traditional of Kofun-period armor, which can be traced back to the wooden armor of the Early Kofun period, and, in turn, the Late Yayoi period.

The author considers this the reason as to why there are no gilt-bronze examples during the period when riveting technology was introduced and why laced armor continued to be produced in limited amount alongside riveted armor. As domestic craftsmen emphasizing tradition were most likely in charge of the production of these cuirasses, the acceptance of foreign technologies may have been limited even after riveting technology was introduced, and the production of armor using older technology was likely continued to a certain extent by traditional craftsmen.

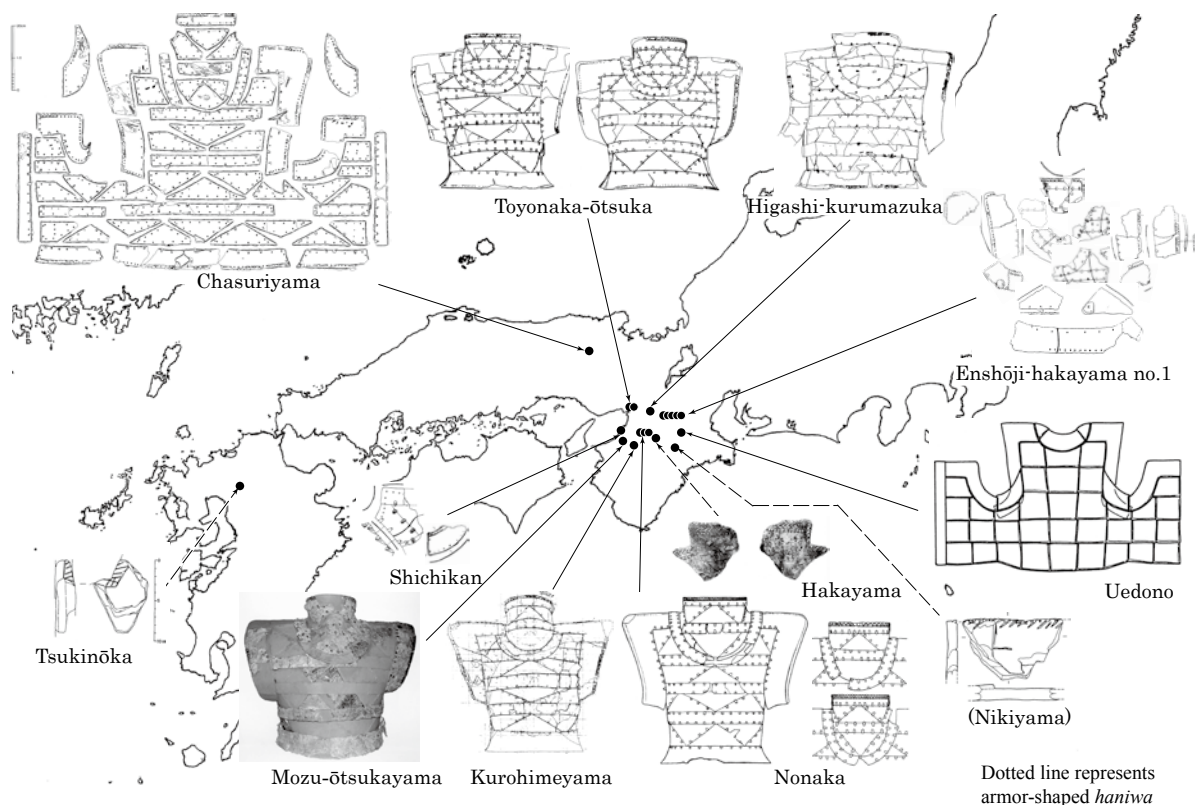


Fig. 3 Distribution of collared cuirasses

Distinguished from normal armor, the collared cuirasses and leather helmets would likely have been ceremonial armor representing tradition and historical legitimacy.

It is also important to note that this type of armor is found mainly in the central part of the Kinki region. While the example from Chasuriyama Kofun in Hyogo is slightly outside central Kinki, the distribution is nevertheless focused on the general Furuichi–Mozu area (Fig. 3).

As Kitano first suggested, the high level of uniformity, lack of regional variation, and concentration mainly in the Kinki region, particularly in and around the Furuichi–Mozu Kofun Group, suggest that the production and distribution of framed armor (now over 540 examples) was conducted under the strong control of the central Kinki administration. There is no doubt that the entity that produced the collared cuirasses and the one that monopolized the production and distribution of framed armor was one and the same: the central Kinki administration, whose leaders were buried in the Furuichi–Mozu Kofun Group. Judging from the fact that only 15 collared cuirasses have been unearthed from nine *kofun*, it is reasonable to consider them as symbolizing a specific status or position of a very limited group within the government.

(2) Iron tassets

While they have not been the focus of much research, an additional type of armor worthy of attention from Nonaka are the iron tassets. After their discovery by Suenaga Masao at Minoyama-ōtsuka Kofun⁽¹⁾ in Kyoto and Enshōji-

hakayama no. 1 in Nara and their depiction in early illustrated reconstructions of armor, iron tassets were long regarded as a standard piece of auxiliary gear.

Excluding the one from Nonaka and estimated four from Kurohimeyama, they have only been found from Mozu-ōtsuka, Enshōji-hakayama no. 1, Minoyama-ōtsuka, and Rōji (Fukuoka Prefecture); small fragments from Tsukinōka in Fukuoka may also have been tassets. Not only were tassets not common, the few known examples are found from the *kofun* of powerful elites with strong connections to the central Kinki administration. It is therefore likely that they symbolized a particular rank or position within the government.

3 The mass armor burial at Nonaka

(1) Mass burial of identical armor

Set B of Nonaka's armor was the standard combination and is characterized here by the burial of numerous more-or-less identical armor. It is also important to note that such uniform, standardized framed armor has been found from across the archipelago, from the tombs of the paramount kings to the local elite. This implies that the political relationship between the central administration and the local elite was maintained through the bestowal of such centrally produced armor. Additionally, the ownership of this standard armor signified membership in the political group centered on the Kinki kings. As armor was the chosen symbol, it is apparent that the political relationships of the Middle Kofun

Table 2 The composition of armor from tombs with mass armor burials

Name of Mounded tomb	Framed plate armor	Lamellar armor	Helmets	Neck / Shoulder	Elaborated armor
Kurohimeyama (front square mound)	24		24	11/12	1 collared cuirass, 5 helmet ornaments, +4 iron tassets
Enshōji-hakayama no. 1 (clay-encased coffin)	10+	1	7	3/3	+5 collared cuirasses, 1 variant visored helmet, 1 early lamellar armor, vertical-plate helmet, collar protector, plate gauntlet, greaves
Nonaka	11		11	7/8	3 collared cuirasses, 3 leather helmets & 3 gilt-bronze helmet ornaments
Tsukinōka	8		8	8?	3 gilt bronze visored helmets, iron tassets?, plate gauntlets, slatted greaves, lamellar shoulder armor
Shichikan (facility no. 2)	6+ (8?)		8	4/2+	1 variant framed cuirass & belt fittings, 1 leather helmet & decorated iron helmet ornament, 1 variant framed cuirass?, 1 collared cuirass, 1 leather helmet
Kutsukawa-kurumazuka	5	1	5	3/4+	1 early lamellar armor, slatted gauntlets
Mozu-ōtsukayama (facility nos. 1–3)	6		3	2/2	1 collared cuirass, 1 iron tassets, 1 decorated bronze helmet ornament
Kumobe-kurumazuka	5		4	1/?	2 variant keeled helmets, 2 unknown armor
Gojō-nekozuka	2	3	3	1/?	3 gilt-bronze visored helmets (incl. 1 variant), 1 gilt-bronze neck guard, 3 early lamellar armor & belt fittings, slatted greaves, unknown lamellar auxiliary gear
Kitatenpinzuka (burial facility no. 2)	5		2	1/?	1 gilt-bronze visored helmet
Shingai no.1	4		5	2/2	1 variant framed cuirass, 1 helmet ornament, plate gauntlets, slatted greaves, armpit guard
Shukinzuka (south burial facility)	4		3	3/3	1 riveted triangular-plate keeled helmet, 1 helmet ornament
Tsukandō (stone chamber no. 2)	3	1	1	1/1	1 collar protector, 1 lamellar tassets, slatted gauntlets
Karatoyama	2		4	2/2	

Tomb names in bold indicate those in the Furuichi–Mozu Group and its surroundings. Armor in “elaborated” column also included in the numbers on the left.

period greatly emphasized martial matters.

As the framed armor was highly uniform in appearance, it was rather the quantity of armor owned that signified social rank concerning the military affairs of the government. As Nonaka had been equipped with the greatest amount of armor among all contemporary *kofun*, far exceeding that of individual use, we may interpret this as a reflection of the military organization of the central Kinki government. Additionally, while many regional elites had only one cuirass without any auxiliary gear, Nonaka's cuirasses were fully equipped with helmets and neck and shoulder guards; cuirass no. 3 was even equipped with tassets. This indicates an advantageous position for the acquisition of armor. The occupant of Nonaka is therefore understood as controlling armor production and distribution within the central government.

Kofun that can be understood in the same manner include Shichikan, a tomb in the Mozu Kofun Group that preceded Nonaka, and Kurohimeyama, a tomb located between Furuichi and Mozu that was built afterward. From this we can infer that the group buried in and around the Furuichi–Mozu Kofun Group had continuous control over armor production and distribution and utilized this for military and political consolidation

(2) Elaborated armor as seen in mass armor burials

Table 2 shows the composition of armor within mass armor burials. It is apparent that rare and characteristic armor is often found in mass armor burials: for example, collared cuirasses; cuirasses with variant shapes, materials, and technologies; gilt-bronze armor; and auxiliary gear. Collared cuirasses, in particular, tend to be found in such tombs. In each case, standard and special armor are found together.

This should not be considered to have happened by chance. It is likely that the sharing of uniform armor represented political ties and the ownership of elaborated armor indicated an individual's rank, position, or merit within the administration. This would mean that the armor of Nonaka was that for the highest-ranking elite within the government: the armor of the paramount king or someone closely related.

4 The armor of Nonaka and the Wa government

The armor of Nonaka comprises two groups, the difference between them believed to have resulted from the selection and integration of two types of armor: one emphasizing quantity and the other quality. This significance was achieved most effectively through the possession and display of both types of armor within the same time and space. The message of superior armor ownership would surely have been a resounding one.

Why, however, was the armor buried there in the first

place? Naturally, one individual can only physically wear one suit of armor. If we assume, as Kitano did, that the occupant was buried in row no. 2, then he would have been buried with cuirass no. 11. For what purpose, then, were the other ten sets buried in row no. 1?

Tanaka Shinsaku, for example, asserted that Nonaka's large deposit of weapons was for the purpose of allotment, and therefore different from the weapons burials of normal tombs. He suggested that it reflected the existence of a specific group or standing army that would have been allotted the armor and swords seen in row no. 1 (Tanaka, 2001, pp. 358–382). Meanwhile, Fujita Kazutaka proposed that they were not the personal possessions of a specific individual, but rather items from the official arsenal, which the occupant of Nonaka would have managed, that were buried during the funeral to display the government's power (Fujita, 2006, pp. 336–338).

In either case, rather than viewing the arms and armor of Nonaka as the personal possessions of a single leader, it would be more appropriate to consider them as the official armaments of the administration. It is highly likely that the deceased individual buried in row no. 2 was something akin to a military officer in control of managing the public armaments of row no. 1 (Set B). Additionally, the distinctive Set A (leather helmets and collared cuirasses) consisted of special items that were only possessed by the highest ranking elite next to the paramount king. The fact that three sets of this special armor were buried in Nonaka suggests that the armor buried in row no. 1 was recognized as belonging to a close subordinate of the paramount king and imbued with the latter's authority.

Through these artifacts we can witness the sociopolitical strategy of the rulers buried in the Furuichi–Mozu Kofun Group to establish martially charged political relationships with and promote the hierarchization of local leaders across the archipelago through the production, distribution, and use of armor.

From an East Asian perspective, the burial of eleven sets of armor within a single tomb is a peculiar phenomenon. Excluding the presumed hundreds of suits of stone armor buried in the tomb of the first Qin Emperor of China, even among the extravagant tombs of the Western Han, the most noteworthy are the four cuirasses unearthed from the tomb of the King of Chu in Xuzhou. Turning to the Korean peninsula, while five helmets, perhaps originally paired with five cuirasses, are said to have been unearthed from the Kumgwan-chong burial mound of Silla, mass armor burials are few. Three sets of armor were found from both Bokcheon-dong no. 86 and Yeonsan-dong no. 8 in Busan and there are several reports of the burial of two sets of armor in other tombs in Gaya. Excluding the Xianbei tombs to the north, armor burial was not conducted in 5th century China, and was very limited in Goguryeo and Silla. The widespread burial of armor is only attested to in Gaya; even

then, armor burials were limited to one or two cuirasses and did not represent a qualitative and quantitative hierarchy, as they did in Wa.

It should be apparent that the burial of armor, particularly in large quantities, was truly a peculiar phenomenon even within East Asian society. It is believed to have reflected Wa identity and the strategy of the administration. Considering that armor burials are not particularly common in Goguryeo or Baekje, which were both ravaged by warfare, one cannot necessarily assert that the burial of armor in Wa was linked to actual battles or the development of a military organization. In comparison with the other polities, that the practice of armor burial was common in both Gaya and Wa suggests that the management of arms and armor and the institutions surrounding warfare and the military organization were yet socially undifferentiated.

Furthermore, in the case of the Japanese archipelago, while the quantity and quality of buried armor may have represented the hierarchical position of the occupant, it is not possible to find a uniform criterion governing the amount or type of armor. It is highly likely that the military organization of the Middle Kofun period was still generally lacking a systematic structure. Rather, it was more likely influenced by the personal strengths of each individual elite, the political climate of each phase, and the ever-fluctuating state of loosely bound relationships. In conclusion, the lavish removal of goods from circulation through the mortuary ritual served to display the prestige of the administration; within such a society, the mass burial of arms and armor spoke more to ritual authority and the ostentatious display of power, rather than to actual military force.

Located in the Furuichi Kofun Group, Nonaka symbolized the defining characteristics of political authority in this age of giant mounded tombs and existed as a landmark in the process of ancient state formation within the Japanese archipelago.

Note

- (1) According to the Yahata City Board of Education, while this armor was traditionally believed to have been excavated from Yahata-ōtsuka, it was most likely from Minoyama-ōtsuka.

References

- Kitano, Kōhei. (1969). Go seiki ni okeru kacchū shutsudo kofun no shomondai (Issues surrounding tombs with armor in the 5th Century). *Kōkogaku zasshi*, 54(4):1–20.
- Suzuki, Kazunao. (1999). Chōsō no bujin (Warriors in bird dress). *Kokka keiseiki no kōkogaku*, Osaka daigaku kōkogaku kenkyūshitsu.
- Takizawa, Makoto. (1991). Byōdome tankō no hennen (Chronology of riveted armor). *Kōkogaku zasshi*, 76(3):272–317.
- Tanaka, Shinsaku. (2001). *Mozu Furuichi Kofun gun no kenkyū* (Research on the Mozu–Furuichi Kofun Group). Gakuseisha.
- Hashimoto, Tatsuya. (1995). Kofunjidai chūki ni okeru kinkō gijutsu no henkaku to sono igi: mabisahi tsuki kabuto wo chūshin to shite (Changes in the development of metalworking in the Middle Kofun period and its significance). *Kōkogaku zasshi*, 80(4):1–33.
- Hashimoto, Tatsuya. (2004). Nagaura 4-gō fun shutsudo fukusōhin no igi: kacchū tetsuzoku wo chūshin to shite (Significance of the burial goods from Nagaura tomb no. 4: with a focus on armor and arrowheads). *Nagaura iseki: dai 1-ji 2-ji chōsa*, pp. 153–168. Koga-shi kyōiku iinkai.
- Fujita, Kazutaka. (2006). *Kofun jidai no ōken to gunji* (The government and military of the Kofun period). Gakuseisha.
- Morishita, Shōji. (1997). Bagu to bugu (Horse trappings and armor). *Ōja no busō: 5 seiki no kinkō gijutsu*, pp. 48–55. Kyōto daigaku sōgō hakubutsukan.
- Yoshimura, Kazuaki. (1988). Tankō keifu shiron (A consideration of the development of plate armor). *13 Kashihara kōkogaku kenkyūsho kiyō Kōkogaku ronkō*, pp. 23–39.

Introduction

A detailed typochronological positioning of the burial goods excavated from Nonaka Kofun is now possible through a reevaluation of its artifacts. Additionally, our understanding of the *haniwa* found atop the mound has been greatly clarified by drawing not only upon the results of the original 1964 excavation by Osaka University (Kitano, 1976), but also upon the recent excavations conducted by the Fujiidera City Board of Education (Yamada et al (Eds.), 1997, Ueda (Ed.), 1991).

In this paper, the author conducts a typological analysis of the armor and iron arrowheads of Nonaka, considers the nature of the other burial goods, talc objects, Sue ware, and *haniwa*, and presents a comprehensive evaluation of the tomb's period of construction. The author then considers the temporal relationship between Nonaka and the neighboring 225 meter-long Hakayama Kofun and discusses various issues surrounding their relationship as main tomb and satellite tomb.

1 Period of construction of Nonaka Kofun

Five parallel rows of burial facilities were found below the upper surface of Nonaka Kofun, a two-tiered square mounded tomb measuring 37 meters to a side. The presence of cinnabar and beads suggests that row no. 2 was used for human interment (Kitano, 1976). The stratigraphic relationship between each row is unclear, making it difficult to ascertain the temporal relationship between them. In this section, the author will confirm the chronological positioning of each artifact based on the Middle-Kofun chronology established by the author (Fig. 1, Suzuki, 2014).

Characteristics of the armor A total of 11 sets of armor

were found from Nonaka Kofun, including ten sets from the first row and one set from the second row. The armor can be divided into three laced triangular-plate collared cuirasses, four riveted triangular-plate cuirasses, four riveted rectangular-plate cuirasses, three leather keeled helmets, and eight riveted lamellar helmets with visors.

Collared cuirass The three collared cuirasses have nine iron plates across both the middle and lower rows; this layout (Fig. 2, p. 71) falls under obtuse Type IIa ([9 , 9] A) of the author's classification (Suzuki, 2008). Furthermore, several typologically newer elements can be witnessed in cuirass no. 9, such as an omitted iron band across the uppermost part of the cuirass rear and an irregular layout of plates in the same section (Fig. 2). The presence of laced collared cuirasses in Nonaka at a time when riveted cuirass production was stabilizing can either be interpreted as the result of older cuirasses being passed down or the continued production of collared cuirasses into this new phase. Although it is difficult to determine which of these interpretations should be adopted given the uniqueness of collared cuirasses, it is highly likely that the production of collared cuirasses continued even after riveting technology had been introduced, judging by the fact that that several laced collared cuirasses were found from Enshōji-hakayama no. 1 in Nara Prefecture, which is considered to have been built after Nonaka, and a riveted collared cuirass believed to be typologically newer was found from Kurohimeyama in Osaka Prefecture.

Leather keeled helmets All three of the leather keeled helmets accompanying the collared cuirasses are equipped with single neck plates and feathered helmet ornaments covered in gilt bronze; two of the helmets were found with iron bordering along the base of where the leather helmet would originally have been. The single-plate neck protectors

AD	Phase	Sue-ware phase	Iron arrowheads and quivers	Armor				Horse trappings	Accessories		Farming tools		Major Kofun in the Kinki area
				Helmets	Laced cuirasses	Riveted cuirasses	Lamellar armor		Earrings	Metal belt fittings	Sickles	Hoes and spades	
375	M1	Initial	I										Izumi-koganezuka Ishiyama
400	M2	Early	TG232	IIa	S-shaped	Short-necked	Laced						Mozu-ōtsukayama (1-3) Toyonaka-ōtsuka
	M3	Middle (Older stage)	(ON231) TK73	IIb			Laced	New type			Three-leaf motif	Straight-edged	Kurazuka, Oshishizuka (2) Shichikan, Shingai no.1
450	M4	Middle (Newer stage)	TK216 (ON46)	III				Riveted			Leaf motif	Curved-edged	Oshishizuka (1) Shukinzuka (north) Nonaka
	M5	Late	TK208	IV				Riveted			Dragon motif (Wave and dot pattern)	Curved-edged	Kurohimeyama (front) Nagamochiyama
500	M6	Terminal	TK23 TK47								Gold earrings with pendants	U-shaped	Takadayama Ōtani

Fig. 1 Phases of the Middle Kofun period

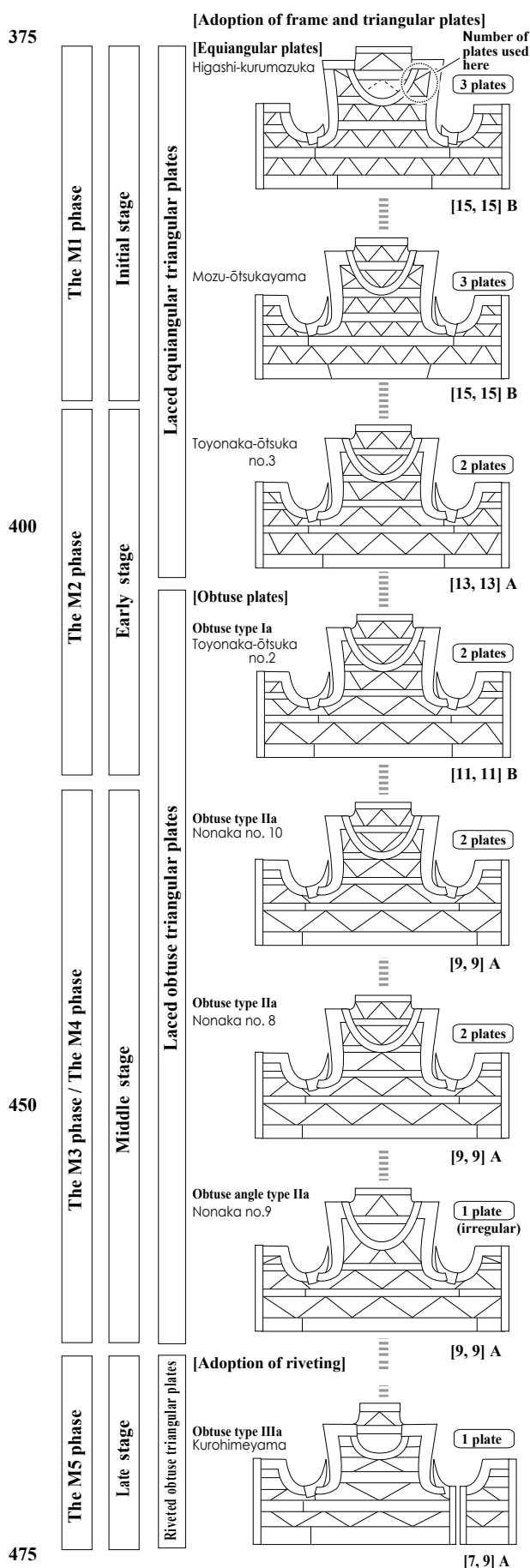


Fig. 2 Development of the collared cuirasses

have a continuous row of short slits along the edges; similar designs are seen on the helmets found from Nishikoyama Kofun in Osaka and Gokayama B2 in Shizuoka Prefecture. As both of these *kofun* are dated to the M3 phase (older stage of the middle phase of the Middle Kofun period, which saw the introduction of riveting technology), the neck plates from Nonaka can be assumed to have been produced around the same time.

Riveted cuirasses Of the four riveted triangular-plate cuirasses, three have a continuous torso construction that opens only in the front (cuirass nos. 1 and 5, as well as no. 6, whose removable front-right section was riveted shut) and one has a segmented torso construction with removable front sections on both the left and right (cuirass no. 7) (Table 1; page 70). Turning to plate layout, cuirass no. 6 is obtuse Type Ia ([11, 11] B) and nos. 1, 5 and 7 are obtuse Type IIa ([9, 9] A). While the former retains some older elements, no clear difference in production period can be witnessed.

The four riveted rectangular-plate cuirasses have two to three iron plates to each tier (Table 1; pp. 69–70) and each rear base plate of cuirass nos. 2, 3, and 4 is divided down the center⁽¹⁾. While the overwhelming majority of riveted rectangular-plate cuirasses have a segmented torso construction with a removable front-right section, all four examples from Nonaka have an uncommon continuous structure. Although there are some minor morphological differences, it is highly likely that these four cuirasses were produced in a close environment.

While there are some differences in the locations of the rivets on the placket plates of the eight riveted cuirasses, they display a high level of overall similarity that hints toward their typochronological positioning: namely, numerous cuirasses with a continuous torso construction, rivet head diameters from 4.5 to 7.0 millimeters⁽²⁾, nine to 13 rivets used on the uppermost band on the cuirass rear, and leather laced bordering around the external metal edges. Takizawa Makoto classified cuirass nos. 1 to 6 as more or less corresponding to Type Ia, which is the oldest group of riveted cuirasses (Takizawa, 1991).

Neck guards All of the eight riveted cuirasses were equipped with neck and shoulder guards. The neck guards all consist of four plates: the main body plates on the right and left and placket plates on the front and back. The placket plates are riveted on one side. When viewed from the front, the shoulders slant downward slightly and the ends narrow. While some irregularity can be noted, the bottom edge of the neck guard is almost horizontal. The projection of the collar is not significant and is similar to that of a laced neck guard. The neck guards can be positioned as Type IIIb or Type IIIc of Fujita Kazutaka's classification (Fujita, 2006)⁽³⁾ and can be regarded as having been made at roughly the same time as their accompanying riveted cuirasses.

Table 1 Morphological analysis of cuirasses found from Nonaka Kofun

Cuirass	Type	Torso	Plate layout	Number of rivets	Rivet head diameter	Riveting position	Border	Front height	Back height	Front Section (left)								Rear Section								Remarks
										Chest frame	Upper plate	Upper band	Middle plate	Lower band	Lower plate	Base plate	Shoulder frame	Upper plate	Upper band	Middle plate	Lower band	Lower plate	Base plate			
No. 1	Riveted triangular-plate	Continuous	[9, 9] A	11	6.0–6.5	C	Laced	32.1	38.5	6.1	3.7	3.6	5.1	3.5	5.1	4.8	12.0	5.7	4.0	6.6	4.2	6.3	(6.1)			
No. 2	Riveted rectangular-plate	Continuous	[3, 3]	(10)	6.5–7.0	B	Laced	31.5	41.6	5.2	4.1	3.5	5.1	3.6	4.4	5.9	11.8	5.5	3.3	6.2	3.4	5.6	6.9			
No. 3	Riveted rectangular-plate	Continuous	(3, 3)	9	6.5	B	Laced	(32.1)	40.2	5.9	3.3	3.4	4.9	4.0	4.5	6.0	—	—	3.7	6.5	4.0	4.4	6.5	Possibly [2.2] layout		
No. 4	Rivged rectangular-plate	Continuous	[3, 3]	13	6.5–7.0	B	Laced	31.6	39.3	6.1	4.6	3.2	4.5	3.4	4.7	(6.8)	10.7	6.3	3.4	6.7	3.5	5.1	(5.7)			
No. 5	Riveted triangular-plate	Continuous	[9, 9]	(10)	6.0–6.5	(B)	Laced	30.9	36.7	6.6	—	—	—	3.7	4.2	6.2	—	—	4.0	5.1	3.7	5.4	6.1			
No. 6	Riveted triangular-plate	Continuous	[11, 11] B	9	6.0–6.5	B	Laced	30.0	35.1	5.7	4.2	3.5	4.2	3.5	4.9	(6.0)	—	6.7	4.1	5.7	3.8	4.8	6.7	Riveted front piece		
No. 7	Riveted triangular-plate	Segmented	[9, 9] A	(9)	4.5–5.0	D	Laced	(31.7)	37.4	6.5	3.9	4.2	4.6	4.0	2.9	6.1	10.0	6.5	4.5	6.2	4.1	6.6	(7.5)	Hinges		
No. 11	Riveted rectangular-plate	Continuous	(3, 3)	10-11	6.0	B	Laced	—	—	—	—	—	—	—	—	6.3	9.6	—	4.1	—	3.9	5.7	—			

Cuirass	Type	Torso	Plate layout	Border	Front height	Back height	Front Section (left)								Rear Section							
							Chest frame	Upper plate	Upper band	Middle plate	Lower band	Lower plate	Base plate	Shoulder frame	Tier 2	Tier 3	Tier 4	Tier 5	Middle plate	Lower band	Base plate	
No. 8	Laced triangular-plate collared	Continuous	[9, 9] A	Laced	34.0	47.3	6.6	6.1	3.3	5.0	3.8	3.9	5.3	7.6	8.8	3.2	5.1	3.4	4.0	3.7	4.3	(6.8)
No. 9	Laced triangular-plate collared	Continuous	[9, 9] A	Laced	34.3	50.2	5.6	6.4	3.8	4.4	4.0	4.4	5.0	8.2	12.9		3.2		6.4	3.8	6.3	6.6
No. 10	Laced triangular-plate collared	Continuous	[9, 9] A	Laced	32.7	48.8	6.6	4.7	4.0	4.6	3.6	4.7	5.7	7.5	9.4	3.2	5.9	3.3	4.0	3.3	5.3	6.8

Visored helmets All of the eight visored helmets are of the riveted lamellar type. Despite some minor differences, they exhibit highly similar characteristics, such as their size ratios, the design of the bowl and inverted bowl, the shape of the visor with a flower petal-like brim, and the accompanying four-tiered neck guard. The number of lamellae used for the helmet body falls within a range of 42 to 46 for the upper tier and 41 to 48 for the lower tier; this inconsistency in the number of lamellae between the upper and lower tiers is another similarity between the eight helmets. Additionally, the helmets are fitted with wider iron plates at the back of the head. The fact that each helmet uses the same characteristic lamellae with cut-off corners suggests that they may have been produced at the same workshop.

Two features in particular are useful in determining the chronological positioning of these visored helmets: the wider lamellae used at the back of the head; and the neck guard with a narrowed rear section on its lowest tier. In the author's examination of riveted lamellar keeled helmets made at around the same time as riveted lamellar visored helmets, it became clear that the use of wider lamellae at the back of the head was closely related to the use of plate neck guards with a narrowed rear section in the bottommost tier (Type C by the author's classification; Suzuki, 2012), and that these characteristics can be recognized as appearing relatively late among riveted lamellar visored helmets⁽⁴⁾. As the characteristics of both visored helmets and keeled helmets are considered to have changed in tandem, the visored helmets from Nonaka can be dated to the same period as riveted lamellar keeled helmets displaying the same features.

Chronological position of the armor Within the armor excavated from Nonaka, the leather keeled helmets and laced collared cuirasses display older characteristics, while the visored helmets display newer characteristics. Nevertheless, they can all be considered to have been produced at roughly the same time. It would seem that the newest armor at the time of the construction of Nonaka Kofun was chosen for burial. As for the overall chronological position, the armor is representative of the M4 phase (newer stage of the middle phase of the Middle Kofun period), when riveting technology became dominant within armor production.

Ratio of sword types The ratio of sword types from Nonaka deserves attention. While the ratio of single- to double-edged swords (including double-edged spears) is only indicative of a general trend, the composition of swords is known to have changed from that of mainly double-edged to that of mainly single-edged, which can serve as a reference when considering a *kofun's* construction period. The ratio of single- to double-edged swords from row nos. 1 and 4 of Nonaka is 153:16. Let us look at the same ratio for *kofun* older than Nonaka that belong to the

M3 phase: 42:36 at Nishihakayama in Osaka; over 146:68 at Igenoyama in Kyoto; and 77:56 at Ariyama in Osaka (total from the central and northern facilities). These figures imply that the ratio of single- to double-edged swords equalized or reversed during the M3 phase. The ratio of sword types from Nonaka can be viewed as an extension of this trend, belonging to a period when single-edged swords became dominant. Consistent with the data presented above, the ratio of sword types also suggests that Nonaka was constructed during the M4 phase.

Iron arrowheads The composition of iron arrowheads unearthed from Nonaka is as follows: S-shaped arrowheads (including elongated examples); barbed willow leaf-shaped arrowheads; double-edged short-necked arrowheads; double-edged long-necked arrowheads; and single-barbed long-necked arrowheads. The arrowheads were found in row nos. 2 and 3 in groupings of roughly 50 pieces. We can find common ground with the Statute on Military Defense of the Nara period, which stipulated that 50 arrowheads (*seki*) would comprise one set (*gu*). This suggests that the arrowheads of Nonaka may have been organized within an institutionalized system. Additionally, the arrowheads were for the most part bundled with others of the same type: for example, Group 6 (bundle names used here correspond with those used in the official site report), the western bundle of Group 7, and one of the bundles from Group 9 (denoted as Group N8') consist of S-shaped arrowheads; Groups 2 and 4 consist of barbed willow leaf-shaped arrowheads; Group 3 consists of double-edged short-necked arrowheads; the eastern bundle of Group 7 consists of double-edged long-necked arrowheads; and Group 5 consists of single-barbed long-necked arrowheads. The find of the bundle of single-barbed long-necked arrowheads atop the miniature stoneware jars with handles is suggestive: these arrowheads, which have a peculiar morphology and were typologically new for the time, were prized alongside pottery highly symbolic of the Korean peninsula.

Let us now consider the chronological positioning of the iron arrowheads. A small number of the S-shaped arrowheads are of the standard type (Fig. 3:1), but most are strongly elongated examples (Fig. 3:2–7). While some may consider it appropriate to categorize the latter as a new type, as they are long, extremely narrow, and the characteristic side projections are all but gone, they can no doubt be positioned as the final stage in the evolution of the S-shaped arrowheads. The barbed willow leaf-shaped arrowheads (Fig. 3:8–11) have deep barbs and a square neck. While the longer bodied examples are typologically newer, many are of them have relatively short bodies, suggesting that the barbed willow leaf-shaped arrowheads from Nonaka were not the newest for their time. All of the short-necked arrowheads (Figs. 3:12–15) are double-edged, with a neck length ranging from 4.3 to 5.7 centimeters. While Group 3 may include a double-shouldered example (Fig. 3:13),

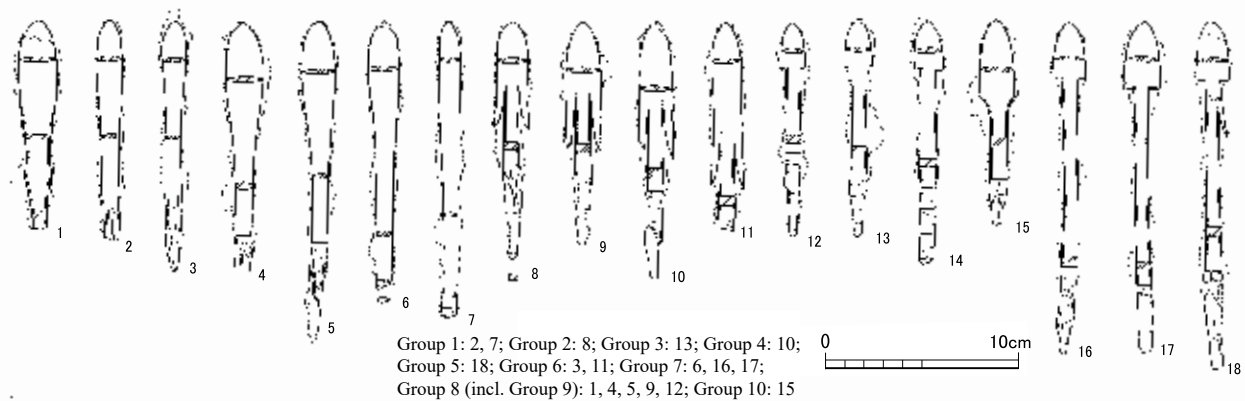


Fig. 3 Iron arrowheads excavated from Nonaka Kofun

confirmation via X-ray photography is necessary. Long-necked arrowheads (Figs. 3:16–17) consist mostly of double-edged examples, with neck lengths around 10.0 to 10.5 centimeters. They have relatively large heads and display older features for long-necked arrowheads. The single-barbed long-necked arrowheads (Fig. 3:18) have a large head and are equipped with an outward-slanting, short barb independent of the shoulder. According to the author's classification, they belong to Type I (Suzuki, 2003b). This type is representative of when single-barbed long-necked arrowheads first appeared, before the appearance of examples with a continuous head and barb (Class II).

According to the author's chronology of iron arrowheads (Suzuki, 2003a), the arrowheads from Nonaka Kofun are representative of Phase III, strongly suggesting that Nonaka Kofun was constructed in the M4 phase.

Tools The tools unearthed from Nonaka include square- and U-shaped spade or hoe blades, curved-edge sickles, hand sickles, knives (including those with a curled handle), and chisels. The iron sickles are all of the curved type, and no straight-edge examples were found. The discovery of several U-shaped blades is also noteworthy.

Researchers have long focused on changes in the sickles and hoes or spades of the Middle Kofun period (Tsude, 1967). The accepted theory is that curved sickles appeared in the M3 phase in addition to the previously dominant straight-edge examples, and U-shaped spade or hoe blades emerged in the M4 phase in addition to the previously dominant square-shaped examples. Indeed, both straight- and curved-edge sickles were found from such M3-phase mass iron burials as Nishihakayama Kofun in Osaka, Igenoyama Kofun in Kyoto, and Ariyama Kofun in Osaka.

Meanwhile, U-shaped blades may have taken some time to take root across the Japanese archipelago, as they required a change in production technology. Although early examples of U-shaped blades may have appeared in the M3 phase, it was only after entering the M4 phase, to which Nonaka belongs, that their numbers increased steadily. Based on the above, the combination of tools from Nonaka represents a newer stage within the development of iron

tools and can be recognized as representative of the M4 phase.

Talc objects A considerable number of talc goods were found from Nonaka. Those found from atop the mound include 81 knife imitations, two sickle imitations, one axe imitation, and one *magatama* (comma-shaped bead). Those found from the moat include two *magatama* imitations, two double-edged sword imitations, two perforated discs, and over 41,297 mortar-shaped beads (*usudama*).

The great number of knife-shaped objects are all flat and none are particularly elaborate. Many of them display newer features, such as an unclear border between the sheath and grip and a simplified grip design (Kitayama, 2002; Kawano, 2003). Additionally, the sickle-shaped objects are imitations of curved-edge examples.

Table 2 shows a comparison of the composition of mass talc imitation deposits with a focus on knife-shaped stone objects. The talc tool-shaped objects discovered from Nonaka are limited to knives, sickles, and axes, and can be considered to belong to the phase when sickle-shaped imitations began to be made with a curved edge (Phase 3 of Shiraishi's chronology; Shiraishi, 1985). Additionally, it is clear from the talc objects found from the surrounding moat that Nonaka was constructed during the phase when the three types of course flat imitations in the shape of *magatama*, short daggers without a tang, and perforated discs began to appear together.

Next, let us compare the talc objects from Nonaka with those from other *kofun* in the Furuichi Kofun Group. The talc *magatama* from Hakayama Kofun (Habikino City, 1994) are thick with an almost round cross section and are clearly older than those discovered from the top of Nonaka's mound. Additionally, the axe-shaped objects unearthed from Nishihakayama Kofun (Yamada et al (Eds.), 1997) display features deemed older than those from Nonaka, such as a seam along the socket and a significantly pronounced shoulder. In this way, a compositional and typological analysis of the talc objects suggests that Nonaka can be dated to the M4 phase.

Sue ware While the Sue ware from Nonaka has traditionally

Table 2 Composition of talc imitation goods found in large quantities

Name of Mounded tomb		Knife-shaped	Sickle-shaped		Axe-shaped		Chisel-shaped	Plane-shaped	Maga-tama		Sword-shaped		Perforated discs	Mortar-shaped beads (usudama)	Other talc imitations	Phase
	(Facility)		Straight-edged	Curved-edged	Socketed	Not socketed			Thick	Crude	With tang	Without tang				
Ishiyama	(East burial facility)	124	3		11		2	1	33					6878		M1
	(Center burial facility)	52			39						1					
	(West burial facility)	60	3		19		1							About 2000		
Asobizuka		137	5		8		1	1								M1
Kanakurayama		80+							72		1					M1
Kenzaki-tenjin'yama		71	1		1										Mirror-shaped 2, Jar-shaped 2, Tub-shaped 1, Pestle-shaped 1	M2
Kutsukawa-kurumazuka		40+	1						5000+						Tub-shaped 1	M3
Noge-ōtsuka	(No. 2)	233	1		1				5					12	Clog-shaped 1, Plate-shaped 1, Jar-shaped 2, Tub-shaped 1, Dish-shaped 3	M3
Shirashi-inariyama	(West burial facility)	113+							115			17			Winnow-shaped 1, Table-shaped 1, Jar-shaped 2, Pestle-shaped 1	M3
	(East burial facility)	114		1								18			Clog-shaped 1, Plate-shaped 1, Jar-shaped 2, Pestle-shaped 1, Stone bracelet 1	M3
Nonaka	(mound top)	81		2	1				1						(Made of sandstone: Mortar-shaped 1, Pestle-shaped 1)	M4
	(moat)									2		2	2	41,297+		
Katonboyama		360		13	4	2			120	605		1	1	About 20,000	Compound magatama 4	M5
Butai no. 1		67		1+(1)	7	2				1			15	202	Clog-shaped 1, Arrowhead-shaped 5	M6

been considered representative of the TK73 phase (according to the Sue-ware typochronology), the reexamination by Nakakubo Tatsuo (pp. 72–79) suggests that, although older traits can be observed in the miniature stoneware lidded jars with handles, the stoneware and early Sue-ware pedestaled dishes with triangular openwork, and pottery stands with staggered array openwork, newer traits closer to the TK216 phase can be observed in some of the stoneware and early Sue ware jars and pottery stands, in addition to the Haji ware. The pottery from Nonaka, including the stoneware, can therefore be considered to have been produced from the TK73 to the TK216 phases. When evaluating the production period of the pottery as a whole, it would thus be appropriate to emphasize the newest characteristics and date it the TK216 phase.

Cylindrical *haniwa* The cylindrical *haniwa* placed atop Nonaka include those unearthed during the 1964 excavation by Osaka University, as well as those uncovered through the numerous excavations conducted by Fujiidera City. As the cylindrical *haniwa* were all fired in a tunnel kiln and many of them exhibit Type-B lateral brush marks on the outer surface, they belong to Phase IV of Kawanishi Hiroyuki's cylindrical *haniwa* chronology (Kawanishi, 1978). Although few *haniwa* remain in their entirety, some examples from the 1964 excavation were able to be restored to their original state. We know from these examples that they had four clay bands dividing five tiers (Fig. 5:8).

The color of the cylindrical *haniwa* is brownish yellow to reddish brown; few of them have the firing or color tone resembling Sue ware. Rim types include everted rims with an end face (Fig. 4:1–3), erect rims (Fig. 4:4–6), and

attached rims. Attached rims are few in number and are believed to belong to the base of a representational *haniwa*. The majority of *haniwa* have erect rims, with many of them bearing incised lines directly below the rim. While these incised lines can be interpreted as related to an interval setting technique to determine the height of the topmost tier, the fact that many of the incisions were made quite clearly suggests that they may have been designed to visually highlight the edge of the rim. As similar features can be found in the *haniwa* from Daisen-ryō Kofun in Osaka (Katō, 2008), this may be recognized as a characteristic of *haniwa* belonging to the M4 phase. The clay bands are trapezoidal in cross section and stand approximately one centimeter in height (Fig. 4:7–9); the height of some, however, measures as low as 0.5 centimeters or less (Figs. 4:10–11). The distance between the bands is 10.5 to 11.5 centimeters, and the distance of those 4-row, 5-tier *haniwa* that were completely restored is 10.5 centimeters.

There are different types of Type B lateral brush marks seen on the outer surface of the *haniwa*, including Type Bb, Type Bc, and Type Bd (Ichinose, 1988). Of these, Type Bb are few in number and can only be observed in certain sections, such as the topmost tier. It seems reasonable to conclude that Type Bc is the most common type of brush mark seen in the cylindrical *haniwa* of Nonaka.

The cylindrical *haniwa* from Nonaka can be positioned at stage 2 of phase IV according to the *Haniwa Kentōkai* chronology (Haniwa Kentōkai, 2003a & 2003b). This would make the *haniwa* of Nonaka roughly contemporary to those of Daisen-ryō Kofun, which can be seen to have similar features.

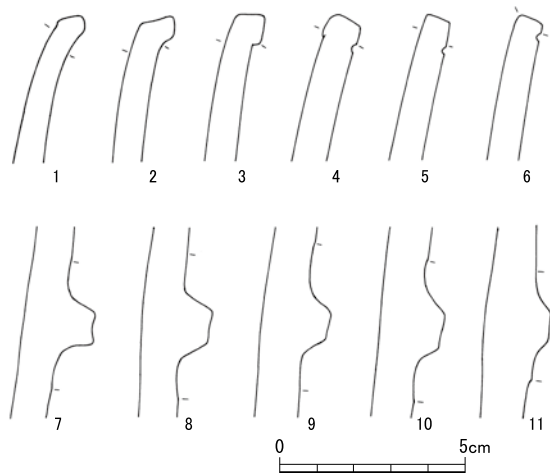


Fig. 4 Characteristics of *haniwa* excavated from Nonaka Kofun

The construction period of Nonaka Kofun While some of the artifacts unearthed from Nonaka Kofun include those retaining older characteristics, such as leather helmets and some of the stoneware jars with handles and early Sue ware, the majority of the finds, however, can be dated to a slightly newer phase. The reexamination of the artifacts contained in this chapter, which is based on a comparison between artifact groups showing the newest characteristics, suggests that Nonaka Kofun was constructed in the M4 phase (newer stage of the middle phase of the Middle Kofun period) of the author's chronology. This phase corresponds roughly to the TK216 phase of the Sue-ware typochronology and overlaps to some extent with stage 2 of phase IV of the Haniwa Kentōkai chronology. According to the traditional *kofun* chronologies, Nonaka can be dated to early phase 8 of the chronology established by Wada Seigo (Wada, 1987) and early Phase 7 of the Round Keyhole Tomb Chronology (Hirose, 1991).

2 Hakayama Kofun and its surrounding *kofun*

As the precision of *kofun* chronology increases, it has become possible to consider the construction period of Hakayama Kofun in relation to its satellite tomb, Nonaka Kofun, in more detail. Additionally, there are several square *kofun* surrounding Hakayama that are similar in character to Nonaka. In this section, let us examine the construction periods and locations of the square mounded tombs surrounding Hakayama.

Overview of Hakayama Kofun Hakayama Kofun is a 225 meter-long round keyhole tomb and ranks as the fifth largest mounded tomb in the Furuichi Kofun Group. Among the *kofun* built around the same time in the Furuichi-Mozu Kofun Group, it ranks only behind Konda-gobyōyama (425 meters) and Kamiishizu-misanzai (365 meters). It has been confirmed that an oblong chest-shaped stone coffin with a concave lattice pattern on its lid was placed within its burial facility and that a relatively large number of *haniwa* has

been unearthed from the mound (Habikino City, 1994).

While the nature of Hakayama's burial goods is uncertain, it is possible to infer the date of construction from the talc *magatama* and *haniwa* that were found atop the mound. The talc *magatama* are thick and, as mentioned above, display characteristics deemed older than those found from Nonaka. The cylindrical *haniwa* found from the outer bank (Yamada et al (Eds.), 1997) comprise both open-fired and tunnel kiln-fired examples (ratio of *haniwa* with black spotting: 20%). Most of the *haniwa* display Type Ba or Type Bb lateral brush marks. Based on the above, Hakayama Kofun can be assigned to the earliest phase IV of Kawanishi's chronology and to stage 2 of phase III of the Haniwa Kentōkai's chronology⁽⁵⁾.

Mukōhakayama Kofun This *kofun* is a two-tiered square mounded tomb measuring 68 meters to a side. Excavations revealed that it was built along the outer bank of Hakayama as a part of the same construction project (Habikino City, 1994). From the fact that only *haniwa* with black spotting have been discovered, that Type Ba lateral brush marks are found on the outer surface, and that the distance between the clay bands measures a wide 12.5 to 13.4 centimeters suggests that the cylindrical *haniwa* can be situated within phase III of Kawanishi's chronology and stage 2 of phase III of the Haniwa Kentōkai's chronology. Compared with the *haniwa* unearthed from Hakayama's outer bank, the *haniwa* of Mukōhakayama display older traits. Given the limited number of examples unearthed from both tombs, however, it is difficult to conduct an accurate comparison. The period of construction can therefore be considered as roughly the same as that of Hakayama.

Nishihakayama Kofun This *kofun* is a square mounded tomb measuring 20 meters to a side and located to the south of Hakayama. The mass burial of iron goods below the top of the mound was excavated, revealing a large number of swords and tools (Yamada et al (Eds.), 1997). The existence of curved-edge iron sickles suggests that the iron objects can be dated to the M3 phase. The fact that *haniwa* both with and without spotting were found (ratio of *haniwa* with black spotting: 9%), that most of the *haniwa* were found with Type Bb lateral brush marks, and that the average distance between the clay bands is approximately 12.2 centimeters suggests that the *haniwa* can be dated to the earliest phase IV of Kawanishi's chronology and stage 2 of phase III of the Haniwa Kentōkai's chronology. This would make it roughly contemporary to Hakayama.

Jōganjiyama Kofun This *kofun* is a two-tiered square mounded tomb measuring 67 meters to a side and built directly in contact with the outer bank of the front square end of Hakayama. While there are a few examples of *haniwa* with black spotting (ratio of *haniwa* with black spotting: 3%), the majority were fired in a tunnel kiln (Yamada et al (Eds.), 1997). Although no *haniwa* retain their complete form, the fact that many of them have a curved

rim with an end face and highly placed clay bands suggests that they are older than Nonaka. These *haniwa* can be dated to the earliest phase IV of Kawanishi's chronology and stage 1 of phase IV of the Haniwa Kentōkai's chronology.

Difference in construction periods As examined above, a difference can be observed in the construction periods of Hakayama Kofun and its surrounding square mounded tombs (Fig. 6; Yamada et al (Eds.), 1997). This time difference falls within the M3 to M4 phases of the author's chronology and within two Sue-ware or *haniwa* chronological phases. Converted into calendrical years, this would be a maximum of 30 to 40 years. The burial goods of Nonaka, including the arms and armor, can be considered to have been prepared in the generation following the death of the individual buried in Hakayama Kofun⁽⁶⁾.

3 Nonaka Kofun and satellite tombs

Definition of satellite tombs It is apparent that the great amount of burial goods found from Nonaka, a small square mounded tomb measuring 37 meters to a side, could not have been prepared solely by the interred. Considering that Nonaka was constructed within the Furuichi Kofun Group, which was home to numerous giant keyhole tombs, it is

highly likely that the massive burial of arms and armor was conducted under the auspices of the powerful administration.

Kofun adjacent to large keyhole tombs and clearly inferior in size and shape are called satellite tombs (*baichō*). While debate has long continued over their nature (Fujita, 2006), in this section, we will examine Nonaka according to the definition of satellite tombs established by Nishikawa Hiroshi (Nishikawa, 1961): namely, (1) a clear subordinate relationship with the main tomb; (2) contemporaneity with the main tomb; and (3) a planned or structured layout in relation to the main tomb.

Hierarchical difference from the main tomb Of the four square kofun surrounding Hakayama, Jōganjiyama and Mukōhakayama are significantly larger than the typical square *kofun* of the Middle Kofun period. Additionally, measuring 37 meters to a side, if Nonaka had been independently constructed, it would surely be considered a large-scale square *kofun*. Nevertheless, a clear hierarchical difference can be witnessed between the giant Hakayama and these surrounding square tombs. It is thus possible to consider all four surrounding *kofun* as being subordinate in both scale and shape to the main tomb.

Contemporaneity with the main tomb As discussed above, Nonaka was constructed after Hakayama and there

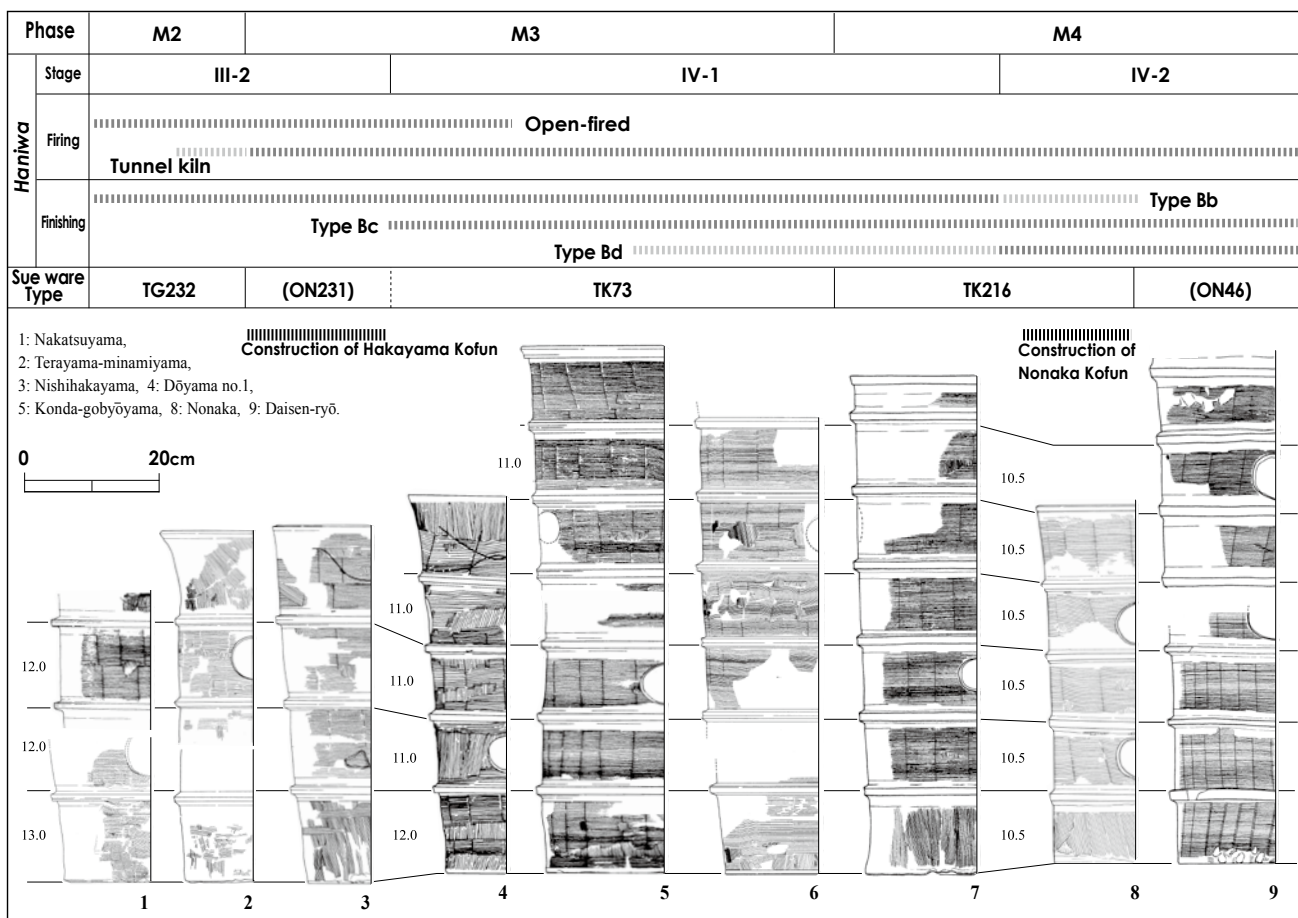


Fig. 5 Evolution of *haniwa* found mainly in the Furuichi-Mozu Kofun Group

may have been a gap of at most 30 to 40 years between them. This gap, however, does not negate the likelihood that the respective occupants of Hakayama and Nonaka had roughly overlapping periods of activity. This archaeologically observable time difference of several phases can be interpreted as within the range of contemporaneity allowed by the above definition of satellite tombs.

Planned layout Mukōhakayama, Nishihakayama, and Jōganjiyama were constructed parallel to the outer bank of Hakayama. Additionally, the moat surrounding Hakayama's outer bank is shared by Mukōhakayama and a bridge was discovered spanning the moat. This indicates a certain level of planning or structure to their layout. On the other hand, we notice a difference between the layout of these three *kofun* and that of Nonaka: the latter was constructed a slight distance away from Hakayama's outer bank, with which its axis does not run parallel. These slight differences in layout

may be related to the temporal difference between Nonaka and Hakayama (Yamada et al (Ed.), 1997). However, given the close distance of 75 meters between the bases of their mounds and the orientation of Nonaka in relation to the center of Hakayama's rear round section, it is likely that there was indeed a certain level of planning surrounding the location of its construction.

Redefinition and significance By interpreting satellite tombs in the above way, I have demonstrated that Nonaka can be designated as a satellite tomb of Hakayama. Next, I would like to consider the nature of the individual buried within the satellite tomb of Nonaka. If we interpret the individuals buried within the round keyhole tombs as manifestations of chiefly power responsible for integrating the local communities or of the central kingship, we could easily consider, as many scholars do, that the individuals buried in the surrounding satellite tombs were in positions

AD	Phase	Wada	Hirose	Sue ware	Haniwa	Absolute dating	Major kofun in Mozu-Furuichi Kofun Group (Surrounding tombs of Hakayama)	Abbreviated chronological table	Wa	Baekje	Silla	Goguryeo	Yan	Northern Dynasty	Southern Dynasty	Absolute dating (China and Korea)
375	4							369 Seven-pronged sword made for Wa by Baekje								
		M1	4		III 1		Tsudō-shiroyama									
400		M2	5					391 Wa, Korean peninsula campaign								
		M2	6	5				400 Goguryeo, Southeastern campaign								
		M3	7	6				413 Wa, Tribute to Eastern Jin?								
425		M4						420 Fall of Eastern Jin, Rise of Song								
		M4						421 Wa San, Tribute to Song								
		M4						425 Wa San, Tribute to Song								
		M4						427 Goguryeo capital moved to Pyongyang								
		M4						430 Wa, Tribute to Song								
450		M5	8	7				438 Wa Chin, Tribute to Song								
		M5						443 Wa Sai, Tribute to Song								
		M5						451 Wa Sai, Tribute to Song								
475		M6	9	8				462 Wa Kō, Tribute to Song								
		M6						475 Fall of Baekje's capital								
		M6						477 Wa, Tribute to Song								
		M6						478 Wa Bu, Tribute to Song								
		M6						479 Establishment of Qi								
500		M6						493 Northern Wei moved its capital to Luo Yang								
		M6						503 Mirror made by Sama (Suda Hachiman Shrine)								

Fig. 6 Chronology of the Middle Kofun period

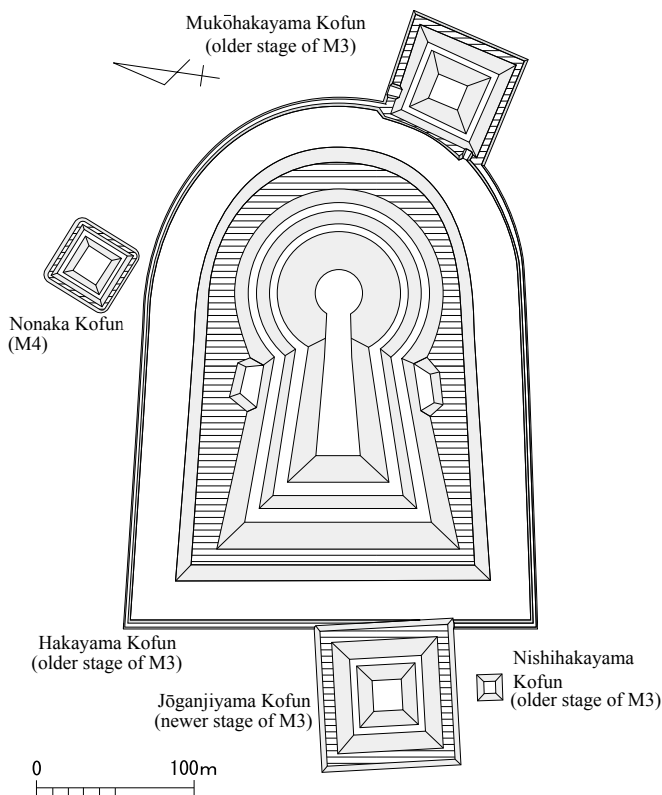


Fig. 7 Hakayama Kofun and its surrounding square tombs

of aiding the administration.

Hakayama Kofun and its surrounding satellite tombs compose a *kofun* complex centered on a giant keyhole tomb at its center. If we can assume that an individual was buried in each satellite tomb, we might consider that this complex represents a group of subordinates centered upon the individual buried within Hakayama⁽⁷⁾. While it is difficult to elucidate the exact nature of their connection, it is suggestive that Nonaka was equipped with burial goods newer than the construction period of the main tomb. Considering that the individual buried in the satellite tomb remained active even after the death of the individual buried in the main tomb, it is likely that the relationship between them was one that was unchangeable by the passage of time, such as blood relatives, rather than an immediate master-servant relationship.

Based on the great amount of arms and armor, it is believed that the occupant of Nonaka was primarily responsible for the management of weapons and armor. Additionally, the existence of stoneware suggests that the individual may also have been involved in diplomatic relations with the Korean peninsula. These responsibilities, however, would not have resulted solely through a personal relationship with the occupant of Hakayama; rather, the individual can be considered as someone closely related to the occupant of Hakayama and also responsible for the military and diplomatic affairs of the Wa administration

based on his sociopolitical ranking.

Conclusion

Through a reexamination of the artifacts unearthed from Nonaka Kofun, I demonstrated that the armor and other burial goods, talc objects, Sue ware, and *haniwa* all exhibit a point of contact with the TK216 phase, and that Nonaka was constructed in the M4 phase (newer stage of the middle phase of the Middle Kofun period). Additionally, I considered the significance of the temporal difference between Nonaka and the adjacent Hakayama and noted the necessity for further discussion concerning the nature of the occupants of satellite tombs, based on a reformulation of their definition.

The shape, size, and location of Nonaka are all considered to represent the background of the individual buried within. Meanwhile, I interpreted the burial goods and ritual artifacts as indicating the individual's role within the Wa administration.

Given that satellite tombs are limited to the Middle Kofun period, the stratified conception of *kofun* occupants presented here may offer insight into the nature of royal authority during the age of the Five Kings of Wa. It is the author's hope that increasingly precise debate continues through comprehensive analysis of those satellite tombs available to archaeological investigation.

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Notes

- (1) Similarly, the riveted rectangular-plate cuirass from Inadō no. 21 in Fukuoka also has a continuous torso construction and its rear base plate is divided down the middle. Cuirass no. 6 from Nonaka also has a similar base plate division.
- (2) Most of the rivets found from Nonaka have a head diameter of 6.0 to 7.0 millimeters, which is greater than the index of 5 millimeters for Takizawa's Type I (small rivet type). The figures provided by Takizawa should be regarded as general guidelines.
- (3) According to the classification by Fujita, the neck guards unearthed from Nonaka all belong to Type IIIc, in which the bottoms of the placket plates and main body plates align. However, there are several examples that would be more accurately categorized as Type IIb, in which the bottoms do not align. Details are as follows: Type IIb: neck guard no. 7; Type IIIc: nos. 3 and 5; intermediate form between Type IIb and IIIc: nos. 1, 2, 4, and 6.
- (4) Riveted lamellar keeled helmets with these characteristics are common during the transitional phase from those with base plates attached from the outside to those attached from the

inside. This corresponds to the M4 phase. Although I positioned the emergence of these characteristics during the early TK208 phase (ON46 phase) in my analysis of riveted lamellar keeled helmets, it would not be contradictory to consider them to have emerged slightly earlier during the TK216 phase.

- (5) This is based on Sogō's comparative table (Sogō, 2008, p. 289). However, the possibility remains that this stage can be interpreted as the beginning of stage 1 of phase IV.
- (6) Although it is possible to propose the existence of an additional later burial within Hakayama, there is currently no evidence to support such a claim. It is also possible to interpret the newer armor and weapons buried in Nonaka as offerings dedicated to the Hakayama occupant.
- (7) Of Hakayama's satellite tombs, Nishihakayama shows no evidence of human burial, and it has been suggested that it was a mound used solely for burial goods (Yamada et al (Eds.), 1997).

References

- Ichinose, Kazuo. (1988). Furuichi Kofungun ni okeru ōgata kofun haniwa shūsei (*Haniwa of large tombs in the Furuichi Kofun Group*). *Ōzui gawa kaishū ni tomonau hakkutsu chōsa gaiyō* V, Ōsaka-fu kyōiku iinkai.
- Ueda, Mutsumi (Ed.). (1991). *Ishikawa ryūiki iseki gun hakkutsu chōsa hōkoku* (Report on the excavation of sites in the Ishikawa River Basin), VI. Fujiidera-shi kyōiku iinkai.
- Ueda, Mutsumi. (2003). Kofun jidai chūki ni okeru entō haniwa no kenkyū dōkō to hen'nen (Chronology of and state of research on cylindrical *haniwa* of the Middle Kofun period). *Haniwa ronsō*, 5:1–32.
- Katō, Ichirō. (2008). Daisen Kofun no entō haniwa (Cylindrical *haniwa* of Daisen Kofun). *Kinki chihō ni okeru ōgata kofun gun no kisoteki kenkyū*. JSPS KAKENHI (Grants-in-Aid for Scientific Research (A), No.17202020), 2005–2007. Nara: Nara daigaku bungaku bu bunkazai gakka.
- Kawanishi, Hiroyuki. (1978). Entō haniwa sōron (Comprehensive analysis of cylindrical *haniwa*). *Kōkogaku zasshi*, 64(2):1–70, 64(4):90–105.
- Kawano, Kazutaka. (2003). Sekisei mozōhin no hen'nen to girei no tenkai (Chronology and ritual use of stone imitation objects). *Teikyō daigaku yamanashi bunkazai kenkyūsho kenkyū hōkoku*, 11:15–27. Teikyō daigaku yamanashi bunkazai kenkyūsho.
- Kawamura, Kazuko. (1997). Furuichi Kofungun no haniwa seisan taisei: Hakayama Kofun shūhen no hōfun shutsudo entō haniwa no kentō kara (*Haniwa production in the Furuichi Kofun Group: with a focus on the square surrounding tombs*). *Nishihakayama Kofun*. Fujiidera-shi kyōiku iinkai.
- Kitano, Kōhei. (1976). *Kawachi Nonaka Kofun no kenkyū* (Research on Nonaka Kofun in Kawachi). Ōsaka daigaku bungakubu kokushi kenkyūshitsu.
- Kitayama, Mineo. (2002). Sekisei mozōhin fukusō no dōkō to sono igi (Burial of stone imitation objects and their significance). *Kodaigaku kenkyū*, (158):16–36.
- Shiraishi, Taichirō. (1985). Kamimatsuri to kofun no saishi (Ceremony and kofun ritual). *Kokuritsu Rekishi Minzoku Hakubutsukan Kenkyū Hōkoku*, Vol. 7. Kokuritsu rekishi minzoku hakubutsukan.
- Shiraishi, Taichirō, et al. (2008). *Kinki-chihō ni okeru ōgata kofungun no kisotekikenkyū* (Research on the major *kofun* groups of the Kinki region). JSPS KAKENHI (Grants-in-Aid for Scientific Research (A), No.17202020), 2005–2007. Nara: Nara daigaku bungakubu bunkazai gakka.
- Suzuki, Kazunao. (2003a). Chūki kofun ni okeru fukusō yajiri no tokushitsu (On the arrowheads of the Middle Kofun period). *Teikyō daigaku yamanashi bunkazai kenkyūsho kenkyū hōkoku*, 11:49–70. Teikyō daigaku yamanashi bunkazai kenkyūsho.
- Suzuki, Kazunao. (2003b). Kōki kofun ni maisō sareru tokushu tetsuzoku no keifu (On special arrowheads found in Late Kofun-period tombs). *Kenkyū kiyō*, No. 10. Zaidan hōjin Shizuoka-ken maizō bunkazai chōsa kenkyūsho.
- Suzuki, Kazunao. (2008). Maedō chōhōkei bunkatsu no sankaku ita tankō (Triangular-plate cuirasses with rectangular plates in front). *Morimachi enden kyūryō no kofungun*. Zaidan hōjin Shizuoka-ken maizō bunkazai chōsa kenkyūsho.
- Suzuki, Kazunao. (2012). Kozane byōdome shōkaku-tsuki kabuto no hensen to sono igi (Development of riveted lamellar keeled helmets and their significance). *Kokuritsu Rekishi Minzoku Hakubutsukan Kenkyū Hōkoku*, Vol. 173.
- Suzuki, Kazunao. (2014). Shichikan Kofun shutsudo ibutsu kara mita byōdome gihō dōn'yūki no jissō (The introduction of riveting technology as seen from the artifacts from Shichikan Kofun). *Shichikan Kofun no kenkyū*. Kyōto daigaku daigakuin bungaku kenkyūka.
- Sogō, Yoshikazu. (2008). Furuichi Mozu Tamateyama Kofungun no haniwa kenkyū no ayumi (History of research on the *haniwa* of the Furuichi, Mozu, and Tamateyama Kofun Groups). *Kinki chihō ni okeru ōgata kofun gun no kisoteki kenkyū*. JSPS KAKENHI (Grants-in-Aid for Scientific Research (A), No.17202020), 2005–2007. Nara: Nara daigaku bungaku bu bunkazai gakka.
- Takizawa, Makoto. (1991). Byōdome tankō no hen'nen (Chronology of riveted armor). *Kōkogaku zasshi*, 76(3):16–61.
- Tanabe, Shōzō. (1981). *Sueki taisei* (Sue-ware compendium). Kadokawa Shoten.
- Nishikawa, Hiroshi. (1961). Baichō-ron josetsu (Introduction to satellite tombs). *Kōkogaku kenkyū*, 8 (2):10–30.
- Tsude, Hiroshi. (1967). Nōgu tekkika futatsuno kakki (Two epochs in the spread of iron agricultural implements). *Kōkogaku kenkyū*, 13(3):36–51.
- Habikino City. (1994). *Habikino-shi shi* (History of Habikino City), Vol. 3, Historical sources 1. Habikino-shi shi hensan iinkai.
- Haniwa Kentōkai. (2003a and b). *Haniwa ronsō* (Research on *haniwa*), 4, 5.
- Hirose, Kazuo. (1991). Zempōkōenfun no kinai hen'nen (Chronology of keyhole tombs in the Kinai). *Zempō kōenfun shūsei, Chūgoku Shikoku-hen*. Yamakawa Shuppansha.
- Fujita, Kazutaka. (2006). *Kofun jidai no ōken to gunji* (The government and military of the Kofun period). Gakuseisha.
- Yamada, Yukihiro et al (Eds.). (1997). *Nishihakayama Kofun*. Fujiidera-shi kyōiku iinkai.
- Wada, Seigo. (1987). Kofunjidai no jikikubun wo megutte (Periodization of the Kofun period). *Kōkogaku kenkyū*, 34(2):44–55.

Issues Surrounding Collared Cuirasses

Sakaguchi Hideki

Three laced triangular-plate collared cuirasses were unearthed from Nonaka Kofun. Of the 11 cuirasses excavated, laced cuirasses were limited to these three. Furthermore, only these three were combined with the rare and highly decorative leather keeled helmets, each equipped with a feathered, three-pronged gilt-bronze ornament. Widely known through the reproduction on display at the Chikatsu Asuka Museum in Osaka, these collared cuirasses have come to represent Nonaka, itself.

Collared cuirasses have long attracted attention within armor research for their unique form and rarity, as less than 20 examples have been discovered. In this paper, I will present an overview of the collared cuirasses and introduce various issues surrounding their interpretation with the aim of enabling a multifaceted reevaluation of Nonaka.

History of excavations Pieces of laced triangular-plate collared cuirasses had already been excavated as early as before World War II at Shichikan Kofun in Osaka (1913) and Enshōji-hakayama no. 1 in Nara (1929). Unfortunately, looting had hindered a full understanding of their structure; soon after the war ended, however, a riveted triangular-plate collared cuirass was excavated in good condition from Kurohimeyama Kofun in Osaka (1947), enabling researchers to understand the armor's structure in full. Additional collared cuirasses were found from Mozu-ōtsukayama

Kofun (1951) and Nonaka Kofun (1964) in Osaka. The discovery of three collared cuirasses in their original positions from Nonaka enabled the first full restoration of laced examples, the results of which were published in the site report (Kitano, 1976) with line drawings (Fig. 1) and photographs. The continued accumulation of data, through the subsequent finds in good condition at Toyonaka-ōtsuka Kofun (1983) and Katano-higashikurumazuka Kofun (1988) in Osaka, increased researchers understanding of the production period of and variation seen within the collared cuirasses. Furthermore, one of the two laced square-plate cuirasses unearthed from Uedono Kofun in Nara happened to be a collared cuirass, revealing that their emergence actually preceded that of framed armor (Takahashi, 1987). The range of their distribution, which had been limited to the old provinces of Settsu, Kawachi, Izumi and Yamato, expanded to Tajima with the recent discovery of a collared cuirass from Chasuriyama Kofun (2002) in Hyogo (Fig. 3, p. 54).

As of today, collared cuirasses number over 16 examples and have been excavated from nine *kofun* (Table 1).

Morphological features The greatest difference from regular cuirasses is its unique form. The rear shoulder frame stretches widely to both sides like wings and curves forward under the armpits. A crescent-shaped iron plate covers the gap under the rear armpits caused by the unique shape of the widely opening shoulder frame. A semi-cylindrical collar rises from the center of the rear shoulder frame to protect the back of the neck. It has been suggested that, like the keeled helmet, the origin of this peculiar shaped cuirass can be traced to earlier ritual dress of bird motif (Suzuki, 1999). Compared with regular cuirasses, a larger number of components are required to compose its complicated form. Throughout the entire production process, from the number of iron plates to the cutting, working, and assembling of parts, a greater expenditure of effort and cost would be required (Kitano, 1969). On the other hand, a cuirass of this shape would significantly limit

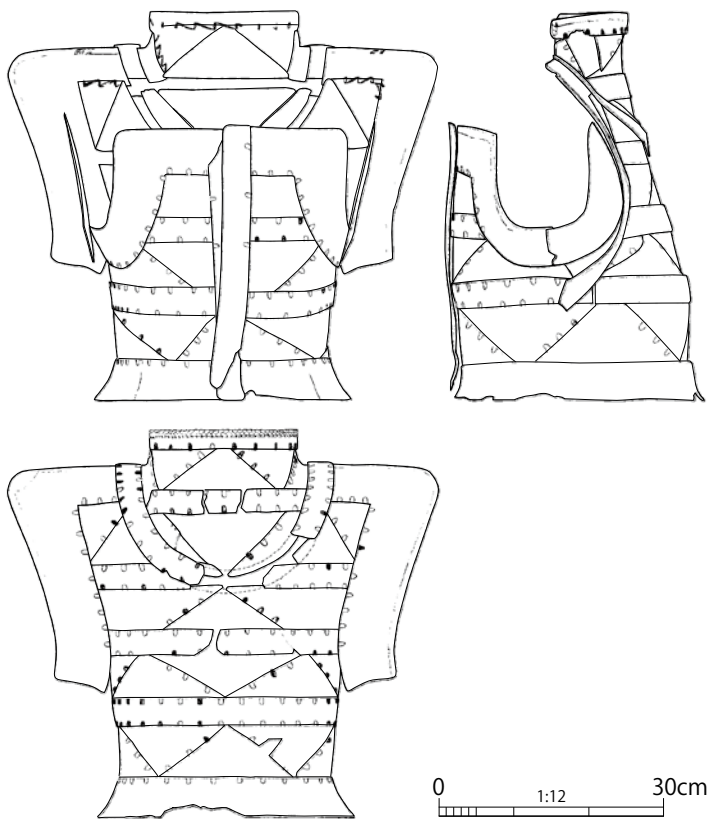


Fig. 1 Collared cuirass unearthed from Nonaka Kofun (after drawing by Kitano Kōhei)

Table 1 List of collared cuirasses

Name of mounded tomb	Province	Plate shape	Joining method	Amount
Uedono	Yamato	Square	Laced	1
Katano-higashikurumazuka (coffin no. 1)	Kawachi	Triangle		1
Mozu-ōtsukayama (coffin no. 1)	Izumi			1
Toyonaka-ōtsuka (eastern coffin, facility no. 2)	Settsu			2
Chasuriyama (facility no. 1)	Tajima			1
Shichikan (1913 excavation)	Izumi			1≦
Nonaka (row no. 1)	Kawachi			3
Enshōji-hakayama (easten clay-encased coffin)	Yamato			5≦
Kurohimeyama (front)	Kawachi			Riveted

the free movement of the wearer: the side fins and collar would greatly hinder movement of the arms, neck, and shoulders.

Another important characteristic is that, after the emergence of laced framed cuirasses and all the way through the appearance of riveted examples, these collared cuirasses utilized only triangular plates. It has been suggested that triangular plates were adopted owing to their supposed symbolic effect of warding away evil, rather than any attempts at improving productivity or mobility (Sakaguchi, 1998). The high level of affinity between such uniquely shaped triangular plates and uniquely shaped collared cuirasses is suggestive.

Emergence and development As mentioned above, the discovery of a laced square-plate collared cuirasses from Uedono Kofun revealed that collared cuirasses had emerged prior to the appearance of framed armor. In other words, at the end of the Early Kofun period, around the second half of the 4th century, the form of the collared cuirass had already been developed. It has been suggested that its unique shape can be traced to similar wooden cuirasses dating to the Yayoi period, such as those uncovered from the Sasai site in Fukuoka (Suzuki, 1999).

In the Middle Kofun period, after the standardization of iron cuirasses, triangular plates were adopted; furthermore, after the introduction of riveting technology, cuirasses transitioned from laced to riveted examples. It has been suggested that the number of plates decreased throughout this period, while the shape of the cuirass remained the same (Takahashi, 1987; Katō, 2010; Suzuki, 2013). Even among the three collared cuirasses from Nonaka, differences can be witnessed in the configuration of individual pieces and this is especially prominent in the collar (Fig. 3, p. 71). The only example of a riveted collared cuirass was found from Kurohimeyama Kofun, which is dated to the second half of the 5th century. It is therefore apparent that the production of collared cuirasses, while extremely few in number, continued for approximately 100 years.

The production of laced collared cuirasses continued even after the introduction of riveting technology, attested to by the fact that all the other cuirasses discovered from Nonaka were riveted examples (which is also highly likely at Enshōji-hakayama no. 1) and that a riveted helmet was found together with a laced collared cuirass at Chasuriyama Kofun. The suggestion that this was due to a continued recognition of tradition within contemporary armor (Suzuki, 2010), while not limited to only collared cuirasses, is interesting when considering how the people of the time may have understood the collared cuirasses.

Geographic distribution Until a laced triangular-plate collared cuirass was discovered from Chasuriyama Kofun in Tajima, collared cuirasses had been found only in Settsu, Kawachi, Izumi and Yamato, a limited area that would later come to be called the “Kinai”. As they had only been found

around the seat of the central Yamato authority, scholars came to view them as a type of armor intimately related to the political center. Based on this, the discovery of a collared cuirass from the slightly removed Chasuriyama Kofun was interpreted as signifying an emphasis placed on the region as a strategic means of connecting the Kinai to the Sea of Japan (and, thereby, the Korean peninsula) (Katō, 2010).

In the future, additional collared cuirasses may be found in regions far away from the Kinai. In order to properly evaluate such discoveries, it will be necessary to consider each case individually and situate them within a broad, systematic framework.

Significance There have been a number of attempts to understand the nature of collared cuirasses by focusing on the various characteristics reviewed above. Since research began, much attention has focused on their concentration in the central Kinai region and the fact that they are often found buried together with mass deposits of armor. This led scholars to view the occupants of those *kofun* in which collared cuirasses had been buried as in a strongly hierarchical relationship with the central administration (Kitano, 1969). Furthermore, the fact that the collared cuirasses of Nonaka were found together with the unique leather keeled helmets attracted significant attention, as well. Based on a study of patterns in armor ownership, it has been suggested that this armor combination was specially reserved for the guards and warriors of high-ranking individuals (Fujita, 1996). Others have drawn attention to the association between the leather keeled helmet and variant-plate cuirass of Shichikan Kofun (Hashimoto, 2002) and the existence of armor specially distinguished based on differing material, shape, and structure (Morishita, 1997). On the other hand, it has also been demonstrated that no special treatment can be observed in the actual placement during burial of the collared cuirasses (Morimoto, 2012).

Given its unique form and the constrained movement of the wearer, it is highly likely that the collared cuirass, rather than being used on the battlefield, was a decorative and symbolic suit of armor designed to represent some important attribute of the wearer.

During the introduction of riveting technology to the Japanese archipelago prior to the construction of Nonaka Kofun, foreign-style armor was prized by the central administration, which emphasized the decoration of armor and attempted to expand its variation; this led to the acceptance of foreign craftsmen who were able to meet these needs (Sakaguchi, 2008). Within this increased variation, it is possible that collared cuirasses, a type of domestic armor with a traditional form maintained from the Early Kofun period, were differentiated as special armor imbued with the role of not only warding off evil, but also representing the rank and position of the wearer.

References

- Katō, Ichiro. (2010). Chasuriyama Kofun shutsudo kacchū no tokuchō oyobi kōsei to sono igi (The characteristics, composition, and significance of the armor from Chasuriyama Kofun). *Shiseki Chasuriyama Kofun*. Hyōgo-ken kyōiku iinkai.
- Kitano, Kōhei. (1969). 5 seiki ni okeru kacchū shutsudo kofun no shomondai (Issues surrounding tombs with armor in the 5th Century). *Kōkogaku zasshi*, 54(4):1–20.
- Kitano, Kōhei. (1976). *Kawachi Nonaka Kofun no kenkyū* (Research on Nonaka Kofun in Kawachi). Ōsaka daigaku bungakubu kokushi kenkyūshitsu.
- Kitano, Kōhei. (2005). Nonaka Kofun to eritsuki tankō (Nonaka Kofun and collared cuirasses). *Mozu kofungun to Kurohimeyama Kofun*. Sakai-shi hakubutsukan.
- Sakaguchi, Hideki. (1998). Chōhōban kawatoji tankō to sankaku ita kawatoji tankō (Rectangular- and triangular-plate laced cuirasses). *Shirin*, 81(5):1–39.
- Sakaguchi, Hideki. (2008). Iwayuru ‘Byōdome gihō dō’nyūki’ no hyōka (On the significance of the introduction of riveting). *Kodai buki kenkyū*, 9: 39–51.
- Suzuki, Kazunao. (1999). Chōsō no bujin (Warriors in bird dress). *Kokka keiseiki no kōkogaku*. Ōsaka daigaku kōkogaku kenkyūshitsu.
- Suzuki, Kazunao. (2010). Kofun jidai no kacchū ni miru dentō no ninshiki (The recognition of traditional elements in Kofun-period armor). *Ōken to buki to shinkō*. Dōseisha.
- Suzuki, Kazunao. (2013). Mozu kofungun no buki bugu ni miru tokushitsu (The characteristics of the arms and armor of the Mozu Kofun Group). *Shikkoku no bugu Hakugin no buki*. Sakai-shi.
- Takahashi, Takumi. (1987). Ōtsuka Kofun shutsudo kacchū no hen’nenteki ichi (The chronological positioning of the armor from Toyonaka-ōtsuka). *Settsu Toyonaka-ōtsuka Kofun*. Toyonaka-shi kyōiku iinkai.
- Hashimoto, Tatsuya. (2002). Kyūshū ni okeru kofun jidai kacchū (The Kofun-period armor of Kyushu). *Gekkan kōkogaku journal*, 496:4–7.
- Fujita, Kazutaka. (1996). Shin’etai to eihei no busō (The armor of elite guards). *Muromiyayama Kofun han’i kakunin chōsa hōkoku*. Gose-shi kyōiku iinkai.
- Morishita, Shōji. (1997). Bagu to bugu (Horse trappings and armor). *Ōja no busō: 5 seiki no kinkō gijutsu*. Kyōto daigaku sōgō hakubutsukan.
- Morimoto, Tōru. (2012). Eritsuki tankō no fukusō yōsō (The nature of the burial of collared cuirasses). *Kanpō*, 15. Ōsaka-fu Chikatsu Asuka hakubutsukan.

A Comparative Analysis of the Armor from Nonaka Kofun

Miyoshi Yūtarō and Takeuchi Yūki

The armor of Nonaka Kofun has differences in shape, the number and size of its iron plates, and the number of rivets used (see Column 2 for naming conventions). In order to showcase these features, we have included expanded diagrams of the cuirasses as viewed from the rear (Figs. 1-3). While it would not have been structurally possible to actually stretch the three-dimensional cuirasses this far open, they are presented this way for heuristic purposes.

Riveted cuirasses In this section, we will examine some of the features of the riveted cuirasses (Figs. 1 and 2). First, we will examine the iron plates. There are differences in the number of plates used in the riveted triangular-plate cuirasses. For example, while cuirass nos. 1, 5 and 7 use nine plates for both the middle and lower tiers, cuirass no. 6 uses 11 plates on the middle tier and 12 plates on the lower tier. Not only is this more than the other cuirasses, the iron plates, themselves, are smaller.

Next, let us examine the riveted rectangular-plate cuirasses. While the edges of the plates below the armpit are cleanly aligned vertically on cuirass no. 2, those of cuirass no. 4 are cut diagonally and are not aligned. While these two cuirasses are typologically the same, they display slight differences when examined closely.

Let us now direct our attention to the number of rivets. In particular, it is well known that the number of rivets on the top band of the rear of the cuirass is effective in determining the chronological position of the armor, as newer cuirasses have fewer rivets. Among the Nonaka cuirasses, the rivet numbers of triangular-plate cuirasses range from 11 to nine and those of rectangular-plate cuirasses range from 13 to nine. Cuirass no. 4 uses 13 rivets: this many rivets situates it as one of the oldest of its type. It is important to note that there is variety in the number of rivets even among cuirasses buried during the same phase. Looking at the width of the top rear band, however, it becomes apparent that, while the number of rivets differs, the band width of riveted rectangular-plate cuirasses is consistently narrow: the width is over 4.0 centimeters in riveted triangular-plate cuirasses and under 4.0 centimeters in a majority of the riveted rectangular-plate cuirasses.

An analysis of the position of the rivets joining the front placket plates is also instructive. For example, the two rivets connecting the placket to the front upper left band of cuirass no. 4 are located parallel with the rivets on the band. As a plate is located beneath the band, these two rivets fasten a total of three iron sheets. Additionally, each plate is fastened to the placket with one rivet. The same fastening points are seen in all the other rectangular-plate cuirasses, as well. In contrast, the connecting points differ for each triangular-plate cuirass.

The head diameter of the rivets ranges from five millimeters, as in cuirass no. 7 (triangular-plate), to nearly seven millimeters, as seen in cuirass no. 2 (rectangular-plate), revealing that no identical rivets were used between the two types. However, all the rivet head diameters of rectangular-plate cuirass nos. 2 to 4 are 6.5 millimeters, implying a standard adopted within this type of cuirass.

As the location of the placket fastening points and the size of the rivets are not affected by the physical size of the wearer, the similarities between the riveted rectangular-plate cuirasses would suggest a limited or standardized production system. On the other hand, the few similarities between the triangular-plate cuirasses would suggest that each was newly and elaborately designed at the time of production.

Collared cuirass Fig. 3 is an expanded diagram of the collared cuirasses. Differences among the collared cuirasses are prominent in the collar plates, with those of cuirass no. 9 being most noteworthy. Not only does it lack the upper rear band, the fourth tier from the top is one solid semicircular plate, which most likely resulted from an effort to reduce the total number of plates. Additionally, while the collar's second tier on both cuirass nos. 8 and 10 is made of five plates, that of no. 9 is only made of three. As this section is heavily curved, it would have been technologically more difficult to construct it with a fewer number of plates. This suggests that similarities and differences, in such areas as plate position and collar construction, existed even among examples of such elaborated armor.

While Nonaka was buried with a great amount of armor, which share significant similarities, a close examination of the structure and technology of each cuirass reveals major differences, as well. There has been debate over whether these cuirasses were made by different craftsmen or perhaps ceremonially offered by different people. It is important to remember that even cuirasses made by the same craftsman can have slight differences, and intentional modifications to fit the wearer's figure must also be taken into consideration. As these slight differences between cuirasses do indeed have a bearing on our understanding of Nonaka Kofun, further analysis based on detailed examination of the artifacts is necessary.

[Note] Figs. 1 and 2 were prepared by Miyoshi, Fig. 3 was created by Takeuchi, and the main text was written by Miyoshi based on discussion between the two. Some of the illustrations were based on original diagrams prepared by Suzuki Kazunao and Hashimoto Tatsuya, who also provided a great deal of advice. We would like to express our sincerest appreciation.

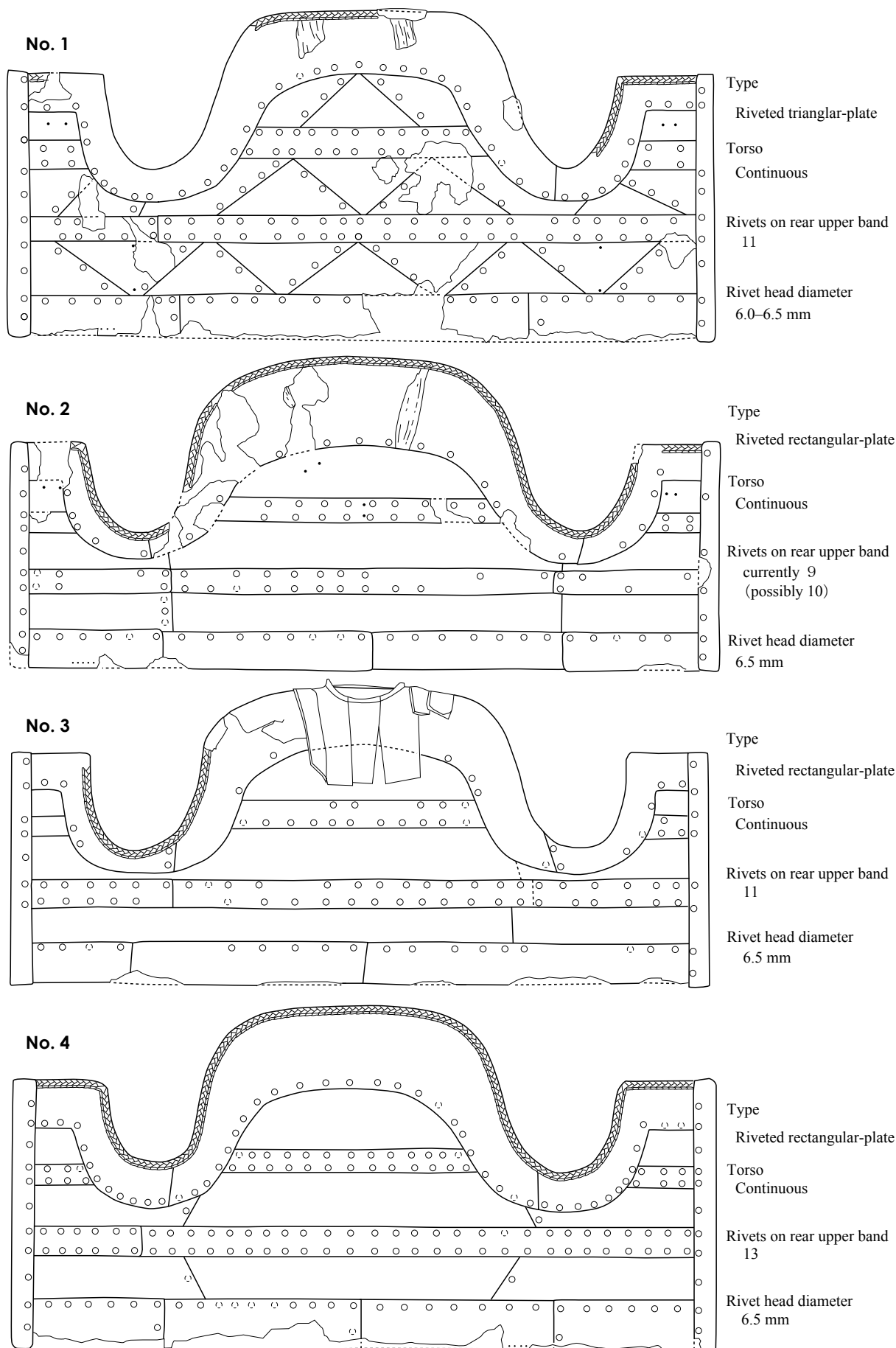


Fig. 1 Expanded diagrams of the riveted cuirasses (1)

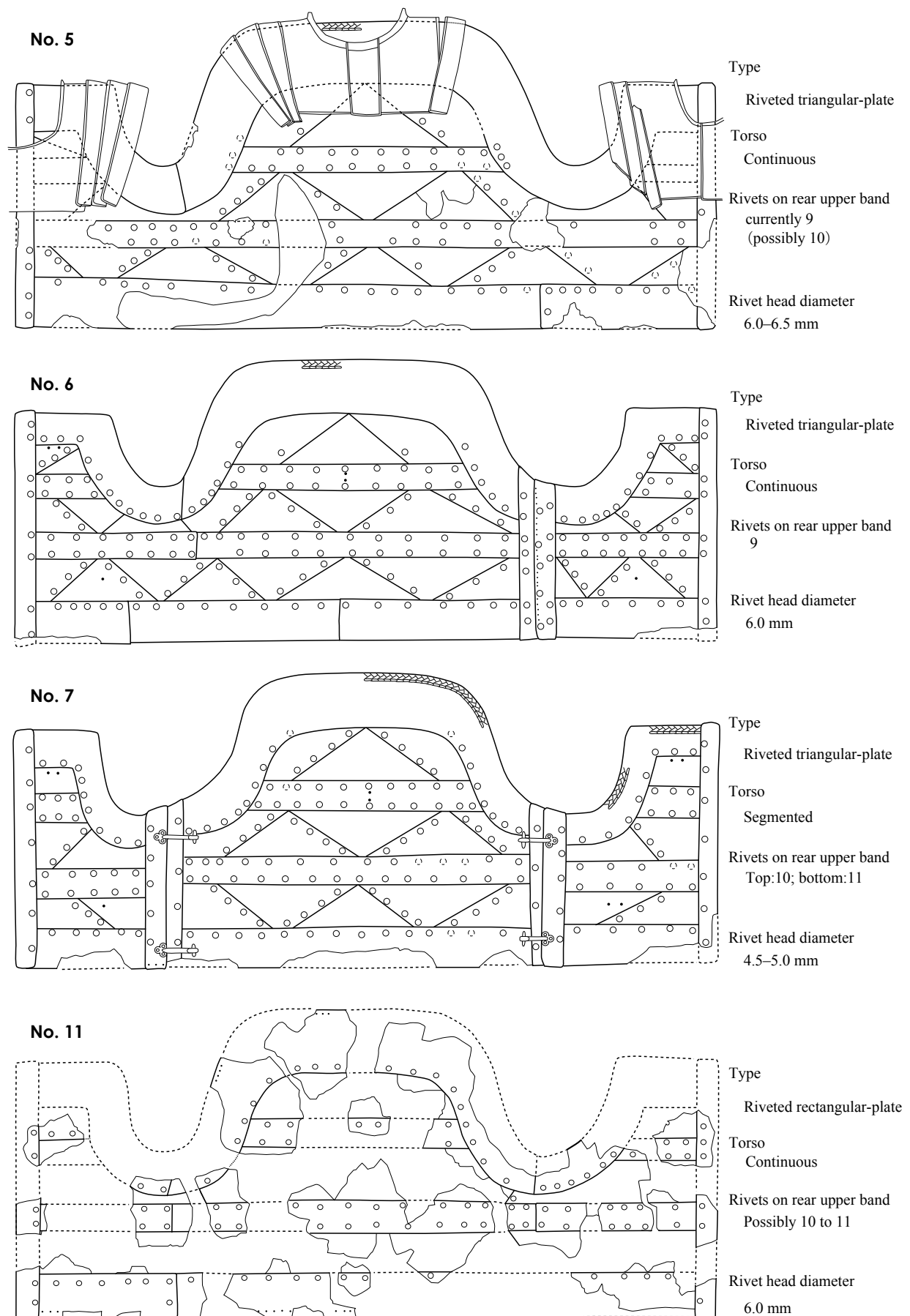


Fig. 2 Expanded diagrams of the riveted cuirasses (2)

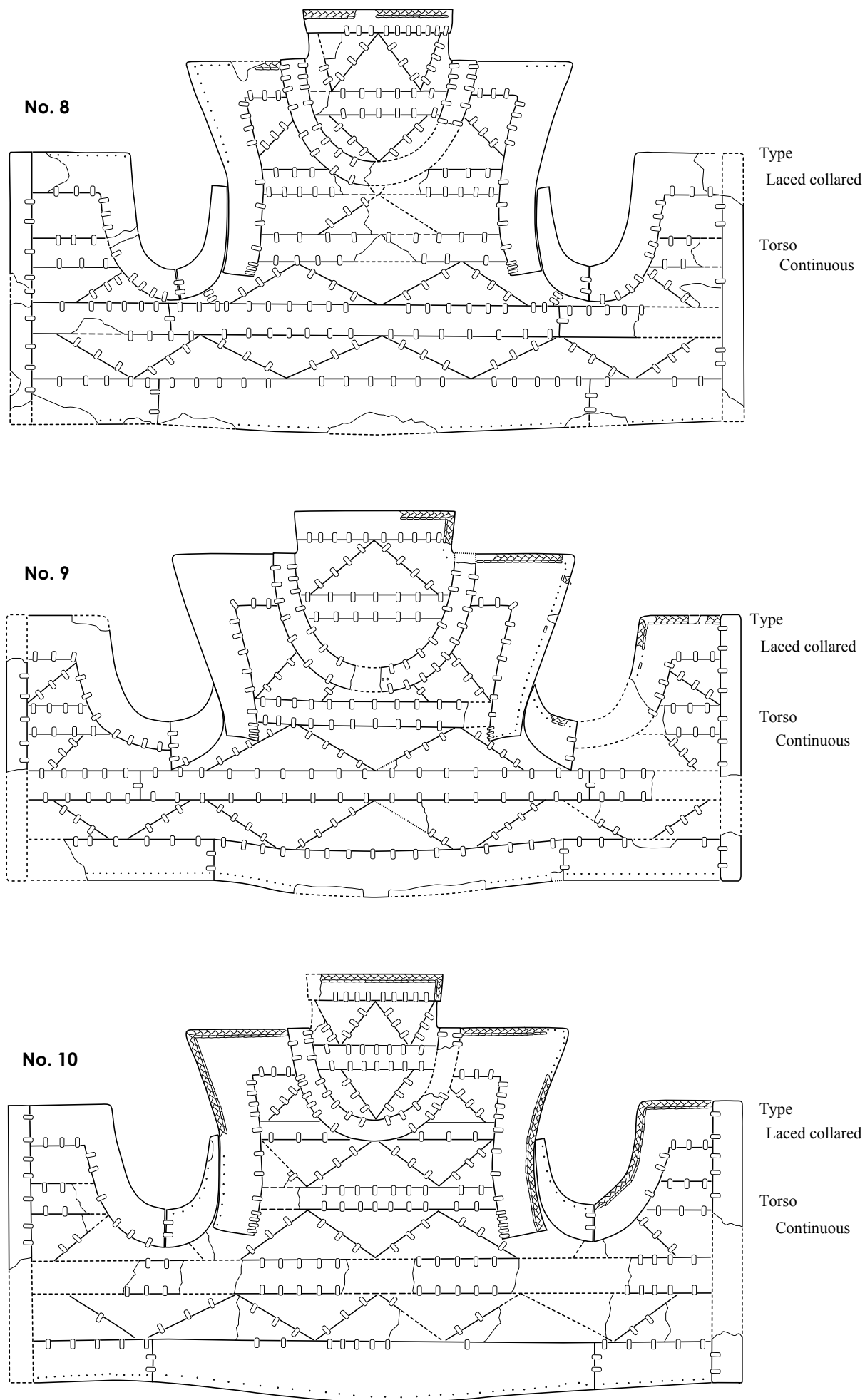


Fig. 3 Expanded diagrams of the laced collared cuirasses

Introduction

The Kofun period witnessed a monumental investment of labor in the construction of mounded tombs (*kofun*). Corresponding roughly to the 5th century, the Middle Kofun period is characterized by the uninterrupted construction of giant round keyhole tombs, most notably in the Furuichi–Mozu Kofun Group; the construction of large *kofun* for select individuals at times involved a workforce of over one thousand people per day. On the other hand, daily life improved tremendously during this period. One example of this considerable change was the introduction and spread of a new ceramic industry: indeed, the appearance of Sue ware, stoneware high-fired in a tunnel kiln, marks an epoch in the history of Japanese ceramics.

It was already known by the beginning of the 20th century that two kinds of pottery were used in the Kofun period: Haji ware, which was the native pottery fired in an oxidizing atmosphere; and Sue ware, which was fired in a reducing atmosphere and originated in the southern Korean peninsula. The significance of the start of Sue ware production, however, could not be satisfactorily elucidated until the development of a chronological framework allowing the detailed analysis of the early phases of its introduction, in addition to the excavation of well-preserved examples. Since the latter half of the 1950s, typochronological research on Sue ware made substantial progress, aided by an increase in archaeological excavations. The 1964 excavation of Nonaka Kofun, which attracted scholarly attention for the discovery of stoneware imported from the peninsula and early Sue ware displaying strong peninsular characteristics, provided invaluable material for the investigation of the start of Sue-ware production.

In this paper, I will introduce the pottery excavated from Nonaka, discuss its significance, and situate it within our present understanding. It must be made clear, however, that only a small amount of the total 8,800 pottery fragments can be introduced in this paper.

1 Overview of the pottery excavated from Nonaka Kofun

Naming conventions The pottery from Nonaka comprises Haji ware native to the Japanese archipelago, stoneware brought from the Korean peninsula, and Sue ware produced in the Japanese archipelago using technology originating on the peninsula.

The terms stoneware and Sue ware are differentiated based on place of production, with the former used for imports from the Korean peninsula and the latter for domestically fired pottery (Sadamori, 1994). However, early

Sue ware includes examples made by immigrant craftsmen from the southern Korean peninsula, making it difficult to identify the place of production based solely on an analysis of shape or techniques. For this reason, in cases where it is difficult to distinguish between imported stoneware and native early Sue ware, I collectively referred to them as “stoneware/early Sue ware”. Additionally, early Sue ware refers to pottery belonging to types TG232, ON231, TK73, and TK216, and stage ON46, each of which was named after the kiln in the Suemura kiln group in Osaka from which the representative pottery was unearthed; TG, TK, and ON are acronyms of the Toga, Takakura, and Ōnoike districts, respectively (Okabe, ed. 1995; Ueno, 2002; Tanaka, 2002). Early Sue ware developed from type TG232 through type ON46 and the TG232 phase refers to the period in which type TG232 Sue ware was produced. Additionally, in this paper, the TK73 phase is divided into two stages, with the ON231 phase composing the former stage and the latter stage situated as the TK73 phase, proper (Tanaka, 2002).

Location of the excavated pottery The number of pottery and pottery sherds excavated from Nonaka amounted to approximately 8,800 pieces in total (Kitano, 1976). They were found from two locations: the top of the mound and row no. 2.

The pottery found from the top of the mound comprised approximately 6,800 fragments of stoneware/early Sue ware and around 2,000 fragments of Haji ware. The pottery had been placed above the location of row nos. 1 through 4 as offerings, and was found together with talc imitation objects, cylindrical *haniwa* with flared mouths, and the enclosure-shaped, sunshade-shaped, armor-shaped, quiver-shaped, and cylindrical *haniwa*. Judging by the nature of their discovery, it is believed that the pottery was originally used together with the *haniwa* and various talc imitation objects in the rituals conducted atop the mound.

The seven pieces of pottery found from row no. 2 comprised miniature lidded jars with handles, which were buried separately from the pottery placed atop the mound as offerings. According to the site report, it is believed that the pottery had originally been placed with the substantial amount of iron arrowheads atop the wooden boxes of the burial facility, but had fallen inside as the wood decayed (Kitano, 1976).

2 Types of pottery and their genealogy

Pottery composition and their use in ritual The types of pottery excavated from Nonaka are summarized in Table 1 (Kitano, 1976).

The stoneware/Sue ware found atop the mound mainly comprised small- to medium-sized storage jars and

accompanying pedestaled dish-shaped pottery stands. The pottery originally reported as brimmed pottery is presumed to be part of a large footed jar with a lid and handle. This indicates that there may have originally been several of such footed jars aside from the one completely restored example. It is extremely difficult to reconstruct the form of the jars with reverted rims as many of the rims and bodies are fragments, but it is believed that most of them were small examples around 20 centimeters in height. Numerous fragments with parallel paddling stamps on their surface and others with shallow incisions of stacked wave (*seigaiha*) patterns can be found.

On the other hand, the majority of the Haji ware comprised lidded pedestaled dishes, which were mainly used for offerings⁽¹⁾. 57 pedestal fragments have been identified and it is possible to identify the existence of at least 30 individual dishes. As for lids, 40 knobs were identified. All the lidded pedestaled dishes are of small size, with a volume of around 100 milliliters. Additionally, dishes and pots were also found, but they are few in number.

From the eight fragments of Haji-ware jars with composite rims, the existence of at least two jars can be identified from differences in the clay used. The same type of rim is found within the Sue ware; as no fragments of Haji-ware pottery stands were uncovered, it is likely that the Haji-ware jars were placed atop the Sue-ware pedestaled dish-shaped pottery stands, the same as the Sue-ware jars.

In a similar vein, it is suggestive that the ritual server (*hasō*), while originally a type of high-fired Sue ware, was fired in the same way as typical Haji earthenware. Following the spread of Sue-ware ritual servers, this type of pottery began to be copied throughout the archipelago in Haji-ware iterations and is a rare example of pottery made in both Sue and Haji ware⁽²⁾.

In the following pages, let us examine the characteristics of the main types of Sue and Haji ware discovered from Nonaka, discuss similar examples found elsewhere, and consider their genealogy.

Miniature stoneware lids The miniature lids found together with the miniature jars were not originally paired and the pottery found does not form a complete set (Kitano, 1976). The flatter lid (Fig. 1:1) has a comb pointed pattern, while one of the dome-shaped examples (Fig. 1:2) has an incised star-like pattern and the other (Fig. 1:3) has a wave pattern.

The most significant features of these lids are that the ridge located between the rim and body is not prominent and that the height of the rim is short in comparison with the total height. Lids with similar features can be found from tombs throughout Haman to Gimhae and Dongnae on the Korean peninsula, which is believed to be the birthplace of this type of lid: for example, Dohang-ri no. 3 and Dohang-ri (*mun*) nos. 21 and 23 in Haman; Ogok-ri no. 8 in Changwon; Bokcheon-dong nos. 39 and 53 in Dongnae; and

Table 1 Composition of pottery excavated from Nonaka Kofun

Stoneware and early Sue ware

Form	Amount	Form	Amount
Miniature lid	3	Miniature jar with handle	3
Pedestaled dish	1+	Jar with stand	1+ (8 frags.)
Large lid	4	Jar with flaring rim	19
Pottery stand or base of pedestaled dish	26+	Jar with composite rim	5+

Haji ware

Form	Amount	Form	Amount
Lid	40	Jar with composite rim	1+ (8 frags.)
Pedestaled dish with lid	57+	Ritual server	1
Dish	1+	Pot	6 frags.

Chilsan-dong no. 33 in Gimhae (see Figure 2). The comb pointed pattern is also characteristically found on lids unearthed from this region. Within the Japanese archipelago, sites revealing similar examples include Asobizuka Kofun in Gifu, the Nangō site group in Nara, the Nagahara site in Osaka, the ON231 Kiln, and the Narukami site group in Wakayama Prefecture; many of these examples display the comb pointed pattern. While many such lids are also found from the major Sue-ware production center of Suemura, as time progressed, decoration changed from comb pointed to unpatterned. It is apparent that lids with wave or star-like patterns, such as those found from Nonaka, are uncommon both in the Japanese archipelago and on the Korean peninsula. A star-like pattern drawn in a similar fashion to that of Nonaka was found on the spindle whorl excavated from Sumiyoshi-miyamachi tomb no. 1 in Kobe City; this similarity merits future investigation.

Miniature stoneware jars with handles There are four miniature jars with handles: one with a wave pattern on its spherical body (Fig. 1:4) and three with diagonal lattice patterns (Fig. 1:5–7). The handles of jars 6 and 7 are broken and, considering the nature of their excavation, are believed to have already been broken at the time of burial (Kitano, 1976).

Similar examples of pedestaled jars with handles, including larger jars, have also been found in the southeastern Korean peninsula (Shintani, 1993; Cho, 2010). According to the classification by Cho Yeongje, who categorized them according to handle shape, pattern on the body, and pedestal decoration, those examples with a diagonal-lattice or comb-pointed pattern on the body and perforated windows on the pedestal correspond to type IA. The miniature jars from Nonaka fall into this type, and similar examples of larger jars have been found from Bokcheon-dong no. 39 in Dongnae, Ogok-ri no. 8 in Changwon, Okseong-ri *ga* no. 35 in Pohang, and the associated artifacts of Imdang G6 in Gyeongsan. Although many of the miniature jars from the Korean peninsula are

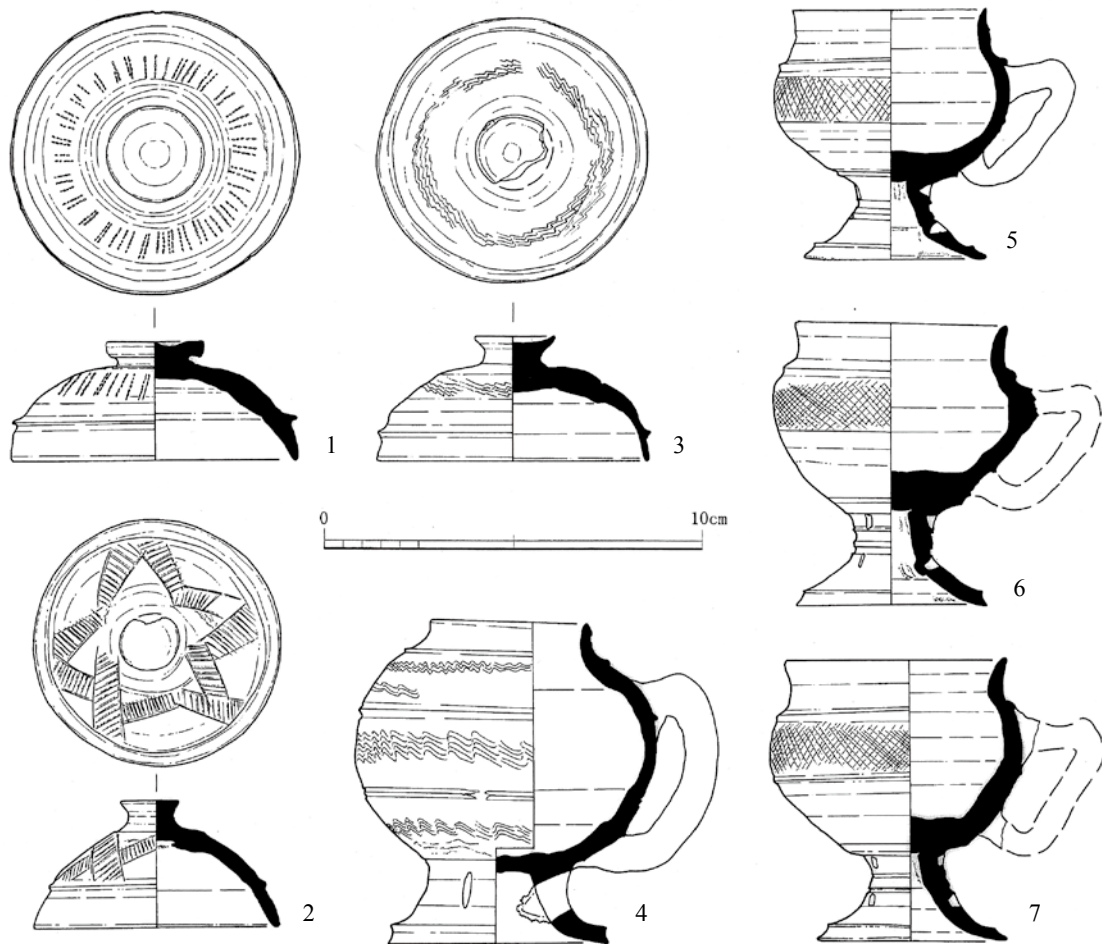


Fig. 1 Small jars with handles and lids excavated from Nonaka Kofun

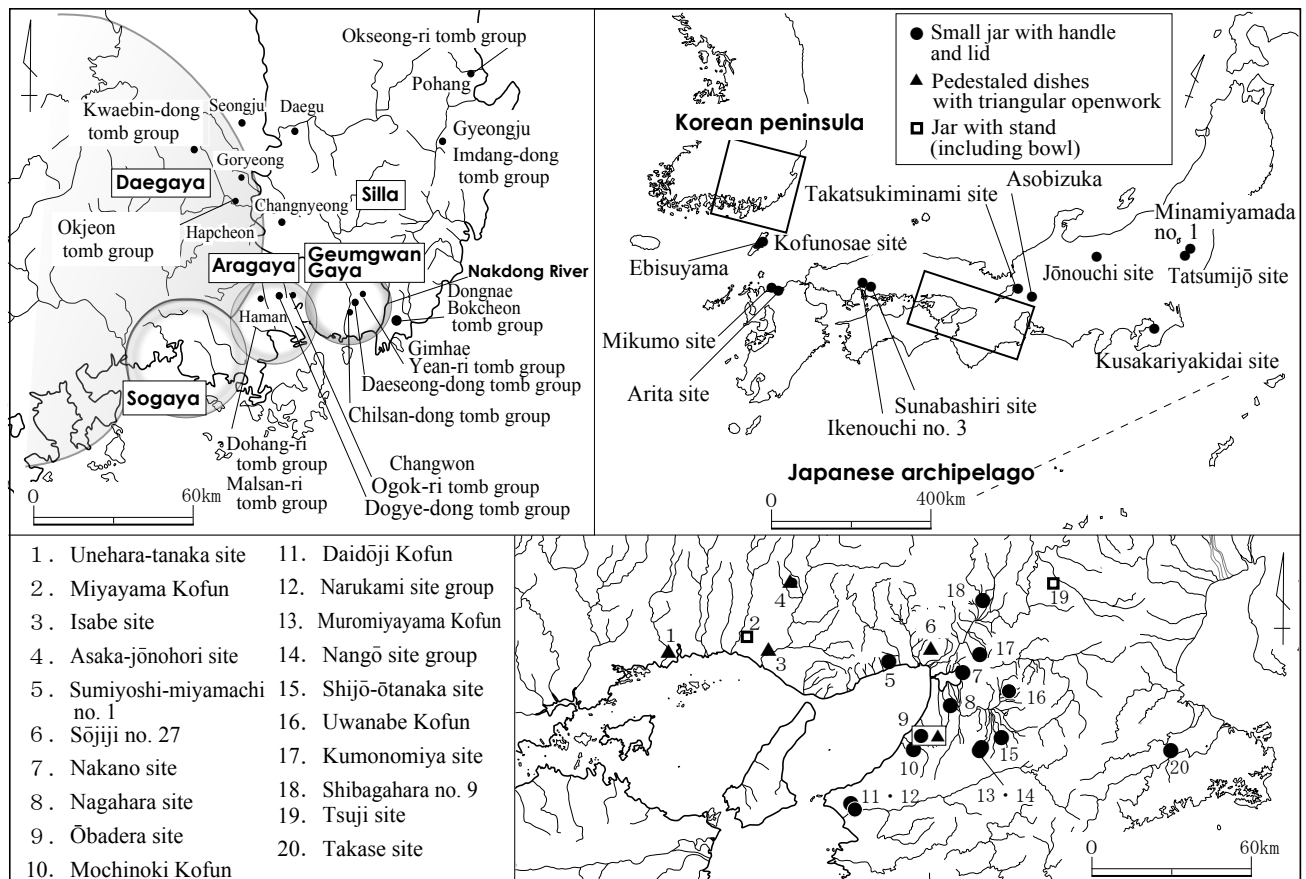


Fig. 2 Distribution of small jars with handles and lids, pedestaled dishes with triangular openwork, and jars with stands

unpatterned, jars of a similar shape have been found from Yean-ri no. 133 in Gimhae and Dogye-dong no. 36 in Changwon; and examples with a diagonal lattice pattern have been found from Bokcheon-dong no. 52 in Dongnae.

On the other hand, it is difficult to find examples similar to the wave-patterned jar 4, even among larger examples, in either the Japanese archipelago or the Korean peninsula. The wave pattern appeared later than both the diagonal lattice and comb pointed patterns and is often found on the bodies of jars that have taken on a more

spherical shape (Cho, 2010); examples from the southeastern Korean peninsula present various morphological differences from the Nonaka jar: those from the west (Gimhae, Haman) and east (Dongnae) of the lower reaches of the Nakdong River have square windows on their pedestals; and those on the west side of the upper reaches of the river (Hapcheon, Goryeong) have square or triangular windows and curled handles. The jar from Bokcheon-dong no. 22 is most similar in shape to that of Nonaka, but the pedestal is taller and the ratio of the body is smaller, suggesting that it is

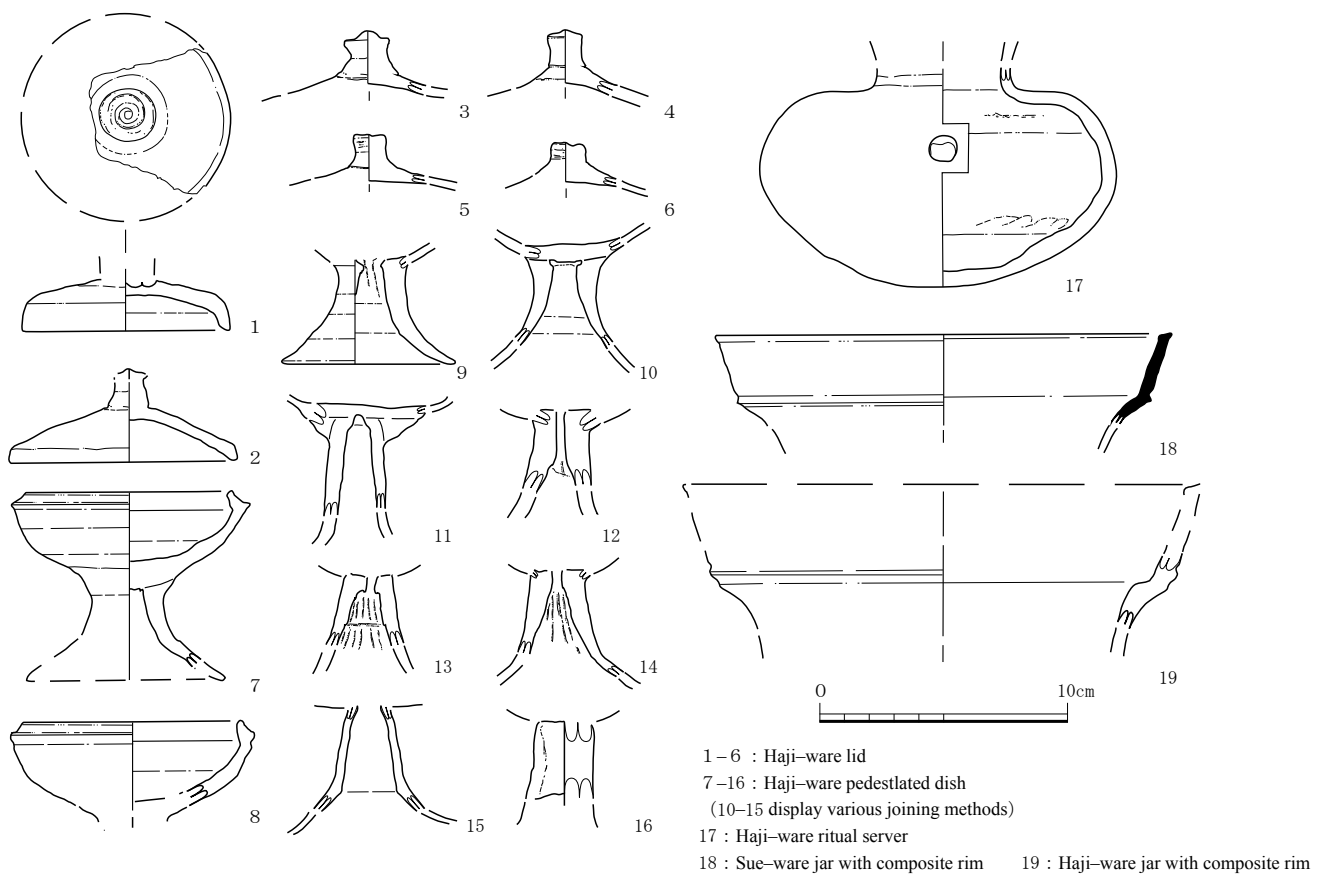


Fig. 3 Pedestaled dishes with lids, ritual server, and jars with composite rims excavated from Nonaka Kofun

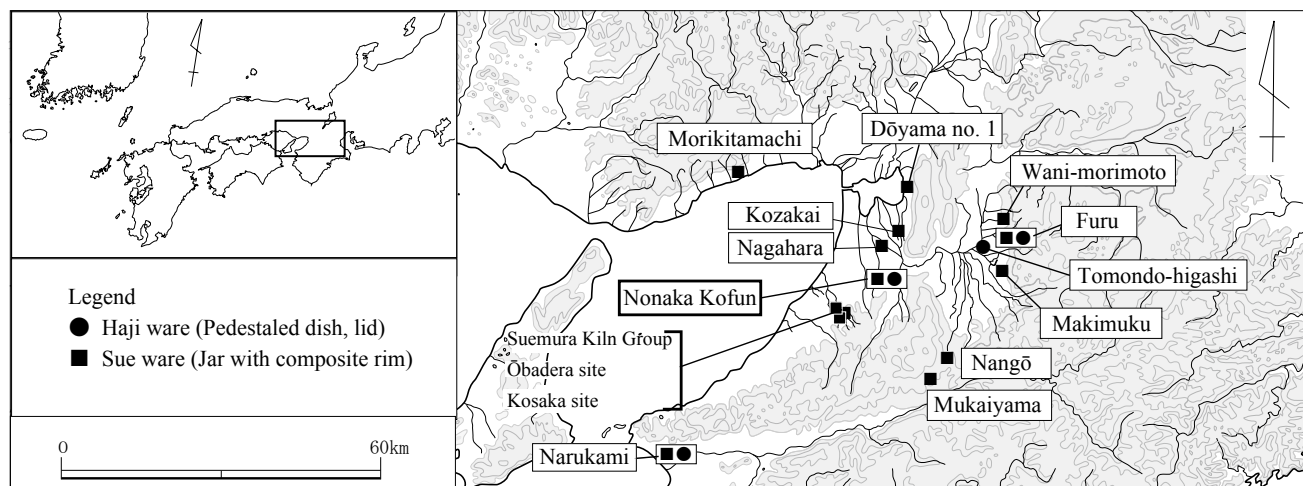


Fig. 4 . Distribution of sites yielding pedestaled dishes with lids and jars with composite rims

typologically older. Within the Japanese archipelago, 13 large and seven small jars with handles have been excavated (Fig. 2).

Stoneware/Sue-ware pedestaled jars The completely restored pedestaled jar (height: 22.0 centimeters) has two-tiered triangular openwork in a zigzag pattern across its skirt-like pedestal. It is characterized by the three rows of ridges running immediately under the triangular openwork. While similar jars can be found from Daeseong-dong no. 1 in Gimhae and Dohang-ri (*mun*) no. 36 in Haman, there are also significant differences. The stepped ridges on the lower part of the pedestal are similar to those of an example from Kwaebin-dong no. 7 in Goryeong, but differences can be seen in the upper section. Within the Japanese archipelago, while there are pedestaled bowls with everted rims, such as at Ōbadera site 1-OL in Osaka, Miyayama Kofun burial facility no. 3 in Hyogo, and the Tsuji site in Shiga, there are no examples of similar pedestaled jars without handles. Therefore, it is difficult to find any examples, in either the Japanese archipelago or Korean peninsula, that perfectly match the pedestaled jar of Nonaka.

Stoneware/Sue-ware pedestaled dish A pedestal with triangular openwork for a dish (without a lid) was uncovered from the top of the mound. With a pedestal diameter of 10.6 centimeters, the dish would have been relatively small; the pedestal shaft is nearly upright, but widens as it approaches the base. Convex bands surround the middle and edge of the base. Pedestaled dishes with triangular openwork are characteristic of the Sogaya area (Kim, 2010), and an example has also been found from Sōjiji no. 27 in Osaka.

Haji-ware pedestaled dishes and lids The shape of the pedestaled dishes in the Kinki region during the Middle Kofun period was fundamentally different between Sue ware and Haji ware. The Haji-ware examples found from Nonaka, however, are strikingly similar to Sue-ware examples in that they (1) have a lid and (2) an inward slanting rim that forms a face to receive the lid. On the other hand, the lack of openwork, windows, or ridges, and the skirt-like pedestal present significant points of departure from Sue-ware examples. These are therefore peculiar examples of pedestaled dishes that are uncommon to both Haji and Sue ware (Fig. 3). It is also difficult to find similar examples on the Korean peninsula. While similarities can be found with the earthenware lidded cups from tombs in the Goryeong and Hapcheon areas (e.g., the Okjeon and Kwaebin-dong tomb groups), the lack of pedestals makes it difficult to identify a direct relationship between them. At this stage, I would like to consider them as a special type of offering ware. Similar examples have been found from the Furu and Tomondo-higashi sites in Nara and the Narukami site group in Wakayama; while only lids were found from the latter two sites, they were found paired with their respective pedestaled dishes at the former site (see Figure 4).

Two methods can be detected in the joining of the dish to its pedestal. The first is to join them after making each separately, which is a technique commonly seen in stoneware and Sue ware; 20 fragments displaying this method were excavated. The second is to continuously coil the clay upward to make both the pedestal and the dish together, which is the technique used for Haji ware. The latter can be further classified into at least three types: 15 fragments have shaft impressions on the connecting area (Fig. 3:11); one fragment is of a solid pedestal; and 17 fragments have clear constriction marks inside the pedestal (Fig. 3:9, 13–14). Additionally, there are five fragments in which the connecting method cannot be identified. Among the knobs, there are some with concentric impressions on their base, made to strengthen their fit with the lid. Those knobs with concentric impressions are onion-shaped (Fig. 3:2–4) and this method originated in stoneware. This suggests that among the craftsmen involved in the production of lidded pedestaled dishes, there were craftsmen hailing from both stoneware/Sue-ware and Haji-ware backgrounds.

Haji-ware ritual server While the rim no longer remains, the body of the Haji-ware ritual server (*hasō*) is in relatively good condition (Fig. 3). The body is onion-shaped, with a slightly tapering bottom. As the early Sue-ware ritual servers of the Japanese archipelago changed from a round bottom to a more pointed bottom, the Haji-ware example from Nonaka can be dated to the period when the latter developed, which corresponds to the TK216 phase of the Sue-ware typochronology. On the Korean peninsula, this type of pottery can also be seen mainly in the southwestern region.

During this period, the Sue-ware ritual servers spread across most of the Japanese archipelago, from the Nakahan'nyū site in Iwate to the Minami-surigahama site in Kagoshima. Imitations were made in each region using local production techniques. Similarly, while the example from Nonaka can be regarded as one of these imitations, it is also unique in that it was used for ritual atop the tomb mound.

Haji- and Sue-ware jars with composite rims Jars with composite rims can be traced back to the Yayoi-period earthenware pottery of the San'in region, and their shape was eventually incorporated into early Sue ware. Examples are found mainly in the Kinki region: for example, from the TG232, TG231, Nigoriike, ON231, and TK85 kilns of Suemura; the Nagahara site and Dōyama no. 1 in Osaka; the Morikitamachi site in Hyogo; and the Furu, Makimuku, Nangō (Gokurakuji-hibiki), Wani-morimoto, and Mukaiyama sites in Nara (Figs. 3 and 4).

While Haji-ware pedestaled dishes with lids and jars with composite rims are special types of pottery, it is suggestive that, within the Kinki region, they are mostly found from settlement sites associated with powerful ruling families.

3 Pottery stands: Characteristics and patterns

Size and shape It is difficult to reconstruct the original shape of the pottery stands found from Nonaka, as many of them only remain as small fragments. From the limited usable fragments, it is possible to reconstruct the average size of the pottery stands to 30 centimeters in rim diameter, 24 centimeters in base diameter, and 10 centimeters in diameter where the stand joins the receptacle; there is also an example that can be reconstructed to a height of 24.5 centimeters. As typical stoneware and Sue-ware pottery stands measure 40 centimeters in rim diameter, 32 to 36 centimeters in base diameter, and 15 to 18 centimeters in diameter at the middle (Morimoto, 2010), the pottery stands from Nonaka can be categorized as small to medium in size, which is uncommon in both the Japanese archipelago and the Korean peninsula. The same can also be said for the size of the pots.

Turning to the openwork, both square and triangular windows can be confirmed, with the latter making up the

majority (Kitano, 1976). A particularly characteristic pottery stand is a small example with a base diameter of 17 centimeters and square openwork in a staggered alignment on the foot. While this type can be traced back to the southeastern Korean peninsula, the example from Nonaka has a greater number of windows than those from the peninsula, making it difficult to identify the area of production.

Types of patterns Six patterns can be found on the pottery stands of Nonaka: wave, sawtooth, diagonal lattice, braid cord, comb pointed, and round pipe (Fig. 5). The wave, braid cord, and comb pointed patterns were applied using a tool with a comb-like tip; the sawtooth and diagonal lattice patterns were applied with a spatula-like tool with a sharp tip. There are no arcing patterns made with a compass-like tool. The wave pattern (1,863 fragments) comprises the majority of patterns, followed by the sawtooth (86 fragments), braid cord (74 fragments), and diagonal lattice (24 fragments) patterns. Fragments with any of the latter three patterns also have the wave pattern (Kitano, 1976). Additionally, the round pipe pattern is believed to have only

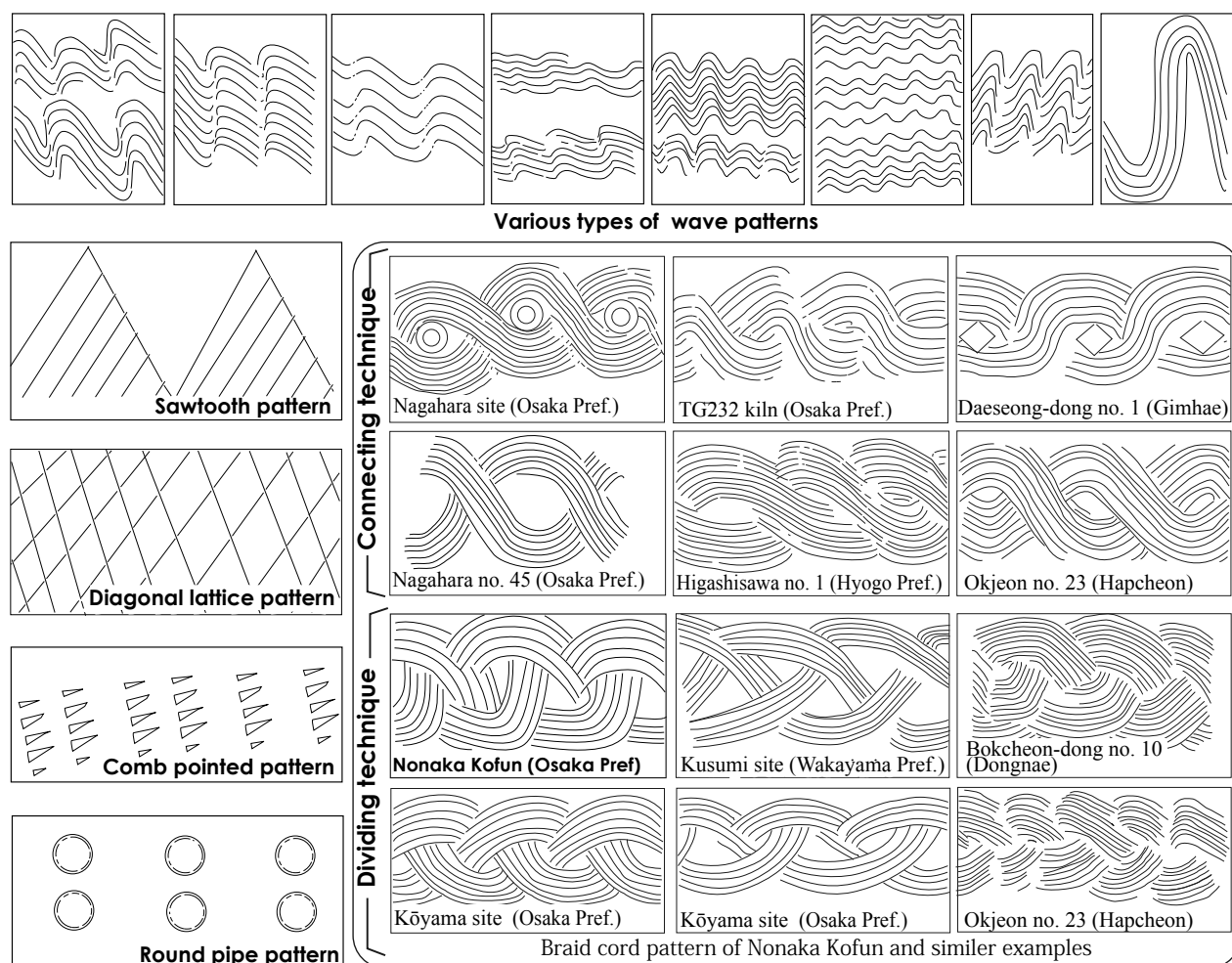


Fig. 5. Patterns found on the stoneware/early Sue ware excavated from Nonaka Kofun (not to scale)

been applied to one piece of pottery: a single pedestaled dish-shaped pottery stand was reconstructed with only this pattern; considering that only five fragments could be found, it is likely that this was the only example. The following section introduces the details of each pattern.

Wave pattern This pattern originated in stoneware and later became the most common pattern for Sue ware. The wave pattern was generally applied atop the potter's wheel by moving a comb-like tool up and down along the surface of the rotating pottery. Within early Sue ware, however, there are examples that did not use a potter's wheel for the application of the wave pattern. Generally speaking, the wave pattern evolved from left-sloping to right-sloping waves: The left-sloping waves did not rely on a spinning wheel, but rather were applied carefully by hand; meanwhile, right-sloping waves were applied atop a spinning wheel and represented a labor-saving development. As for the examples from Nonaka Kofun, the wave patterns include those with a centered peak, as well as right-sloping waves, in addition to left-sloping ones.

Sawtooth pattern This pattern was applied by forming a triangle with two lines using a sharp spatula-like tool, and then filling it in with straight and diagonal lines. The patterns found on the Nonaka examples were made by drawing diagonal lines from the upper left to the lower right and then drawing diagonal lines across these initial lines.

The sawtooth pattern was categorized into seven types by Sekigawa Hisayoshi (Sekigawa, 1984). According to his classification, the examples from Nonaka can be classified as Type IB, in which the triangles are filled with diagonal lines slanting down to the left, and Type II, in which not only the interior of the triangles but the whole pattern band is filled with diagonal lines. Additionally, Type IA, in which the triangles are filled with downward-right-slanting lines, can also be found in the fragments.

Diagonal lattice pattern The diagonal lattice pattern was applied by drawing lines slanting from the upper right to the lower left, followed by lines slanting from the upper left to the lower right across the previous lines. This pattern can be found on pottery stands throughout the southeastern Korean peninsula. Within the Japanese archipelago, while examples can be found in early Sue ware, they are few in number.

Braid cord pattern This pattern was applied using a comb-like tool and can be categorized into three methods: the continuing technique, in which one unit of the pattern stretching from around the crest to the trough of a wave is repeated; the dividing technique, in which the crest and trough are divided by an incoming wave pattern; and the crossing technique, in which wave patterns drawn continuously around the surface of the body cross each other. All the examples of this pattern found from Nonaka belong to the dividing technique. While the crossing technique will not be discussed here, it was used in both the Japanese archipelago and Korean peninsula and existed for

a longer period of time than the other two techniques.

Comb pointed pattern This pattern was applied by pressing a comb-like tool at regular intervals; 46 fragments displaying this pattern have been identified. It is mostly found from the lower area of the dish section of pedestaled dish-shaped pottery stands. The examples from Nonaka were not carefully applied and give a crude impression. A similar example can be found on the pottery stand of Uwanabe Kofun in Nara.

Round pipe pattern This pattern was applied by pressing a tool, most likely a thin bamboo tube, at regular intervals. Throughout both the Japanese archipelago and Korean peninsula, pottery stands displaying only this pattern have only been found at Nonaka. Round pipe patterns applied in combination with other patterns can be seen on the pottery stand of the Kusumi site in Wakayama, the pottery stand fragments of the Sakazu Site in Okayama, and the pottery stand from Higashisawa no. 1 in Hyogo Prefecture, in addition to the ritual server of the Tsukandō site in Fukuoka.

While a high commonality can be observed between the pottery-stand fragments from Nonaka and the stoneware of the southeastern Korean peninsula, it is apparent that the former displays patterns that did not exist or were uncommon in the latter (certain sawtooth patterns and the sole use of the round pipe pattern). In the following section, let us consider the construction period of Nonaka and then return to the issue of the production of this unique pottery.

4 The date and genealogy of Nonaka's pottery

Issues surrounding the dating of pottery In order to discuss the date of the pottery from Nonaka Kofun, let us first review the current state of typochronological research on Sue-ware production. Early Sue ware is traditionally considered to have evolved from examples highly resembling peninsular stoneware to styles unique to the Japanese archipelago through a process of standardization (Tanabe, 1981; Okado ed., 1995; Tanaka, 2002; Ueno, 2002). On the other hand, Sakai Kiyoji suggested the involvement of new craftsmen from the southwestern Korean peninsula during the TK73 to TK216 phases (Sakai, 1994; 2004). Considering that pottery originating in the southwestern peninsula can be found as early as the TG232 and ON231 kilns (Tanaka, 2002), however, it would be more appropriate to assume that craftsmen were invited from various regions across the southern Korean peninsula and that Sue ware subsequently emerged against this complicated backdrop.

To what Sue-ware phase, then, can the pottery of Nonaka be assigned? To begin, some may assume that the miniature jars with handles and lids, pedestaled dishes with triangular openwork, pedestals with staggered array openwork belonging to pottery stands, and the diagonal lattice and braid cord patterns belong to the TG232 phase (i.e.,

stoneware or the earliest Sue-ware phase). However, miniature handled jars with diagonal lattice patterns are considered to mainly correspond to the TG232 to TK73 phases, or to the period stretching from around the turn of the 5th century to around the second quarter of the 5th century. It is likely that examples with wave patterns appeared around the same time or slightly later. Additionally, while pedestaled dishes with triangular openwork have traditionally been assigned to the TG232 phase, the example found from Sōjiji no. 27 suggests that their production continued through the TK73 phase, necessitating a broader chronological framework.

Turning to decorative patterns, it is significant that the pottery from Nonaka contains wave patterns with right-slanting waves. At the Suemura kiln, left-slanting waves were standard through the latter stage of the TK73 phase, with right-slanting waves becoming prominent in the following TK216 phase. The examples from Nonaka can therefore be positioned during this transitional phase.

Next, let us consider the braid cord pattern. It is likely that the change from the connecting to the dividing technique occurred simultaneously in both the Korean peninsula and the Japanese archipelago. In the Japanese archipelago, examples of braid cord patterns using the connecting technique have been found from the TG232 kiln, Ichisuka kiln no. 2, the Nagahara site, Nagahara no. 45, the Nangō site, the Dōden site in Shiga, and the Nagase-takahama site, which can be dated from the TG232 phase to the older stage of the TK73 phase. On the other hand, examples of the dividing technique can be found from the Okugatani kiln, the Kusumi site, and the Kōyama site in Okayama, and the Nakamachi-nishi site in Nara, which can be dated from the latter stage of the TK73 phase to the TK216 phase based on the accompanying pottery⁽³⁾. On the Korean peninsula, the dividing technique can be first seen on pottery from Bokcheon-dong nos. 10 and 11, Bokcheon-dong no. 53, tomb no. 1 of Bokcheon-dong Haksode tomb area 1, and Okjeon no. 23. Based on the parallel chronological relationship between the Korean peninsula and the Japanese archipelago (Shirai, 2003), it can be argued that the dividing technique appeared during the TK73 phase. At Okjeon no. 23, both the connecting and dividing techniques were found together, suggesting that the tomb can be situated at a transitional phase. It is likely that the examples from Bokcheon-dong no. 53 came after that of Bokcheon-dong nos. 10 and 11; therefore, the pattern might best be situated across a broader range of phases.

Additionally, the connecting technique was found on two examples from Nagahara no. 45, which yielded quality examples of early Sue ware dating to the latter stage of the TK73 phase. On the other hand, the examples from Nonaka use only patterns made by the dividing technique, suggesting that the Nonaka examples likely came after those from Nagahara no. 45. Although it may be reasonable to assume

that the diagonal lattice pattern corresponds to the TG232 phase, when considering the situation within the Japanese archipelago, the pattern was used for a relatively longer period on the Korean peninsula. Additionally, the Nonaka examples have wider lattice widths, suggesting that they were made after the TG232 phase. Turning to the sawtooth pattern, the Nonaka examples can be narrowed down to the TK73 to TK216 phases. The fact that the Sue-ware jars have parallel paddling, rather than lattice- or cord-marked paddling, supports this assertion.

Lastly, let us consider the date of the Haji ware. Assuming that the shape of the body of the Haji-ware ritual server corresponds with the shape of Sue-ware examples, it can be dated to the TK216 phase. Additionally, while only few examples exist, the pedestaled dishes with lids can be dated to the TK216 to TK208 phases, based on accompanying pottery.

Based on the above, although we must consider the possibility of heirloom items or repeated production over several instances, it is not necessary to restrict the Nonaka pottery to the TG232 phase. Including the stoneware examples, the pottery from Nonaka can be situated in the latter stage of the TK73 phase to the TK216 phase. I therefore consider the miniature jars with handles and lids, pedestaled dishes with triangular openwork, and the feet of pottery stands with staggered array openwork to display older characteristics, while some of the stoneware/early Sue-ware pots and pottery stands and Haji ware display characteristics closer to the TK216 phase.

Genealogical issues The Korean peninsula is characterized by significant regional differences in stoneware, as well as the fact that pottery was placed as offerings within the burial facilities of tombs. Tracing the genealogy of the pottery from Nonaka Kofun provides clues helpful in considering the various relations with the elite from across the Korean peninsula.

The analysis conducted above revealed that the pottery from Nonaka (1) has numerous similar examples in the Nakdong River Basin in the southeastern Korean peninsula, while still (2) having pottery unique to the Japanese archipelago. In this section, I would like to consider whether the stoneware was acquired from a single source and how the pottery unique to the archipelago was produced.

First, as the genealogy of the pottery excavated from Nonaka can be traced to various areas in the Nakdong River Basin, it is unlikely that the stoneware was acquired from a single source. It has become clear, however, that tombs such as those of the Bokcheon-dong tomb group in Dongnae were equipped with pottery from all over the southeastern Korean peninsula, raising the possibility that the groups involved in their construction were also responsible for providing the stoneware that was buried at Nonaka. Having said that, however, the Silla-style pedestaled dishes found commonly in the Bokcheon-dong tomb group were not

found at the roughly contemporary Nonaka Kofun, suggesting that local preferences played heavily into the acceptance of pottery. For this reason, it is difficult to accept the possibility suggested above. Rather, the existence of multiple interaction networks binding the various regions of the Korean peninsula together is worthy of attention (Takata, 2012). It is therefore likely that the individual buried within Nonaka, or the group responsible for its construction, was involved in such multilayered interactions.

Second, in terms of the place of production, while there is some pottery that has a high probability of being peninsular stoneware (such as certain miniature jars with handles and lids), the pedestaled jars, pedestaled dishes with triangular openwork, pots, and pottery stands are difficult to differentiate as either stoneware or early Sue ware. While it may be necessary to analyze the clay of these and other recently discovered examples, considering that some of the pottery is unique to Nonaka and cannot be found either on the peninsula or from the Sue-ware kilns of the archipelago, it is likely that craftsmen from the Korean peninsula, Sue-ware craftsmen from the archipelago, and native Haji-ware craftsmen all participated in a special pottery production system at Nonaka. Even the miniature jars with handles and lids may have been independently produced, as there are no examples decorated with wave or star-shaped patterns found on the peninsula. Therefore, in addition to the imported pottery fired in the kilns of the Nakdong River Basin, it becomes possible to assume that craftsmen from throughout the southeastern Korean peninsula were locally mobilized to produce the pottery on the peninsula, and that peninsular craftsmen were invited to the archipelago, where they worked together with local craftsmen.

It is interesting to note that techniques from both stoneware/early Sue ware and Haji ware can be seen in the production of the Haji-ware pedestaled dishes with lids, implying the existence of craftsmen able to draw from multiple traditions. Additionally, although it has not been emphasized in traditional Sue-ware research, when considering the production of Sue ware as burial offerings, it may be necessary to assume second and third waves of craftsmen hailing from the Nakdong River Basin.

5 Significance of the pottery excavated from Nonaka

In this paper, I discussed several types of stoneware/early Sue ware and Haji ware unearthed from Nonaka. In this section, I would like to summarize these results and consider their significance.

First, the pottery excavated from Nonaka can be traced back to areas throughout the Nakdong River Basin, which likely reflects multilayered and complex interaction networks. Second, I suggested the possibility of special pottery production for the purpose of burial offering at Nonaka, which included the inclusion of new craftsmen

from the southern Korean peninsula.

Assuming the above two points are correct, what kind of image can we paint of the individual buried within or the group responsible for the construction of Nonaka Kofun?

First, against the backdrop of military tensions throughout East Asia, it is not difficult to imagine that relations with the elite throughout the Korean peninsula to secure the importation of iron resources would become essential for the administration of the central government. Additionally, the individual buried in Nonaka may also have had a certain level of influence on the production of new pottery. Considering the mode of intercultural exchange during the 5th century, in which an unprecedented importance was placed on the importation of new technologies through active immigration and emigration, the individual buried within Nonaka Kofun may very well have had a leading role in these activities.

In addition to military power, represented in the numerous weapons and armor, the individual buried in Nonaka may very well have been a key person within the central administration in charge of foreign relations and craft production. It is thus suggestive that the same type of pottery found from the settlement sites of the powerful elites composing the central government was also found from the mound of Nonaka Kofun. This is an important area for future research.

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Notes

- (1) Although the site report (Kitano, 1976) records the discovery of Haji-ware pedestaled dishes both with and without lids, those without lids were not confirmed during this reevaluation.
- (2) Among the pottery categorized in the site report as Type 2 jars with everted rims, there are fragments that may belong to the rim of a Sue-ware ritual server. It is thus necessary to consider the possibility that a Sue-ware example also existed.
- (3) In addition to the above, there are braid cord patterns made from either the connecting or dividing technique found from the Furu and Soga sites in Nara Prefecture and the Izumokokufu substratum site, but a detailed analysis has yet to be conducted. While the Okugatani Kiln has traditionally been assigned to the TG232 phase, a reevaluation is necessary. A pioneering categorization of braid cord patterns was proposed by Sekigawa (Sekigawa, 1984).

References

- Ueno, Kōsō. (2002). TK73 Keishiki no saihyōka: Takatsuki no shōchō wo chūshin ni site (Reevaluation of the TK73 type-phase: with a focus on pedestaled dishes). *Tanabe*

- Shōzō Sensei Koki Kinen Ronbunshū*. Tanabe Sensei Koki Kinen no Kai.
- Okado, Tetsunori (Ed). (1995). *Suemura Ōbadera Iseki* IV. Osaka fu kyōiku iinkai, Osaka fu maizō bunkazai kyōkai.
- Kitano, Kōhei. (1976). *Kawachi Nonaka Kofun no kenkyū* (Research on Nonaka Kofun in Kawachi). Ōsaka daigaku bungakubu kokushi kenkyūshitsu.
- Kim, Gyu-un. (2010). Establishing the concept of ‘Sogaya type pottery’ of the 5th and 6th century. *The Journal of the Korean Archaeological Society*. Vol. 76. The Korean Archaeological Society.
- Sakai, Kiyoji. (1994). Wagakuni ni okeru Sueki seisan no kaishi ni tsuite (On the start of Sue-ware production in the Japanese archipelago). *Kokuritsu Rekishi Minzoku Hakubutsukan Kenkyū Hōkoku*, No. 57.
- Sakai, Kiyoji. (2004). Sueki seisan no hajimari (The start of Sue-ware production). *Kokuritsu Rekishi Minzoku Hakubutsukan Kenkyū Hōkoku*, No. 110.
- Sadamori, Hideo. (1994). Tōshitsu doki kara mita Kinki to Chōsen (The relationship between the Kinki region and the Korean peninsula as seen through stoneware). *Kodai Ōken to Kōryū no Shosō*. Meicho Shuppan.
- Shin, Kyungcheol. (2000). Chronology of Geumgwan-gaya pottery. *Gaya kogohaku nonchong* 3. Center for the development of historical Gaya sites.
- Shirai, Katsuya. (2003). Bagu to tankō ni yoru Nikkan kōsa hen’nen: Nikkan kofun hen’nen no heikō kankei to rekinendai (Japanese-Korean joint chronology of horse trappings and armor: on contemporaneity and absolute dating). *Doyō kōko*, 27:85–114.
- Shintani, Takeo. (1993). Daitzuki Tottetsubo kō (On jars with stands and handles). *Kōkoronshū: Shiomi Hiroshi Sensei Taikan Kinen Ronbunshū*. Shiomi Hiroshi Sensei Taikan Kinen Jigyōkai.
- Sekigawa, Hisayoshi. (1984). Nara kenka shutsudo no shoki sueki (Early Sue ware from Nara Prefecture). *Kashihara Kōkogaku Kenkyūsho kiyō: Kōkogaku ronkō*.
- Takata, Kanta. (2012). Chōsen Sangoku Jidai to Kofun Jidai no setten (The relationship between the Three-Kingdoms Korean peninsula and the Kofun-period Japanese archipelago). *Kikan Kōkogaku*, 117:24–30.
- Tanaka, Kiyomi. (2002). Sueki teikeika e no katei (The process of Sue-ware standardization). *Tanabe Shōzō Sensei koki kinen ronbunshū*. Tanabe Sensei Koki Kinen no Kai.
- Tanabe, Shōzō. (1966). *Suemura Koyōshigun*. Heian Gakuen Kōkogaku Club.
- Tanabe, Shōzō. (1981). *Sueki taisei* (Sue-ware compendium). Kadokawa Shoten.
- Cho, Yeongje. (2010). A study on the mounted small jar with handle and cover. *Hanguk kogohakbo*. Vol. 76. Hanguk Kogohakhoe.
- Park, Cheonsoo. (2010). *Gaya pottery: The history and culture of Gaya*. Chininjin.
- Morimoto, Tōru. (2010). Shoki Sueki Kidai no keifu (The genealogy of Sue-ware pottery stands). *Kenkyū chōsa hōkoku*, No. 7. Ōsaka-fu bunkazai center.

Introduction

At the time of the excavation of Nonaka Kofun, research on *haniwa* had not made as much progress as other areas, such as the study of burial goods. In particular, the pioneering observations of Kitano Kōhei on the representational *haniwa* (Kitano, 1976), who included a lengthy evaluation of the examples uncovered from Nonaka, are particularly noteworthy for the time, as the majority of research on representational *haniwa* had focused on them from an artistic perspective.

Accompanying the considerable increase in *haniwa* since the 1960s, however, research on *haniwa* has become highly diverse, ranging from typo-chronological studies to attempts to reconstruct *haniwa* rituals. The subsequent excavations of Nonaka Kofun by Fujiidera City (Yamada et al (Eds.), 1997, Ueda (Ed.), 1991) revealed the need for a reevaluation of the representational *haniwa* of Nonaka. This chapter thus aims to introduce these representational *haniwa* and discuss their significance.

1 Conditions at the time of Excavation

Let us begin by summarizing the conditions of the *haniwa* at the time of their excavation. The cylindrical *haniwa* were excavated from the base of the mound, where normal cylindrical *haniwa* and *haniwa* with flaring mouths appear to have been arranged in a ratio of three to one, respectively. Slightly separated from this row of cylindrical *haniwa*, an additional cylindrical *haniwa* stood alone on what was presumably the eastern slope of the mound. From inside the *haniwa* were found *haniwa* fragments and, near the base, a long, thin cylindrical *haniwa*. The latter object will be discussed later. While no row of cylindrical *haniwa* was found atop the mound, the discovery of *haniwa* fragments suggests that *haniwa* had likely once stood there.

Representational *haniwa* were also found from atop the mound, with enclosure-shaped *haniwa* found from around the center. Additionally, helmet- and quiver-shaped *haniwa* were found from the southern foot of the mound, but they may have fallen from their original position atop the mound.

2 Overview of the artifacts

The site report of Nonaka Kofun (hereafter referred to as the Kitano Report) was published in 1976. While the representational *haniwa* were covered in detail within the report, there exist unreported *haniwa* fragments. In this section, I will conduct a reevaluation of the representational *haniwa* from Nonaka.

(1) Sunshade-shaped *haniwa*

The Kitano Report states that there were 16 fragments of ornament and canopy sections, and that these all belonged to a single example. A reexamination of the artifacts found during Osaka University's initial excavation revealed 21 fragments in total, five of which are ornament sections and 16 of which are canopy sections. Judging by the width of the incisions seen on the canopy-section fragments, it is likely that there were originally at least two separate examples. The ornament section has incisions on both sides and is decorated with square windows. The top is arc-shaped and the widths of the upper and lower outer fins are narrow. There are numerous examples of similar sunshade-shaped *haniwa*, such as those from Kurohimeyama Kofun, the Hajinosato site, and Kurizuka Kofun in Osaka. Additionally, the bottom part of the ornament section of the example excavated by the Fujiidera City Board of Education remains in good condition.

Turning to the mouth of the sunshade-shaped *haniwa*, the shaft measures 12.8 centimeters in height and the rim diameter measures 17.4 centimeters. Brush marks can be seen on the exterior. Flat clay bands were attached to the edge of the mouth rim and the bottom edge of the neck. The canopy section fragment is from the mid-band to the canopy edge, and the diameter of the canopy is 52 centimeters. An incised line drawn below the mid-band divides the lower area into two halves. While no incisions can be found on the upper half, a set of three vertical incised lines can be found on the bottom half. The canopy edge is surrounded by a flat clay band. Similar canopies have been found from Shimeno Kofun and Heijō Palace SX7800 in Nara, as well as Shōningahira no. 16 in Kyoto. There are no fragments

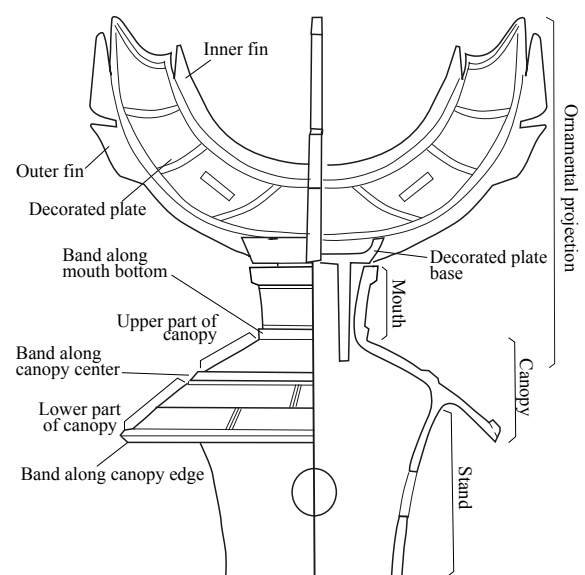
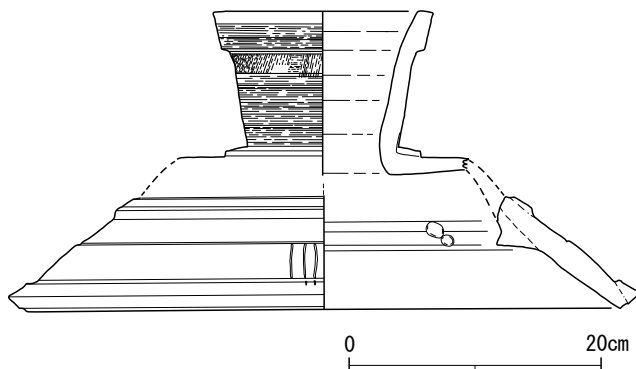


Fig. 1 A reconstruction of a sunshade-shaped *haniwa*

Fig. 2 Sunshade-shaped *haniwa* (scale drawing)

that could be a wall bar and there is no evidence that a possible wall bar had once been attached to the canopy section; therefore, the Nonaka example may have been a type of canopy that was not equipped with one. The canopy and mouth display red coloring that has remained in good condition. While the sunshade-shaped *haniwa* from Nonaka exhibits older characteristics in the design and proportion of its incised canopy section, it also exhibits newer characteristics in the shape of the ornament section, as well as the existence of a clay mid-band around the canopy section.

Additionally, a small cylindrical clay object was found from inside of the only cylindrical *haniwa* found from the east side of the mound. This small artifact is interpreted as a horse leg-shaped *haniwa* in the Kitano Report. However, in light of the fact that it was the only one of its kind found from inside the cylindrical *haniwa* and that its surface was not finished with care, it is likely that this object was actually the axis of a sunshade-shaped *haniwa*⁽¹⁾.

(2) Enclosure-shaped *haniwa*

The Kitano Report includes scale drawings of two fragments. Assuming that the semicircular notch on the lower part of the fragment should be situated at the center of one of the walls, the report suggests that the *haniwa* originally measured approximately 32 centimeters by 23 centimeters, and that it may represent a granary compound (*inaki*: lit., “rice castle”). In addition to the 12 fragments that were originally unearthed by the Osaka University excavation, there are also fragments owned by the Fujiidera City Board of Education. As some fragments have incised lines under the triangular projections atop the enclosure and some do not, it is likely that there were at least two enclosure-shaped *haniwa*.

The best-preserved example found during the Osaka University excavation is a fragment of a corner section measuring 20.7 centimeters in height, which can be found in the Kitano Report. The window is located 12 centimeters from the corner on one side and seven centimeters from the corner on the other. Here, the former will be referred to as

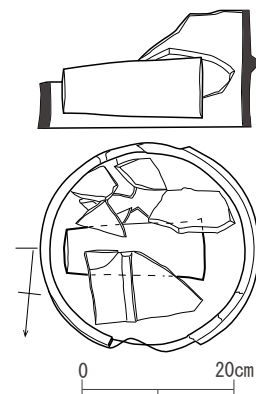
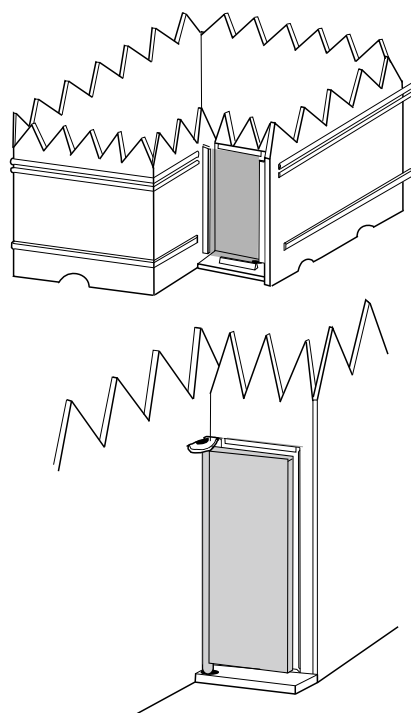
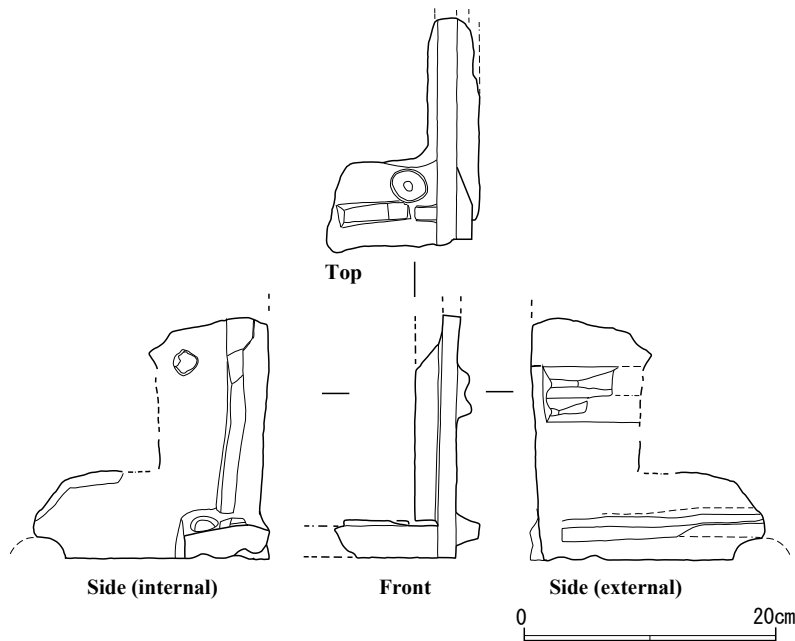
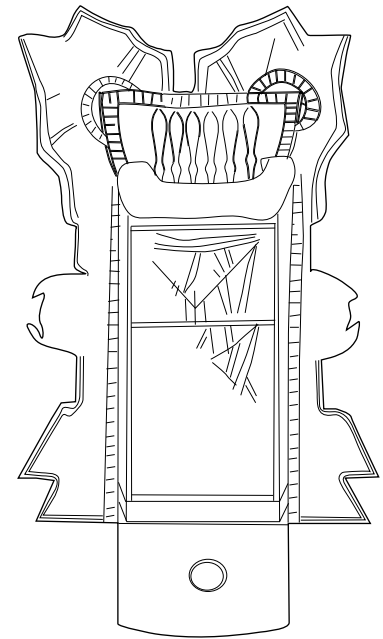


Fig. 3 Excavation condition of the small cylindrical clay object

Side A, and the latter as Side B. Measuring 15 centimeters in width, Side A remains in good condition: it has three triangular projections on top and two long, thin clay bands underneath. There is a semicircular window along the bottom and a clay band above it that projects farther out than the thin double bands at the top of the fragment. A close examination of the window on Side A reveals that it reaches to the bottom of the clay band, suggesting that the window was cut out after the clay band was attached. The window on Side B is also believed to have been opened after the clay band was attached and it appears to have been cut open in a two stroke motion from different directions. While the surfaces of both Sides A and B were carefully finished, a connecting seam between two pieces of clay remains on the inside of Side A.

A reexamination of the fragments revealed that an

Fig. 4 A reconstruction of the enclosure-shaped *haniwa* (below: the reconstructed door interior)

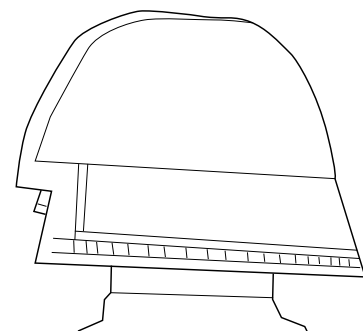
Fig. 5 Enclosure-shaped *haniwa* (scale drawing)Fig. 6 Reconstruction of the quiver-shaped *haniwa*

additional enclosure-shaped *haniwa* mentioned in the Kitano Report joined with unreported fragments. This example measures 20 centimeters in height and 15.4 centimeters in width and corresponds to the entrance of the enclosure. As concluded by Kitano, this fragment has a representation of a doorway. The entranceway is represented by a square window measuring over 15 centimeters in height and over 6 centimeters in width. In the innermost part of the corner is a depression measuring 2.5 centimeters in diameter, which is believed to be the receptacle for a door axle. This suggests that the door was a single inward-swinging type. Corresponding to this indent is a circular detached area on the wall of the doorway. It is likely that this area was once the receptacle for the top half of the axle.

Very few examples of house- or enclosure-shaped *haniwa* have representations of doors. An example of an enclosure-shaped *haniwa* in good condition has been found from Mozu-gobyōyama Kofun in Osaka. There are several examples of house-shaped *haniwa* with door representations: examples with a single removable door with a handle were excavated from Nagahara no. 84 in Osaka and Akabori-chausuyama Kofun in Gunma; examples with inward-swinging doors were found from Dōyama Kofun in Kanagawa and Yamazakiyama in Saitama; and an example with a round depression on the floor inside the door was found from Misono no. 1 in Osaka. From the perspective of door design and structure, the enclosure-shaped *haniwa* from Nonaka is most similar to that of Mozu-gobyōyama Kofun and Misono no. 1.

The enclosure-shaped *haniwa* of Mozu-gobyōyama Kofun has a rectangular opening at the entrance and an indent on the doorsill inside. The door believed to correspond to this

opening has also been found, and the bottom of the door is equipped with a small projection presumably to fit the depression. Meanwhile, while there is one fragment among the various *haniwa* fragments from Nonaka that is believed to form a door, its size does not match that of the door opening, suggesting that it may have belonged to a different enclosure⁽²⁾. Additionally, there is a solid fragment that the Kitano Report refers to as a rod-like *haniwa* fragment. While this rod-like object was reported as the tail of an animal-shaped *haniwa*, due to its relation with the horse leg-shaped *haniwa*, its size corresponds to that of the indentation near the door of the enclosure-shaped *haniwa*. It is therefore likely that this fragment, rather than being a part of an animal-shaped *haniwa*, originally belonged to the door of an enclosure-shaped *haniwa*. As the object is a solitary rod-shaped fragment, however, it is uncertain what kind of door it would have been paired with.

Fig. 7 A reconstruction of the armor-shaped *haniwa*

(3) Quiver-shaped *haniwa*

As recorded in the Kitano Report, only the upper part of the quiver-shaped *haniwa* remains. The front has a board-like design, while part of the cylindrical section remains on the back. S-shaped arrowheads with triangular projections at the base are engraved on the front. While they are not clearly expressed in the Kitano Report, the lines of the points of the arrowheads do not touch and stop several millimeters shy of each other. They can be understood as a rough representation. Below the engraved arrowheads are two clay projections believed to be the remains of a representation of the box holding the arrows, which had become detached and lost. A horizontal ladder-like pattern runs above the arrowheads and slants slightly inward along both sides. Additionally, fanning out from the corners of this design are two additional ladder-pattern bands. This front section is attached to the cylindrical *haniwa* at the rear, with triangular clay wedges inserted for support.

(4) Helmet-shaped *haniwa*

As recorded in the Kitano Report, only the neck plate, measuring five centimeters in height and 10 centimeters in width, remains. Along the bottom of the *haniwa* is an engraved ladder-like pattern. Judging by the marks on the upper half, it is believed that the neck plate, made separately from the main helmet, had become detached. The body of the helmet, itself, has not been found. An incised line can be seen above the horizontal ladder-like pattern, in addition to two vertical lines toward the front. It is unclear whether this helmet-shaped *haniwa* represents a keeled helmet or a visored helmet; nevertheless, as ladder-shaped engravings are mostly found on keeled helmet-shaped *haniwa*, it is likely that Nonaka also belongs to this type.

3 . Conclusion

Let us now consider the chronological position of the representational *haniwa* from Nonaka Kofun and discuss their significance in relation to neighboring tombs.

Debate continues over the detailed construction period of Nonaka, as the relative dating provided by each type of artifact does not necessarily agree. In this section, I will consider the construction period of Nonaka based on its representational *haniwa*. Among the various representational *haniwa*, the sunshade- and quiver-shaped *haniwa* are most suited to the present discussion, as their typochronological framework is well established. The research on sunshade-shaped *haniwa* by Oguri Akihiko (Oguri, 2007) is instructive. As mentioned above, the Nonaka example has a clay band running along the edge of the canopy and a set of three vertically incised lines on the lower half of the canopy. The clay band along the canopy edge is expressed simply with incised lines on the examples from Nonaka-miyayama Kofun and Konda-gobyōyama Kofun, which suggests that

the Nonaka example is typologically older. Additionally, the design and decoration seen on the Nonaka example are often found on examples with a clay band along the canopy edge, suggesting that the relative typochronological position of the Nonaka example agrees with that of other sunshade-shaped *haniwa*. Such features are also seen on the example from Shōningahira no. 16, which is positioned in Stage 2 of Phase IV of the *Haniwa Kentōkai* chronology.

Next, let us look at the quiver-shaped *haniwa*. The arrowheads are drawn on the same plane as the decorated plate, examples of which are said to have increased in the late Middle Kofun period, only to quickly disappear shortly after (Matsugi, 1988). Concerning the shape of the arrowheads, similar engravings of S-shaped arrowheads with triangular projections can be found from Chayama no. 1 in Habikino City. Compared with the examples from Chayama no. 1, however, those of Nonaka are crudely drawn, with tips that do not touch. Next, concerning the position of the arrowheads, those of Chayama no. 1 are engraved on the holding box, suggesting that the quiver-shaped *haniwa* of Chayama no. 1 is older than that of Nonaka, a typochronological positioning that agrees with the assessment of the actual representation of the arrowheads, themselves.

The period of construction of Nonaka Kofun may thus be considered to fall within Stage 2 of Phase IV of the *Haniwa Kentōkai* chronology (Haniwa Kentōkai, 2003). This corresponds to the TK216 phase of the Sue-ware typochronology, or approximately to the middle of the 5th century.

The representational *haniwa* uncovered from Nonaka, including those excavated by the Fujiidera City Board of Education, include sunshade-, enclosure-, helmet-, quiver-, waterfowl-, horse-, and shield-shaped *haniwa*. Although Nonaka Kofun is a mid-sized, square mounded tomb measuring only 37 meters to a side, it was equipped with various types of *haniwa*.

Let us turn to Hakayama Kofun, Mukōhakayama Kofun, Jōganjiyama Kofun, and Nishihakayama Kofun, of the Furuichi Kofun Group, which are all located in close proximity to Nonaka. From Hakayama (length: 225 meters), sunshade-, shield-, helmet-, quiver-, and collared cuirass-shaped *haniwa*, in addition to the face of a shield-holding figure-shaped *haniwa*, were found; from Mukōhakayama (square mounded tomb; length: 62 meters), house-, sunshade-, shield-, and waterfowl-shaped *haniwa* were found; from Jōganjiyama (square mounded tomb; length: 67 meters), several representational *haniwa* were found; and from Nishihakayama (square mounded tomb; length: 20 meters), tassets-, house-, enclosure-, sunshade-, and animal-shaped *haniwa* were found.

While Nonaka and Nishihakayama are smaller square mounded tombs, they were nevertheless equipped with a variety of representational *haniwa* on par with that of the

giant Hakayama Kofun. Additionally, while examples of enclosure-shaped *haniwa* with doorways similar to that of Nonaka are few, the similarity seen with that of Mozu-gobyōyama Kofun suggests that we must consider Nonaka's relationship not only with the Furuichi Kofun Group, but also with the Mozu Kofun Group.

In this paper, I presented an overview of the representational *haniwa* of Nonaka Kofun and assessed their typochronological position. It is clear that these artifacts are instructive in understanding *haniwa* production not only within the Furuichi Kofun Group, but also within the neighboring Mozu Kofun Group, as well.

Notes

- (1) As the base of the small cylindrical clay object contains many sand particles, it is likely that it was made while placed on the ground. Additionally, red coloration can be seen on the artifact. Assuming that it was part of an animal-shaped *haniwa*, it is certainly possible that it was part of a horse leg, as it widens toward the base.
- (2) This board-shaped fragment measures 10.2 centimeters in length and 7.5 centimeters in width. Although it may be the door of a house-shaped *haniwa*, it is difficult to conclude with certainty what the object represents.

References

- Ueda, Mutsumi (Ed.). (1991). *Ishikawa ryūiki iseki gun hakkutsu chōsa hōkoku* (Report on the excavation of sites in the Ishikawa River Basin), VI. Fujiidera-shi kyōiku iinkai.
- Oguri, Akihiko. (2007). Kinugasa gata Haniwa Hen'nen Ron (On the chronology of sunshade-shaped haniwa). *Haniwa Ronkō 1: Entō Haniwa wo Yomitoku. Osaka Ōtani Daigaku Hakubutsukan Hōkokusho* 53, Osaka Ōtani Daigaku Hakubutsukan.
- Kitano, Kōhei. (1976). *Kawachi Nonaka Kofun no kenkyū* (Research on Nonaka Kofun in Kawachi). Ōsaka daigaku bungakubu kokushi kenkyūshitsu.
- Kyoto University Faculty of Letters. (1968). *Kyōto Daigaku Bungakubu Hakubutsukan Kōkogaku Shiryō Mokuroku* (Catalogue of archaeological materials in the Kyoto University Faculty of Letters Museum), Part 2 Nihon Rekishi Jidai.
- Tanabe, Shōzō. (1981). *Sueki taisei* (Sue-ware compendium). Kadokawa Shoten.
- Haniwa Kentōkai. (2003). *Haniwa ronsō* (Research on haniwa), 4.
- Matsugi, Takehiko. (1988). Kinai ni okeru Yukigata Haniwa no Hensen: Haniwa ni Egakareta Yajiri to Jitsubutsu no Yajiri (Chronology of quiver-shaped haniwa in the Kinai region: a comparison of incised arrowhead representations and actual arrowheads). *Machikaneyama Iseki* II. Ōsaka daigaku maizō bunkazai chōsa iinkai.

Yamada, Yukihiro et al (Eds.). (1997). *Nishihakayama Kofun. Fujiidera-shi kyōiku iinkai*.

Illustration references

Fig. 1: drawn by the author; Fig. 2: measured and traced by the author; Fig. 3: Kitano (1976) retraced; Fig. 4: drawn by the author; Fig. 5: measured and traced by the author; Figs. 6 and 7: drawn by the author.

The Identity of Those Buried in the Furuichi–Mozu Kofun Group

Takahashi Teruhiko

Who was buried in the giant mounded tombs and the surrounding smaller tombs within the Furuichi–Mozu Kofun Group? While this is a simple question, the lack of epigraphic evidence provides no simple answers from an archaeological standpoint. Therefore, while it is no doubt necessary to first exhaust those issues that can be addressed archaeologically, this paper will consider the problematic issue of the identity of the interred.

1 Identity of those buried in the large mounded tombs

Let us begin by considering the giant round keyhole tombs of the Furuichi–Mozu Kofun Group. It is not difficult to imagine that the Five Kings of Wa recorded in the Chinese dynastic records were buried therein. It is widely accepted that these Five Kings of Wa coincide with the emperors (great kings) recorded in Japan's oldest extant domestic histories, the *Kojiki* (Record of Ancient Matters, compiled in 712 AD) and *Nihon shoki* (The Chronicles of Japan, compiled in 720 AD), hereafter referred to collectively as “the chronicles”.

From an archaeological standpoint, it is necessary to determine the order of construction of the giant tombs and their absolute dates. It would prove fruitful if this data corresponded with the genealogy of the emperors inferred from the chronicles and the locations of the imperial mausolea recorded in the *Engi shiki* (Procedures of the Engi Era, completed in 927 AD). Unfortunately, however, not all of these tombs neatly align with the written records.

Strictly speaking, there is no guarantee that the royal genealogy of the chronicles or the locations of the imperial mausolea in the *Engi shiki* are accurate. This may lead some to disregard these written sources in their attempts to locate the imperial tombs or to suggest the existence of additional emperors alongside those officially recorded.

In light of the general consistency, however, between the great kings listed in the Chinese Book of Song and the emperors recorded in the domestic Japanese chronicles, in addition to the inscription on an iron sword uncovered from Sakitama-inariyama Kofun believed to refer to the Great King Wakatakeru, the chronicles cannot be completely dismissed. In this paper, the author will focus on whether a reliance on the chronicles will inevitably lead to irreconcilable contradictions.

First, looking at the mounded tombs of the 6th century, when the reliability of the contents of the chronicles increased, it would seem likely that the imperial mausolea were the largest keyhole tombs of the period. If we assume this, however, discrepancies arise between the written record and the extant mounded tombs.

For example, according to the *Engi shiki*, the mausolea for Emperors Nintoku, Richū, and Hanzei are located in the center, south, and north of the Mozu Kofun Group, respectively. If we compare this with the three largest tombs of Mozu (the Daisen-ryō, Kamiishizu-misanzai, and Hazenisanzai tombs) inconsistencies arise concerning the locations, periods, and order of construction. Considering that the mausolea of Empress Jingū and Emperor Seimu became confused in the early Heian period (according to an entry for May 23, 843, in the *Shoku Nihon kōki* [Later Chronicle of Japan Continued]), it is certainly likely that traditions concerning who was buried where could easily be confused between neighboring mounded tombs. Additionally, judging by the fact that the reigns of 5th-century Emperors Richū, Hanzei, and Ankō are recorded as having been short, we must entertain the possibility that kingly tombs decreased in size and that the largest mounded tombs are not necessarily limited to only the emperors recorded in the chronicles. Nevertheless, as there are numerous large mounded tombs in the Mozu Kofun Group, there is no need to deny the possibility that the mausolea of these three sovereigns were built there.

Next, let us consider the location of Ankō's tomb, which is recorded to be in Sugawara-fushimi, Soejimo County, Yamato Province. Taking into account the length of his reign, a candidate tomb would not necessarily need to be particularly giant. It has been suggested that Saki-hishage (hishiage) Kofun, from which *haniwa* similar to those of Ichinoyama Kofun in the Furuichi Kofun Group have been found, is a possible candidate (Ban, 2013). While the location of Saki-hishage is not within Sugawara-fushimi and careful consideration is required when deciding whether to trust traditionally recorded locations, it is noteworthy that the tomb is nevertheless located in Soejimo County.

An additional issue that needs to be addressed is the fact that the number of extant large mounded tombs in the Furuichi and Mozu groups exceeds that of imperial tomb candidates. Looking at the Furuichi Kofun Group, for example, there are around seven giant mounded tombs exceeding approximately 200 meters in length. One such tomb is Hakayama Kofun, which is adjacent to Nonaka Kofun. According to the *Engi shiki*, however, imperial tombs believed to have been built in the Furuichi area are those belonging to Emperors Chūai, Ōjin, Ingyō, and Yūryaku. The giant tombs thus exceed the number of recorded emperors. The identity of those interred in large-scale tombs such as Hakayama must therefore be sought elsewhere than in the list of known emperors.

In order to narrow down the identification of the interred with higher accuracy, it is necessary to consider newer tombs. Turning to an example from the early 7th century, it

is highly likely that Tsukaana Kofun in Habikino City is the tomb of Prince Kume, a younger brother of Prince Umayado (Prince Shōtoku). While it was constructed after the shape of imperial tombs changed to square-shaped mounded tombs, Tsukaana Kofun was nevertheless a large tomb for its time, comparable to Kasuga-mukaiyama Kofun and Yamada-takatsuka Kofun, which are considered the mausolea of Emperor Yōmei and Empress Suiko. Prince Kume was Emperor Yōmei's son, which would have made him Empress Suiko's nephew during her reign; it is therefore highly likely that large mounded tombs were also built for the family members of the emperors.

Keeping the above in mind, the chronicles offer an additional suggestive example. For example, Emperor Ōjin's older brother is referred to as *Homuya-wake-no-mikoto* in the *Kojiki* and *Nihon shoki* (he is recorded as a half-brother in the latter) and Emperor Ōjin is referred to as *Homuda-wake-no-mikoto*. These brothers had very similar names and are believed to have had a close relationship. It is surely within reason to assume that Emperor Ōjin's older brother may be buried in a giant tomb within the Furuichi Kofun Group near Emperor Ōjin's tomb. Family members of the emperors are therefore candidates for those buried in the other giant tombs.

There are, of course, continuing debates over the historicity of Emperors Chūai and Ōjin; if we cannot accept the chronicles at face value, textual criticism from an archaeological perspective is necessary. While emperors not recorded in the chronicles may have existed, particularly during the chaotic times surrounding Empress Jingū's reign, it is nevertheless possible to understand the identity of those buried in the large mounded tombs without contradiction by allowing for the burial not only of the emperors, but also of their family members and consorts listed in the chronicles.

2 Identity of those buried in smaller mounded tombs

Next, let us consider the nature of those buried in the small- to medium-sized mounded tombs located around the larger *kofun* in the Furuichi–Mozu Kofun Group.

For example, debate continues over whether a human interment was conducted at Nonaka Kofun. In either case, while this issue must be examined in detail, it is apparent that Nonaka was not constructed in conjunction with the adjacent, large-scale Hakayama Kofun, as it dates to after the latter's period of construction.

If we adopt Kitano Kōhei's view that a human interment was conducted at Nonaka, it would then be characterized as a satellite tomb of the large-scale Hakayama. Proponents of this view often consider the individual assumed to be buried therein as a member of the proto-bureaucracy.

Referring to an example from the 7th century, it is recorded that Princess Ōta, who was the daughter of

Emperor Tenchi and the granddaughter of Empress Saimei, was buried near the tomb in which Saimei was buried together with her daughter, Princess Hashihito. According to recent excavations, it is almost certain that the latter is Kengoshizuka Kofun in Asukamura and the former is the neighboring small-scale mounded tomb, Koshi-tsukagomon Kofun. It is highly likely that close relatives of the emperor or royal individuals of similar importance were buried in smaller mounded tombs located around the larger tombs.

Satellite tombs such as Nonaka, however, became less prominent around imperial tombs from the 6th century. The large number of weapons and armor found from Nonaka would not, for example, have been appropriate for the burial of a close female relative. Rather than viewing these satellite tombs as the tombs of close royal relatives, such as in the case above, it is therefore likely that they included individuals who were unique to the 5th century.

Searching the chronicles for candidates outside of the imperial family who might be buried within these satellite tombs, the possibility arises of members of the powerful clans who provided empresses. Such powerful clans included the Katsuragi, Kibi, and Hyūga. Large mounded tombs, however, can already be found in their home regions outside of Kawachi. As the home regions and locations of the mounded tombs of such powerful clans were located outside of Furuichi and Mozu, it would not be appropriate to assume that the members of such clans were buried in the mounded tombs of Kawachi.

Two other possibilities can be found within the chronicles. The first are individuals who assisted the emperor and who were dispatched domestically and internationally as emissaries; they often had a warrior-like character. The second are immigrants or the descendants of immigrants who introduced various new technologies to the Japanese archipelago. While both types of individuals generally did not come from families that provided empresses, they are nevertheless known to have been active under the great kings. For example, chief vassals and close advisers Heguri no Tsuku no Sukune, Mononobe no Ōmae no Sukune, and the immigrant Achi no Omi saved the future Emperor Richū from assassination and are later recorded as actively participating in state affairs.

Many scholars doubt that individuals bearing the names of later prominent clans actually existed during this period, such as in the case of Ōtomo no Takehi, who is recorded as having been made *ōmuraji* during the reign of Emperor Chūai. The Niizawa-senzuka Kofun Group, however, can be found in Tsukisaka, to the south of Mount Unebi in Nara Prefecture; considering that this area is believed to be one of the bases of power of the Ōtomo clan, the tomb group, whose construction began at the end of the 4th century, can be positioned as a likely candidate for their final resting place. Appropriate for the clan's identity as an occupational group, the tombs are densely clustered together. It is highly

likely that individuals who would become the Ōtomo clan seen in the later domestic histories were already active during this early period (e.g., Tsukaguchi, 2013). It should be apparent that the traditions recorded in the chronicles cannot all be swept away as complete fabrications.

Let us consider the situation from the 6th century, when satellite tombs became less prominent. For example, the Mononobe clan began constructing large round keyhole tombs and densely packed clusters of small mounded tombs around Isonokami in Nara Prefecture in the 6th century. The disappearance of satellite tombs and the appearance of large tombs in the bases of power of the various clans can perhaps be understood as two sides of the same coin. This may additionally be related to the official establishment of the clans in the 6th century and the stabilization of their status as administrative officials.

The number of satellite tombs is too small for them to have held members of the bureaucracy, even assuming it was a proto-bureaucracy in its formative stages. Considering their number, it would be more appropriate to consider the identity of those buried in the satellite tombs as high-level administrative officials (akin to the *Maetsukimi* of later periods). Assuming a strong personal relationship between a chief vassal and the individual interred in the main tomb, minor physical or temporal distance of the satellite tomb would not pose any contradictory theoretical issues. Moreover, if the deceased individual was in some way related to the later militarily powerful Mononobe clan, was in charge of martially minded occupational groups, and was in charge of producing and managing weapons, the presence of a great amount of arms and armor in the burial would be consistent with his status.

It is not until the reign of Emperor Richū, however, that the Mononobe begins to figure prominently in the chronicles as chief vassals. Considering this, ancestors of the Mononobe may be buried within the satellite tombs of Mozu, where Richū's tomb is said to be located. As for the satellite tombs in Furuichi that precede these, while it is not possible to assert any specific names of candidates, the buried individuals may have belonged to a group other than the Mononobe. This difference between the Mozu and Furuichi groups of the first half of the 5th century may correspond to the general difference of square and round satellite tombs seen between them.

Needless to say, even among the groups that would later become the powerful clans of ancient Japan, it is likely only select individuals were buried in the satellite tombs. The general elite are believed to have built small- to medium-sized tombs independent from the large tombs. Additionally, influential immigrant groups were most likely buried in the small tomb clusters displaying foreign influence, such as the Nagahara group in Osaka Prefecture.

While it is possible that royal relatives are included in the individuals buried in the satellite tombs of Furuichi and

Mozu, the author posits that those with mass burials of arms and armor were the final resting places of chief vassals and officials with martial responsibilities.

In this paper, the author presented a brief treatment of the issues surrounding the nature of the individuals buried in the various small and large tombs of the Furuichi–Mozu Kofun Group. Additional cross-verification between the archaeological evidence and the historical documents is necessary.

References

- Takahashi, Teruhiko. (2013). Shuchōfun no hisōshazō (The identity of those buried in large mounded tombs). *Kofun Jidai no kōkogaku* 6. Dōseisha.
- Tsukaguchi, Yoshinobu. (2013). Yamato heitei denshō no keisei: Jinmu densetsu to yon seiki matsu no sōran (The formation of the conquering tradition of Yamato: The Jinmu legend and the unrest of the late 4th century). *Nihon shoki kenkyū*, 29:135–164.
- Ban, Yasushi. (2013). Zen chū ki kofun no “jijō” mondai: Ichinoyama Kofun to Saki Hishage Kofun wo chūshin ni (Issues in the designation of the individuals buried in the mounded tombs of the Early and Middle Kofun periods: with a focus on Ichinoyama Kofun and Saki Hishage Kofun). *Kikan kōkogaku*, 124:17–21.

Conservation and Three-dimensional Display of Nonaka Kofun's Iron Armor: A Three-dimensional Reconstruction of the Organic Helmets

Tsukamoto Toshio

Introduction

Nonaka Kofun is well-known within Japan for the discovery of a row of ten cuirasses, helmets, and auxiliary gear and is representative of the mass burials of armor often seen in the Middle Kofun period.

As armor is a three-dimensional structure made to protect the wearer during battle, a readily comprehensible three-dimensional display is desirable, in addition to one that preserves the original form and information contained within. Various improvements have been made regarding such new display methods in recent years (Tsukamoto et al., 2002, 2005, and 2012).

We undertook conservation efforts on the armor excavated from Nonaka in order to allow its display in a three-dimensional manner. In particular, we created a three-dimensional reconstruction using both the actual armor (cuirasses, feathered helmet ornaments, and neck plates) as well as replica models (made of resin) of the laced triangular-plate collared cuirasses and organic keeled helmets (the main organic body of which no longer remains). These reconstructions are based on scientific analyses and archaeological research and were produced to make them easier to understand for the general public. This article presents an overview of this process.

Conservation was conducted by Amako Namie and Hatsumura Takehiro and the stable platform was created by Ozaki Makoto and Kanno Shigenori (Studio 33). Analysis was conducted by Yamada Takuji.

1 Issues in the Conservation of the Armor

(1) Historical Significance of the Armor

The armor was initially buried upright in a row, with the helmets stored inside the cuirasses and the neck and shoulder guards resting atop. The burial conditions of the armor were able to be reproduced owing to the efforts of the excavator, Kitano Kōhei, who reinforced the armor with synthetic resin before removing it, thus making the artifacts an invaluable archaeological resource.

(2) Issues Regarding the Conservation

The armor had become deformed by the weight of the soil, with the rear shoulder frames collapsed toward the front. Additionally, most of the neck and shoulder guards were rusted to the cuirasses and parts of the shoulder guards had fallen and broken into fragments, making it difficult to reconstruct their original form. Moreover, as this large amount of iron fragments had been stored in its fragmented state over many years, some had gone missing.



Fig. 1 Condition of armor prior to conservation (top: cuirass; bottom: helmet)

2 Conservation of the Armor and the Three-dimensional Display

(1) Armor Chosen for Conservation

In this conservation project, the Gangoji Institute for Research of Cultural Property restored four of the 11 cuirasses (riveted triangular-plate cuirass, neck guard, and shoulder guards nos. 1, 6, and 7; and laced triangular-plate collared cuirass no. 10) and eight helmets (riveted lamellar helmet with visor and neck plates nos. 2, 3, 5, 6, and 7; and organic keeled helmet, neck plate, and feathered helmet ornament nos. 8, 9, and 10).

(2) Focus of the Armor Conservation

The goal of the conservation was to prevent the progression of deterioration and preserve the armor, including the rusted organic materials, to ensure its academic value. The three-dimensional display was decided upon to make the original state of the armor easier to understand for the general public. The goal was to be able to safely display the armor as an invaluable cultural asset for posterity's sake and to create a restoration that could enable analysis of the interior of the armor for future research.

(3) Three-dimensional Display of the Armor using a Stable Platform

Cuirasses In the restoration of the cuirasses, a safe supporting method was devised using a molded stable platform, in which the weight of the cuirass was dispersed evenly to prevent stress concentration. Additionally, due to the significant deformation from soil pressure, all the pieces of the armor were separated and assembled individually on the stand. This allowed removal from the supporting stand and observation of the interior of each armor piece.

Helmets Two types of three-dimensional restorations were conducted on the helmets depending on how much of the helmet remained: one type reconstructed missing areas with resin; and the other type utilized helmets in good condition as a model to create a molded resin stand to hold the remaining fragments.

Integrated Three-dimensional Display Each smaller stand for the helmets, neck plates, shoulder guards, and neck guards, etc., was combined with the stand for the cuirass to safely and in a completely removable manner replicate the armor as if it was worn by a human. Particularly noteworthy, taking into consideration the amount of space needed for exhibition in the case of lending to outside venues, is the ability to remove all the parts of the cuirass, such as the front and rear sections, for various types of displays, in addition to the three-dimensional exhibition: for example, an expanded view from the rear or side-by-side comparisons of the front and rear sections.



Fig. 2 Collared cuirass no. 10 (top: prior to reconstruction; bottom: individual parts prior to assemblage)

3 Restoration and Display of Laced Triangular-plate Collared Cuirass No. 10

Here we will introduce the details of the conservation process and the construction of the three-dimensional stand for laced triangular-plate collared cuirass no. 10.

(1) Conservation Process

- 1. Transportation of artifacts:** Artifacts were safely transported in a specialized art-transport vehicle.
- 2. Preliminary investigation:** Photography, x-ray photography, metallographic analysis, and analysis and identification of materials and organic remains were conducted prior to repairs.
- 3. Consideration of restoration direction:** The direction to be taken was determined based on results of the preliminary investigations. Because corrosion had not progressed for the collared cuirass and it lacked remaining metallic structure, it was decided that desalination treatment would not be conducted and the preservation of leather and other organic remains would be prioritized, and that rust prevention and reinforcement with resin impregnation and resin coating would be conducted.
- 4. Cleaning:** Unnecessary dirt and rust were carefully removed using scalpels, grinders, and air brushes, while preserving information of rusted organic materials.

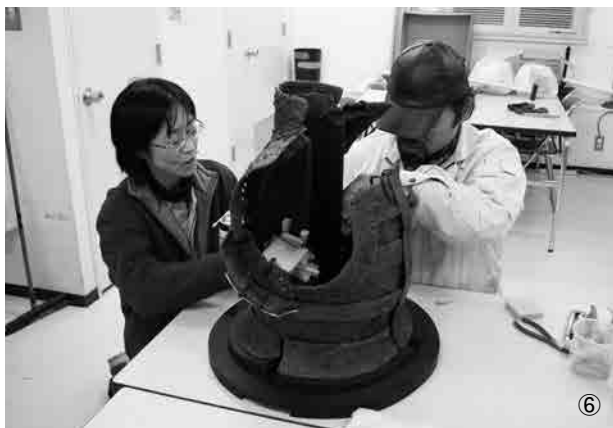
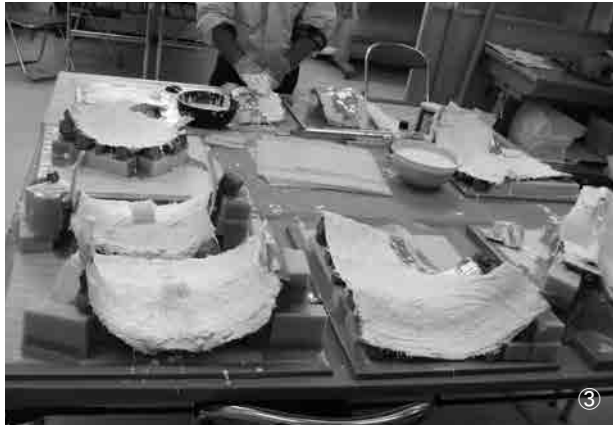


Fig. 3 Production process of the stable platform for collared cuirass no. 10

- 5. Resin impregnation and coating:** Organic materials were coated with Paraloid B-72 and were vacuum-impregnated with fluorine acrylic resin (V chlorofluorocarbon) a total of three times. Then, they were coated three times with a lower concentration of the same resin in order to be reinforced against rust.
- 6. Binding and reconstruction:** Each part was checked for fragment joining, and the fragments were bound with epoxy adhesive. Missing areas were reconstructed as necessary with epoxy resin.
- 7. Consideration of assemblage process:** Analysis of the individual parts was conducted in order to determine the most suitable method of assembling them on the stable

platform. It was decided to divide the cuirass into nine sections: the right and left front sections, three parts in the rear, the bottom of the wings on the right and left sides, and the two crescent-shaped plates under the armpits. For the joining of individual parts, information concerning leather lacing was prioritized and bonding was kept to a minimum.

- 8. Antique paint finish:** Surfaces of replicated parts were colored with acrylic paint to give an aged look, and the back was painted with a single color.
- 9. Records after repairs:** Photographs and X-ray photographs were taken after repairs to complete the conservation process.

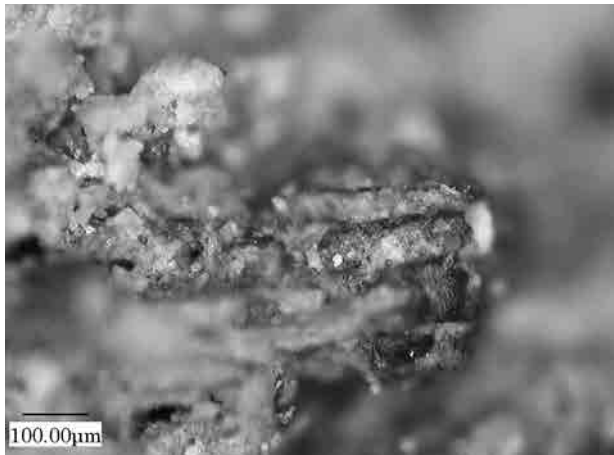
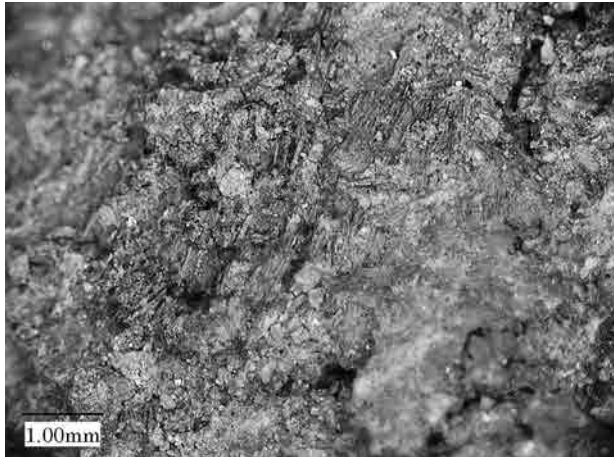


Fig. 4 Microscopic images of animal hair found on iron bordering no. 8 (bottom: enlargement)

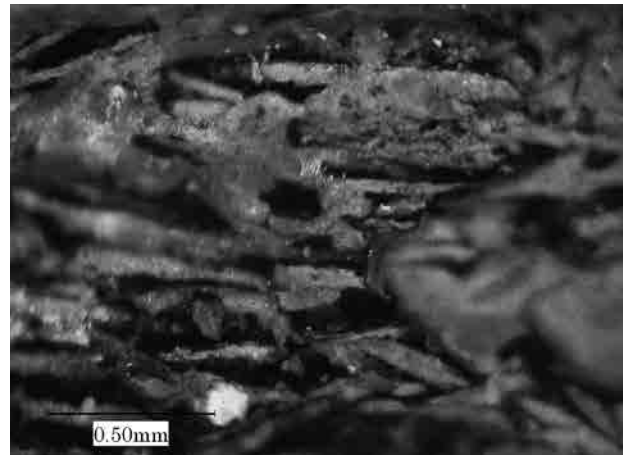
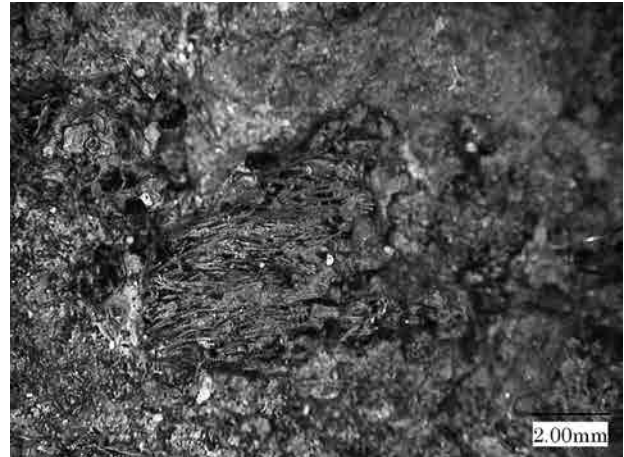


Fig. 5 Microscopic images of fibers found on neck plate no. 9 (bottom: enlargement)

(2) Construction Process of the Stable Platform

1. Artifacts were wrapped in tinfoil.
2. A mold of the artifacts was made with silicone resin.
3. A support was made of plaster.
4. Molding of prototype (complete molded products produced with epoxy resin).
5. Construction of base.
6. Positioning of stable platform.
7. Setting the rear and front sides of the armor.
8. Setting brackets for the wings and side crescent plates.
9. Placing the wings and side crescent plates.
10. Integrating helmet stand to complete stabilized platform.

4 Scientific Analysis and Three-dimensional Display of Organic Keeled Helmets

Accompanying the collared cuirasses discussed above were three organic keeled helmets with ornaments made of a solid iron base covered in gilt bronze and bearing three feathered prongs.

(1) Recognition of the Organic Helmets

Kitano recognized the organic helmets as being keeled based on the presence of feathered helmet ornaments, neck plates, and iron bordering. Judging by the animal hairs attached to the surface of the iron bordering, the interior of the neck plates, and the bottom of the helmet ornaments, he inferred that the body of the helmets was made of leather, with animal hair still attached; additionally, judging by the

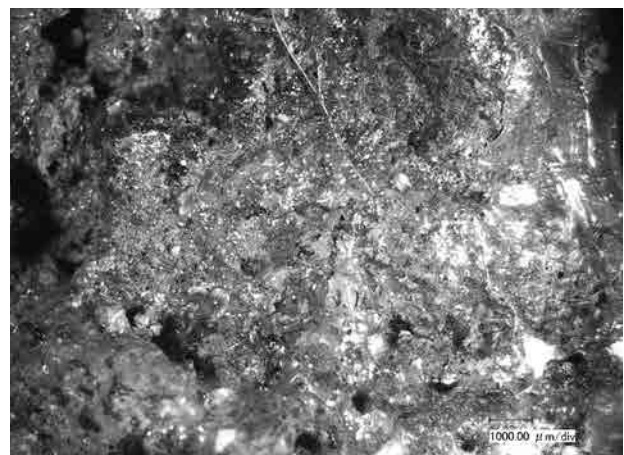


Fig. 6 Microscopic image of leather (area displaying red coloration) found on neck plate no. 10

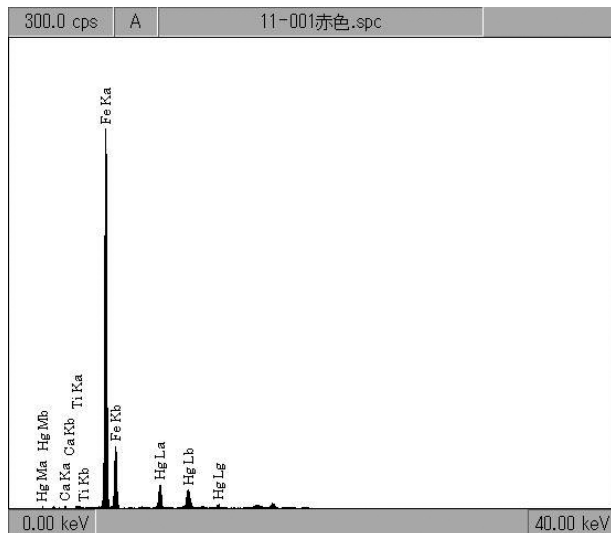


Fig. 7 Results of XRF analysis on leather (area displaying red coloration) found on neck plate no. 10

black lacquer film with animal hairs attached found around the bottom of cuirass no. 9, he suggested that the hair had been hardened with black lacquer. He also proposed that the iron bordering had been wrapped in leather (Kitano 1976). While the replica in the Chikatsu Asuka Museum in Osaka was based on Kitano's theory, the animal hairs were not hardened with black lacquer (Ichinose et al., ed., 1998).

(2) Scientific Analysis of the Organic Keeled Helmets

In order to determine the material and structure of the organic helmets, transmission observation using X-ray radiography, observation of residue using stereoscopic microscopes, and material analysis using X-ray fluorescent analysis were conducted.

Helmet no. 8 Hairs of approximately $70\ \mu\text{m}$ in diameter from larger mammals (deer, horses, cows, etc.) were detected on the iron bordering (Fig. 4). Mercury (Hg) was detected in the red areas of the fibrous parts and cinnabar is believed to have been used as a red pigment. X-ray radiography suggested that the rusted organic materials may have been wrapped in a cross-hatch pattern (Fig. 8). However, no certain traces of animal hairs were found on either the interior of the neck plate or on the underside of the helmet ornament.

Helmet no. 9 Hairs of approximately $70\ \mu\text{m}$ in diameter from larger mammals (deer,

horses, cows, etc.) were detected on the underside of the helmet ornament. However, no traces of black lacquer coating could be found from the hairs. Additionally, red film was detected, analysis of which suggested that it may have come from iron rust. Animal hairs were not found on the neck plate. In addition to botanical fibers such as hemp and ramie, leather bordering was detected on the four outer metal edges of the neck plate (Fig. 5). There is a possibility that ornamentation was greater than previously thought. On the underside of the helmet ornament were twisted thread-shaped fibers thought to be binding string for attachment. In the original site report was a scale drawing of the iron bordering of helmet no. 9 with black-lacquered animal hairs; as the iron bordering, however, has long been missing, we were unable to confirm this.

Helmet no. 10 Hairs of approximately $70\ \mu\text{m}$ in diameter from larger mammals (deer, horses, cows, etc.) were detected on the interior and exterior of the neck plate and on the underside of the helmet ornament. However, no traces of lacquer were found. Mercury (Hg) was detected in the red areas of the leather lacing covering the four outer metal edges of the neck plate (Fig. 7), and cinnabar is believed to have been used for red pigment. Botanical fibers were found underneath the helmet ornament, which most likely belonged to a base cloth. Binding strings were also found where silk cloth was twisted into threads.

Feathered helmet ornaments Gold (Au) and mercury (Hg) were detected on the surface of the three ornaments through X-ray fluorescent analysis, confirming that copper was gilded with the mercury amalgam method to produce gilt

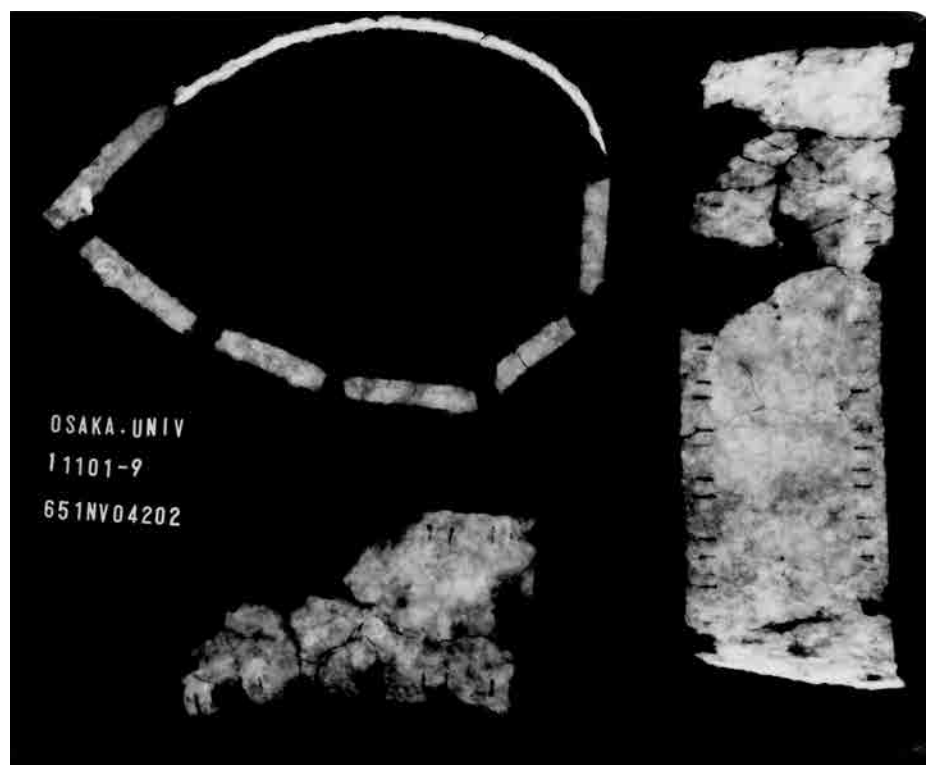


Fig. 8 X-ray radiography of iron bordering and neck plate no. 8

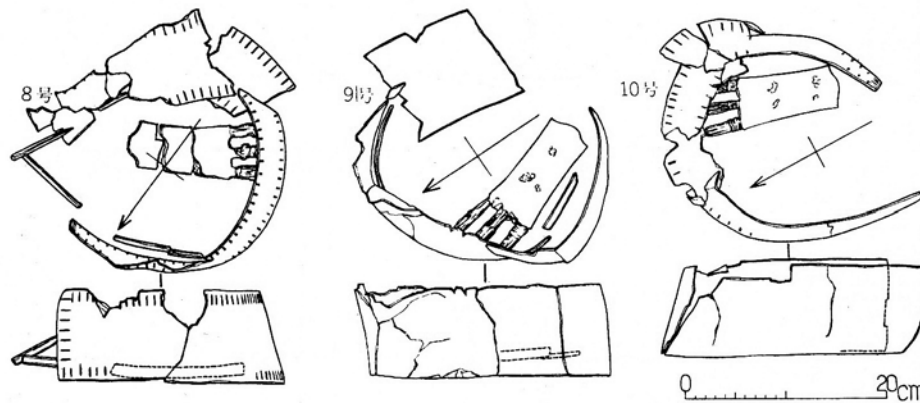


Fig. 9 Excavation conditions of helmet nos. 8, 9, and 10 (after Kitano, 1976)



Fig. 10 Reconstructed three-dimensional display of helmet no. 8

bronze plates, the edges of which were bent and attached to the iron base. However, almost no trace of gilt bronze plating remains on ornament no. 8, suggesting that the gilt bronze plate may have originally been very thin and differences in production techniques may have existed between the ornaments.

Details concerning the three prongs have been omitted due to space limitations.

(3) Structure of the Organic Helmets and their Displays

We constructed three-dimensional displays of the helmets based on our understanding of the helmet structure, which derives from observation and analyses of existing iron bordering, helmet ornaments, and neck plates.

Model of the helmet body The shape of the main body was most certainly that of a keeled helmet and analysis revealed that the body was made of leather with animal hairs still attached. However, we were not able to confirm whether the animal hairs were hardened with black lacquer. Additionally, it is likely that the structure and decoration of each helmet was slightly different: for example, helmet no. 10 lacked an iron bordering and differences were recognized in the decoration of the leather bordering around the edges of the neck plates and of the helmet ornaments. Regarding the model for the helmets, it was originally proposed to use a helmet-shaped *haniwa* as a model, but this was decided against as many examples are not faithful to the structure of the actual helmets. As there is an examples of a wooden helmet being modeled on an iron example (Tsukamoto et al., 2007), it was decided to that it would be suitable to create the resin replicas of the leather helmets based on iron keeled helmets that date to around the same period as Nonaka. The three-dimensional displays were finished by embedding the iron fragments of the iron bordering and the helmet ornaments into the small helmet stand.

Position of the iron bordering The positioning of the iron bordering of helmet no. 8 required careful consideration. Observation of the iron bordering revealed that it came to a

strong point in the front. As the very tip was broken, it was not possible to accurately measure the length of the pointed area, but it became clear that the iron bordering followed the shape of the keeled frontal section. While the iron bordering was originally considered to have been wrapped in fur, the process of wrapping it would have been extremely difficult. It was therefore suggested that the bordering was more likely to have been positioned on the outside rather than the inside, based on the fact that the fur attached to the bordering does not retain the thickness of the original leather and the presence of fibers colored red with cinnabar (perhaps the fibers were for binding the iron bordering).

While it would have been possible to hang the neck plate from holes opened in the leather body if the fur was hardened with lacquer, it would have been difficult to do so if this were not the case. This is apparent from past experience in reconstructing quivers. Therefore, it is likely that the neck plate was hung from the iron bordering. Judging from the fact that the binding strap holes of the neck plate are in the center and from the excavation status diagram (Fig. 9), in which the iron bordering is pictured slightly elevated, it is believed that the iron bordering would be positioned slightly higher than the helmet's lower edge and bound in a crosshatch pattern. This is confirmed by the excavation status of helmet no. 9's iron bordering and neck plate, in addition to the fact that the binding strap holes of the neck plate are situated higher than the center. However, this is only a proposed reconstruction; at a meeting of armor specialists, Sakaguchi Hideki suggested a reconstruction in which the neck plate was laced to the iron bordering lining the bottom of the leather body. There is currently no strong evidence from a technological standpoint to confirm the actual positioning. As iron bordering no. 9 no longer remains and cannot be analyzed, we have decided upon a reconstruction with the bordering about 1.5 centimeters above from the lower edge, taking into account the positioning at the time of excavation.

5 Conclusion

Through this conservation project, we were able to construct a three-dimensional display that allows maximum utilization of the armor, while preserving its safety through the innovation of stable platforms and assembling brackets. It is necessary to develop and improve restoration technologies by taking into account better exhibition methods in order to utilize artifacts in a more advanced manner; this requires protecting artifacts from deformation and deterioration in order to prevent their value as cultural assets from being lost.

Reference

- Kitano, Kōhei. (1976). *Kawachi Nonaka Kofun no kenkyū* (Research on Nonaka Kofun in Kawachi). Ōsaka daigaku bungakubu kokushi kenkyūshitsu.
- Ichinose, Kazuo et al. (Eds.). (1998). *Chikatsu Asuka kōbō* (The Chikatsu Asuka workshop). Ōsaka-fu Chikatsu Asuka hakubutsukan.
- Tsukamoto, Toshio et al. (2002). Bunri gattai-gata shijidai ni yoru kacchū no fukugen to tenji (Reconstruction and display of armor using an assembly-style supporting stand). *Nihon bunkazai kagaku kai dai 19 kai taikai kenkyū happyō yōshishū*. Nihon bunkazai kagaku kai.
- Tsukamoto, Toshio et al. (2005). Bunri kadō-gata shijidai to fukugen mozō pātsu wo kumiawaseta kacchū no fukugen to tenji (Reconstruction and display of armor using an integrated and movable supporting stand with replica parts). *Nihon bunkazai kagaku kai dai 22 kai taikai kenkyū happyō yōshishū*. Nihon bunkazai kagaku kai.
- Tsukamoto, Toshio et al. (2007). IV Tokutanjō-ato SE1300 Ido-ato shutsudo mokuseihin ni tsuite (IV Tokutan Castle Ruins SE1300: on the wooden objects unearthed from the well). *Tokutan jō ato dai 65 ji hakkutsu chōsa*. Yahaba-chō kyōiku iinkai.
- Tsukamoto, Toshio et al. (2012). Bunri gattai kanō na kacchū no fukugen to tenji (Reconstruction and display of integrated armor). *Nihon bunkazai kagaku kai dai 29 kai taikai kenkyū happyō yōshishū*. Nihon bunkazai kagaku kai.

Selected references

- Chikatsu-asuka hakubutsukan. (2011). *Mozu–Furuichi no ryōbo kofun: kyodai zenpōkōenfun no jitsuzō* (Imperial tombs of the Mozu–Furuichi Kofun Group: the reality of the giant keyhole tombs).
- Fuji Naomoto, Inoue Kaoru, and Kitano Kōhei. (1964). *Kawachi ni okeru kofun no chōsa* (The excavation of kofun in Kawachi). Ōsaka daigaku bungakubu kokushi kenkyūshitsu.
- Fukunaga Shin’ya (2005). *Sankakubuchi shinjūkyō no kenkyū* (Research on triangular-rimmed deity-and-beast mirrors). Ōsaka daigaku shuppankai.
- Habikino City. (1994). *Habikino-shi shi* (History of Habikino City), Vol. 3, Historical sources 1. Habikino-shi shi hensan iinkai.
- Kashiba-shi Nijōsan hakubutsukan. (2008). *Nijōsan-roku no kōkogaku: kawachi no kofun* (At the foot of Mt. Nijō: The kofun of Kawachi).
- Kitano, Kōhei. (1976). *Kawachi Nonaka Kofun no kenkyū* (Research on Nonaka Kofun in Kawachi). Ōsaka daigaku bungakubu kokushi kenkyūshitsu.
- Maizōbunkazai kenkyūkai (2003). *Haniwa: entō haniwa seisaku gihō no kansatsu, ninshiki, bunseki* (Haniwa: observing, recognizing, and analyzing the production techniques of cylindrical haniwa).
- Sakai-shi hakubutsukan. (2009). *Nintoku tennō-ryō kofun chikuzō: Mozu–Furuichi no kofungun wo saguru* (The construction of Emperor Nintoku’s mausoleum: investigation into the Mozu–Furuichi Kofun Group).
- Shiraishi, Taichirō, et al. (2008). *Kinki-chihō ni okeru ōgata kofungun no kisotekikenkyū* (Research on the major kofun groups of the Kinki region). JSPS KAKENHI (Grants-in-Aid for Scientific Research (A), No.17202020), 2005–2007. Nara: Nara daigaku bungakubu bunkazai gakka.
- Sugii Takeshi and Ueno Yoshifumi (Eds). (2012). *Marozuka Kofun shutsudohin wo chūshin toshita kofun jidai chūki buki bugu no kenkyū* (Research on the arms and armor of the Middle Kofun period: an analysis of the artifacts from Marozuka Kofun). Kokuritsu rekishi minzoku hakubutsukan.
- Tsude Hiroshi. (Ed.). (1989). *Kodaishi fukugen 6: Kofun jidai no ō to minshū* (Recreating the past 6: the kings and people of the Kofun period). Kodansha.
- Ueda, Mutsumi (Ed.). (1991). *Ishikawa ryūiki iseki gun hakkutsu chōsa hōkoku* (Report on the excavation of sites in the Ishikawa River Basin), VI. Fujiidera-shi kyōiku iinkai.
- Yamada, Yukihiro et al (Eds.). (1997). *Nishihakayama Kofun*. Fujiidera-shi kyōiku iinkai.

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