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Archaeological Craftwork 2024: Ethnography of Archaeology at Suwahara Site, Hokuto City, Yamanashi 2024

John Ertl, Yasuyuki Yoshida, Corey Noxon

Introduction

This report covers the sixth year of our ethnography on the excavation and reconstruction of a Jomon period pit dwelling. Since 2019, we have excavated at the Middle-Jomon period site of Suwahara and joined the pit house rebuilding activities at the nearby Umenoki Historic Park (both in Hokuto City, Yamanashi). In the first report, we introduced Suwahara and the challenge of obtaining permission to conduct “academic excavations” (Ertl and Yoshida 2020). The second compared approaches to the design of pit dwellings at three sites in the Central Highlands (Ertl and Yoshida 2021). Year three detailed our project’s research methodology and objectives (Ertl, Yoshida, and Ikari 2022). In year four we examined the subjective elements of both the excavation and the reconstruction of pit dwellings (Ertl and Yoshida 2023). The fifth report compared the analog and digital illustrations that we have made to document the excavation at Suwahara (Ertl, Yoshida, and Noxon 2024a).

In these reports, we have depicted the production of archaeological knowledge as a kind of craftwork (e.g., Shanks and McGuire 1996; Edgeworth 2006). Whether digging a trench, drawing illustrations, making artifact inventories, or shaping the posts and beams of a pit house, each of these activities requires developing skills

with tools, honing senses in specialized ways (Goodwin 1994), and making “artifacts,” both physical and symbolic. Our project is directed toward making a Middle Jomon pit dwelling at Umenoki site, which will incorporate the knowledge from these excavations at Suwahara and from our nation-wide surveys on prehistoric architectural reconstructions (Ertl 2021; Ertl, Yoshida, and Noxon 2024b). Participating in the pit house building activities at Umenoki, these experiences allow us to reflect upon and feedback into the methodology and objectives in the excavation, laboratory work, and architectural design phases of the project.

This year’s report begins with a summary of the Suwahara excavation and the major finds in 2024. The second section introduces several people who have visited the Suwahara excavation, asking what brings them to the site and what experiences they hope to have. The first episode introduces a couple of uninvited visitors, both of whom gave gifts to the excavation team, much in the same way we imagine visitors in the Jomon period exchanged items from distant locations. A second vignette is focused on the children at Suwahara and considers why archaeologists have largely disregarded children in Jomon archaeology as well as the children who are brought by archaeologist-parents to digs. In the third section, we jump to the Middle Jomon period site of Nutaba (Hokuto City, Yamanashi), which was excavated by Hokuto City Archaeology Center and the Kayagatake History and Culture Institute from 2023 to 2024. Divided into two episodes, the first summarizes Ertl’s fieldwork at the excavation, and the second introduces the Nutaba *genchi setsumei-kai* (on-site explanation meeting) while contemplating the role of these meetings in archaeological education. A final section provides an in-depth look at the digital documentation conducted by Corey Noxon for the Suwahara excavation in 2024. Delving into the backstage of this work, this section reveals the minutiae involved both onsite and off in making these kinds of records.

Suwahara Excavation 2024

The 2024 excavation season at Suwahara site ran from 17 August to 4 September with several days beforehand to prepare the site (Table 1). The core members were John Ertl (Keio University), Yoshida Yasuyuki (Morioka University), Kobayashi Ken'ichi (Chuo University), and Corey Noxon (Ritsumeikan University). Yoshida and Kobayashi were joined by current and former students, some for the entire duration and others for just an afternoon. Joining for a third year was Nguyen Hoang Bach Linh, a graduate student at Kanazawa University and researcher at the Center for Archaeological Research, Southern Institute for Social Sciences in Vietnam. Osaka Dan again led a group of students from The University of Tokyo Archaeology Club for several days. Many other visitors came for a day to either dig or observe. Sano Takashi and others from the Hokuto City Archaeology Center and the Kayagatake History and Culture Institute continued to provide support during the excavation.

Overview of the 2024 Excavation Season

To summarize, 2024 excavations focused on PJ1 (the first Jomon pit house feature). The remaining 50cm “slides” were dug out, the section belt was removed, and the pit floor revealed (Figure 1). Excavations confirmed the presence of PJ3 (the third Jomon pit house feature), which partially intersects PJ1 on the south side. Work also continued on ST4 (sub-trench 4) located in the southwest corner of the site and this trench was widened to include a new 50cm slide. The excavation experienced delays due to several days of rain. On these days we worked off site, making illustrations of the stones recovered in 2023 from the hearth at PJ5 and washing the recovered pottery.

The pit house feature PJ1 was identified during the first season in 2019. In 2021, a trench named ST3 (the third sub-trench) was started running north-south

Table 1

Phase	Date	Activities
Pre-excavation (between excavation seasons)	April to August 2024	Laboratory work: Clean and sort artifacts (at Keio University, Morioka University, Chuo University), processing of photogrammetry scans (Ritsumeikan University)
	June to August 2024	Mowing at Suwahara site, remove soil on blue sheet
Excavation	August 17–19	Preparation: remove sand from pit, pull weeds, resurface site, instillation of storage and toilets, initial photos and 3D scan, establish benchmark points, visit by Sano Takashi
	August 20–23	Excavate, illustrate, and scan Slides NW4 and SW4 (8/23) and NE3 and SE3 (8/22), extend ST4 to new slide, visits by wife and child from Shimizuya-INN, and Mercedes-Benz-Purple-Color-Power-Stone-Man
	August 24	Participate in Nutaba site <i>gen-seatsu</i> , joined by Tokyo University Archaeology Group, visit by Anzai Masahito (Emeritus Tohoku University of Art and Design), Kameda Naomi (Nishi Tokyo City), Takeo Susumu (Kunitachi City), Saga Momoko (Yamanashi Prefecture), Oiyama Yumi (Hokuto City), Ono Shoko, Tashiro Naoya, Ozawa Masahiko, Shibata Miki, Kasahara Hiroshi, and Elora Suzu Noxon
	August 25–26	Completion of Slide NE4 and SE4 (8/25); clean up, illustrate and scan section belt; visit by Ikari Yoko and Anna, Nishimura Sayaka and Sato Mayu (former Chuo University students), Baba Megumi (Contemporary Artist)
	August 27–31	Excavation of section belt, discovery of <i>suienmon</i> pottery and scanned belt, illustrate hearthstones from PJ5 (excavated 2023), visit by Kudo Yuichiro (Gakushuin Women's University) and Nomura Momoka (Aoyama Gakuin University student) (8/29), visit by Wada Kenichi (8/30)
	September 1–3	Reveal PJ1 floor, find burnt earth, partially excavate postholes
	September 4	Closure: return equipment, fill sand into pit to preserve archaeological features
Post-excavation (preparation for 2025 excavation season)	September 2024 to March 2025	Laboratory work: Clean and sort artifacts (at Morioka University, and Chuo University), photogrammetry scans (Ritsumeikan University)



Figure 1: Photogrammetry scan of Suwahara site taken after the final full day of the 2024 excavation season. (1 September 2024)

through the pit feature. In 2022, ST3 was widened and extended to the southernmost end of the site. In doing this, three additional pit house features were tentatively identified (named PJ2, PJ3, and PJ4). The trench walls within PJ1 were successively dug out in 50cm slides, creating several section profiles. The pottery in PJ1 was identified as Sori 1-type, including a large *suienmon*-type (water vapor) pot handle. In 2022, a new pit house feature (called PJ5) with Sori-5 type pottery was identified directly overlapping PJ1. For 2023, both sides of the trench were extended to Slide 3. The remains found in 2023 include a pentagonal hearth located in the near-center and a stone altar (*sekidan*) at the far edge of the pit.

For 2024, the excavation of PJ1 can be divided into two halves: one week to complete the slides and identify the pit walls, and a second week to dig out the section belt and uncover the pit floor. The remaining slides (Slides 3 and 4) contained comparatively few remains and these were documented with section drawings, photographs, and photogrammetric scans. Identifying the walls of the pit house proved challenging. The north side appears to butt up against an area of natural rocks, forming a relatively straight wall at the north end of the pit (Figure



Figure 2: A view of PJ1. The north wall starting from the stone altar to the far right of the image contains many “natural stones” indicating that this may demarcate the wall of the pit dwelling. (1 September 2024)

2). A chipped axe head (*dasei-sekifu*) was found next to the stone altar (Figure 3), indicating that these large stones were part of the cultural layer. On the south side, the pit walls could not be identified, and the presence of Katsusaka-type pottery hinted that PJ1 intersected an older pit dwelling feature (PJ3).

Excavating the section belt for PJ1 was done in stages following the stratigraphic layers previously designated as 1, 2a, 2b, 3, and 4. Soil samples were taken from a 20 x 25cm section of the belt near the hearth in nine separate 5cm layers.⁽¹⁾ The distribution of artifacts through the section belt was consistent with the rest of PJ1. Notably, layer 2b contained many broken pieces of a *suienmon*-type pot (Figure 4). Photogrammetric scans and plan illustrations were made to document each level as the pottery and stones were removed (Figure 5). Over a

(1) Kobayashi Ken'ichi called this the “Isarago method” (*isarago-hōshiki*) and explained it was based on the sampling conducted at Isarago Shell Midden by Suzuki Kimio of Keio University when he was a student in the late-1970s (Minatoku Isarago-kaizuka Is-eki Chōsadan 1981).



Figure 3: Kobayashi Ken'ichi taking photograph of chipped axe head embedded found next to the stone altar. (24 August 2024)



Figure 4: View of a *suienmon*-type vessel discovered in the section belt of PJ1. (28 August 2024)

hundred potsherds were washed off-site, and Noxon took these to be scanned at Ritsumeikan University. Hidden beneath the belt on layer 4, the layer of the living floor (*yukamen taiseki-do*), three patches of reddish burnt earth (*shō-do*) were revealed and interpreted as signs of repeated fires. On the final excavation day,



Figure 5: Corey Noxon taking photographs of the section belt after the majority of the *suienmon*-type vessel pottery had been removed. (30 August 2024).

several postholes were identified and partially excavated.

In 2022, pit dwelling features PJ2 and PJ3 were identified by Kobayashi in the section profile of ST3 immediately south of PJ1. After expanding the circumference of PJ1, it became clear that the area identified as PJ2 was not a pit dwelling.⁽²⁾ In the trench corresponding with PJ3, the pottery found was mostly Katsusaka-type, which precedes the Sori 1-type pottery in PJ1. When searching for the walls of PJ1, many Katsusaka-type potsherds were found on the southern side. This was interpreted to be pottery from PJ3 that had found its way into PJ1 after it was abandoned. The team discussed that this pottery may have been included in dirt surrounding PJ3 that had been dug up and placed on the roof of PJ1. Alternately, this pottery may have been incorporated in the dirt mound (*shūtei*) that was around the pit rim of PJ1, which later fell into PJ1. The most distinct discovery in PJ3 was a small (miniature) ornate pot with a 10-pointed rim found in the wall of the trench ST3 (Figure 6).

(2) On site we discussed if the area initially identified as PJ2 might have been this area of overlap between PJ1 and PJ3.

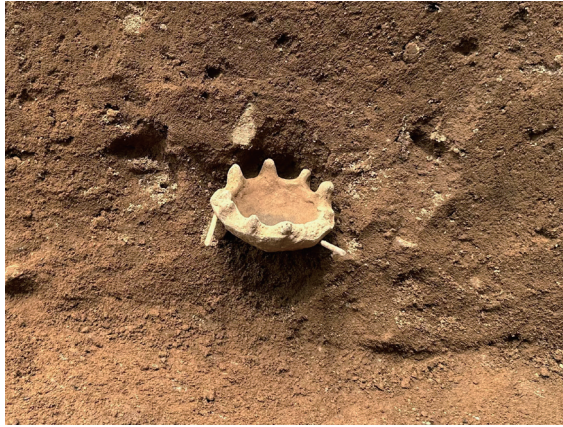


Figure 6: A small (miniature) vessel with pointed rim located in the trench ST3, which has tentatively confirmed the presence of a partially overlapping pithouse identified as PJ3. (22 August 2024)

ST4 (sub-trench 4) was again this year excavated by students and visitors with little previous experience. The trench bisects a pit house feature coded PJ6 (and a second feature tentatively identified as PJ7). ST4 was excavated to about 50cm deep, not yet exposing the floor. To make it easier to dig, it was decided to start a new 50cm wide slide adjacent to ST4. This was dug to a depth of approximately 10cm. Several distinctive remains were recovered, including what may be the leg from a clay figurine (*dogū*) as well as a broken stand (*kidai-gata doki*) used for making pottery.

The Many Faces of the Suwahara Excavation

What brings people to an excavation site and what experiences do they expect to have? With Suwahara, only a few of us share the goals outlined in these annual reports – namely, to collect data on Jomon buildings and reconstruct a pit house at Umenoki site. Even Kobayashi Ken'ichi and his students have not yet visited Umenoki, at least to our knowledge. Of course, we expect participants will have

individual aims, curiosities, and interests that bring them to Suwahara site. Ertl's students, for example, have variously said they hoped to lose some weight, dig a two-meter-deep hole, or simply needed to get out of their parents' house. Noble intentions, by the end of the season most learn the day-to-day routine of an excavation and leave with memories that range from heat exhaustion, entertaining field trips, and dinner parties.

As is the nature of ethnographic writing, the attention we might give to any one person varies greatly, and some are left out entirely. In previous reports, we have recounted our personal reflections, the learning process of students, and the expertise of Kobayashi and others. Here we delve into our interactions with two types of people who are typically excluded from excavation reports and may even go unrecognized by the authors: uninvited visitors and children.

Gift exchanges at Suwahara

As with any Jomon period settlement site, the remains at Suwahara include several items that were not locally sourced (e.g., Koyama and Okada 2000). This includes Kasori-type pottery from the Kanto area, axe heads made of green tuff from riverbeds in Ina Valley, Nagano, arrowheads from obsidian mined in Nagano, and what is likely red jasper (*sekiheki-gyoku*) from Sado Island, Niigata. It is doubtful that the people of Suwahara journeyed to the far ends of Chikuma-Shinano river valley or built boats to cross the Japan Sea. Rather, these goods arrived at Suwahara through some network of exchanges.

Several years ago, Sano Takashi showed students from Keio University a display of obsidian at Umenoki Historic Site. He asked, "As students in economics, how do you think the people at Umenoki acquired this precious stone from Jomon people in Nagano?" Pulling their best Adam Smith, the students thought that with no currency and no evidence of violence, they must have "bartered for it." Smiling, Sano retorted, "But what might they barter with if every Jomon community could



Figure 7: A mysterious visitor in purple (far left) is given a bespoke tour of Suwahara site by Yoshida while the excavation team picks up artifacts. (23 August 2024)

make their own pottery and forage their own food?” Stumped, the students could not envision an alternate system of exchange.

Visitors to Suwahara today, as in the Jomon period, bring gifts that originate from both near and far. This year, at the end of the day on August 23, a white Mercedes-Benz sedan pulled into the site. Not expecting guests, Yoshida and Ertl went over to see who was getting out of the car. The man in his early 70s asked what we were doing and said, “I thought you were having a barbeque.” He was dressed from head to toe in purple: a purple cap, purple-rimmed sunglasses, a shirt with an abstract purple print, purple shorts, and shoes with a floral print, some purple. Accessories included a purple amethyst pendant, amethyst and quartz bracelets, three silver rings (one with an amethyst stone), and a purple-faced watch. Eager to chat, he said he lived in Shosenkyo Gorge, an area well known for gemstones.

Mildly amused by the excavation, he looked what we had found and followed with questions about Jomon culture and pottery (Figure 7). He told us that he collected pottery and showed us a large pot that was in the trunk of his car. He said it was made by a potter who lives up the road, and he just now bought it off the

potter's tokonoma where it was on display. Ertl looked closely at the pot and out of nowhere the man said, "Let me give it to you" (*sashiagemashō*). He confirmed with Yoshida, "You have no interest in these things, do you?" and repeated that Ertl take it. Attempting to refuse, Ertl jested, "Your wife will scold you," to which he quipped, "On the contrary, she will thank you," as there were already forty pots all over the house. Cornered, Ertl thanked the man and reciprocated with an obsidian flake that had been sitting in his car. Not from Suwahara, Ertl explained that it was probably brought to Hokuto City in the Jomon period from obsidian mines in Nagano.

The man in purple stayed for close to an hour, chatting up the students from Morioka University and showing off pictures of his grandchildren. As we moved to close the site for the night, he pulled out a white plastic shopping bag filled with small stones. He told the Morioka students to take one, insisting that they choose without looking, but to "grab a big one." Inside were smooth stones of various shades of purple and white – a collection of power stones. He also gave power stones to Ertl, Yoshida, and Nguyen, but not to the group from Chuo who had been working throughout this encounter. Just as suddenly as he had arrived, he put the remaining power stones back in his car and drove off.

In another encounter, on August 30, we were visited by Wada Ken'ichi, the neighbor who showed us his "Jomon garden" and stone tool collection last year (Ertl, Yoshida, and Noxon 2024a: 30–31). Wada was eager to ask us about a stone pendant he found in one of his fields that he thought might be jade from the Itoigawa area (Niigata Prefecture). To his disappointment it was green tuff (*gyōkai-gan*), and he was hardly interested as we mentioned it comes from riverbeds across the Southern Alps. We praised his diverse collection of axe heads, and Wada said you can find Jomon remains all around here. He led us to the edge of a vegetable garden where many pieces of pottery had been pulled out over the years. Among them we noticed a broken stone rod (*sekibō*) about 20cm long. We wondered if it



Figure 8: Not knowing what to do with a pot, purple power stone, and broken Jomon period stone rod gifted by visitors, they were placed on Ertl's tokonoma next to a pair of Ainu Nipopo dolls from Hokkaido left by the previous owners of the house. (1 September 2024)

might be part of the stone rod in the hearth at PJ1, and Wada carried it back to the site to check. Clearly not a match, Wada handed it over and insisted that we keep it. For now, Ertl has this stone standing next to the purple man's pot and power stone on the tokonoma at his house (Figure 8).

The missing children of Suwahara

Children have visited every year of the Suwahara excavation. This year, the landlady of Shimizuya Inn (where the team stays) came with her young daughter for a short visit at Yoshida's invitation. A few years ago, Sano Takashi came with a boy, perhaps nine years old, who seemed familiar with excavation sites. Sano encouraged the boy to look at a piece of pottery and asked him if he could imagine how it was made. When Kobayashi joined the excavation in 2022, his daughter drove up with her mother. Ertl invited her to dig and asked if she had any experience in the field. A silly question, she nodded affirmatively and adeptly joined the others digging a trench. Project member Ikari Yoko and her daughter Anna have dug at the

site most years. To complete the circle of parent-archaeologists at Suwahara, Corey Noxon brought his daughter for several days this year.

For decades, scholars have drawn attention to the ways archaeologists have perpetuated gender stereotypes and a male-centered view of the past (Conkey and Spector 1984, Matsumoto 2017). To rectify this, some have called for greater gender diversity in academia and at excavation sites.⁽³⁾ Extending this argument, one might say that archaeologists have also been biased toward able-bodied adults. Largely absent are the elderly, the physically and mentally disabled, the sick, injured, or pregnant, and (of interest here) children. In contrast, children are abundant in ethnographic writing, as many daily activities and periodic rituals revolve around children and their development. In the essay “The Archaeological Study of Children,” Jane Eva Baxter (2015) illuminates the issue writing, “I am only suggesting in the present, moms and dads, aunts and uncles, grandmas and grandpas all seem pretty certain that children are important, but only some of us seem to think that children were important in the past.”

Despite recognizing the need for (gender-based) diversity, children (and their mothers) have not been visible at archaeological digs. Certainly, children are considered an important audience for archaeology, with school groups targeted for specially crafted site visits and “kid digs” (usually not held on actual sites). Not written about enough, women archaeologists generally have to put their careers, or their motherhood, on pause (Gero 1994), or they have to find ways to incorporate their children into archaeological excavations. Fortunately, there have been recent efforts to share these struggles and provide support for new, expectant, or hopeful mother-fieldworkers (Hoag and von Jena 2025).

(3) The Suwahara excavation is no exception. In 2022, one of Ertl’s student volunteers astutely wrote in her journal that women made up half of all participants and guests to the site that year, but all the archaeologists and decision-makers at site were men: namely, Ertl, Yoshida, and Kobayashi.



Figure 9: Closeup image of the “miniature” pot discovered in the trench PJ3. This photograph was taken for Anna Ikari, for her to make a drawing of the pot for her summer research project. (27 August 2024)

Children are absent from Jomon archaeology, with a few exceptions (Yamada 2014). At Suwahara this year, for example, one of the most unique finds was a small pot found in the trench ST3 just outside of PJ1 (Figure 9). This appeared to be a “miniature pot” (*minichua doki*) and the pointed ends reminded one student of the rims of the decorative flame pottery (*kaen-doki*) found in Niigata Prefecture. Its underside was curved with no flat base to rest upon, leading another to ask if this might be a lid to another pot. After some contemplation, Kobayashi said that this pot was not “miniature,” because there are no corresponding full-sized pots. He suspected it was container for mixing pigments or lacquer for painting. To confirm this on site, Kobayashi carefully checked the surface while washing off the dirt (no usage traces were found). Miniature or not, none of the adult-archaeologists at Suwahara thought to consider that this might have been a bauble, a knick-knack, or a plaything created for, or perhaps even made by, children.

In North American archaeology, researchers of miniature vessels have explained their crude craftsmanship as an indication that they are children’s toys or

rudimentary copies of household ceramics made by children (Kraft 2016; Kamp 2001). These ideas are not entirely absent in Japan. For example, the Chino City Togariishi Museum of Jomon Archaeology (Nagano) includes a display of “poorly made pottery” (*heta-na doki*), which compared to “well-made” (*jōzu-na*) versions, are thought to be technically unskilled and do not follow established design patterns. The museum staff interpreted these as crafted by people learning how to make pottery, or more directly as a “facet of childrearing in the Jomon period” (*Jōmon-jidai no ko-sodate no ichimen*).⁽⁴⁾ This passive position of children (e.g., as raised by adults) is further evident in illustrations or educational texts, where most activities are conducted by adults. When children are depicted, they are being cared for by adults, accompanying adults foraging, observing adults preparing food, or assisting adults with household chores. Only rarely are Jomon children illustrated engaged in play or childlike activities appropriate to the Jomon period (for an example, see illustration by Aki Sahoko in Koyama 2003: 108).

In the present-day, our children at the Suwahara excavation could also be portrayed through frames of care or childrearing. They do not come to the site of their own volition, and once there they are encouraged by their parents and other adults to participate in some capacity. They may be encouraged to dig alongside adults, asked to think about how pottery was made, or told to stand back and watch. However, our children are autonomous individuals who, with little knowledge or interest in archaeology, engage with the site and participate in activities that are meaningful to them, even those that are unwelcome to their archaeologist-parents. Moreover, the children at Suwahara make adults do things that they might otherwise never do while on site, and only some these activities could be framed as childcare.

(4) Cited from online article, “Poor skilled pottery” (*heta na doki*) on the website of the Chino City Togariishi Museum of Jomon Archaeology (1 April 2022) <https://www.city.chino.lg.jp/site/togariishi/poorskilledpottery.html> (Accessed, 21 February 2025).



Figure 10: Elora Noxon and Anna Ikari are doing their best to ignore Corey Noxon after the two returned after an afternoon adventuring around the neighborhood in the rain. (25 August 2024)

In late August, we were joined by Elora Noxon (13 years old), and Anna Ikari (10 years old) for several days. Both came at the tail end of their summer vacations: Elora visited because her siblings and mother were already back at school, and Anna came with her mother directly from vacation in Fukuoka, insisting she was going to do her yearly school research project (*jiyū kenkyū*). The two of them hit it off. They had sword fights with the bamboo poles used to cover PJ1 at night, they disappeared for hours to the nearby stream and fields (Figure 10), and they sometimes did archaeological work together. To escape the heat, Anna insisted on filling up an inflatable pool so that the two could play together away from the dirt and parents. Seeing how well the two got along, the adults at Suwahara conceded when they pushed for a barbeque after a long day of work.

For Anna's summer research project, she decided to showcase Jomon pottery. She collected photos of herself digging at the site, washing pottery, holding a plan illustration, and looking through the total station. Digging, she found two pieces from a *suienmon*-type pot handle that she was able to fit together after some

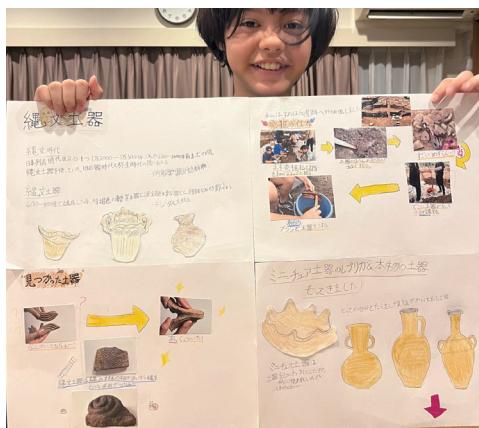


Figure 11: Anna Ikari holds a poster presentation for her summer research project. The poster includes a short summary of Jomon pottery, photos of pottery she found at Suwahara, introduces the steps involved in excavating pottery, and finishes with a drawing of “her” miniature pot. (Photo by Ikari Yoko, 1 September 2024)

manipulation. Looking at pottery she might draw for her project poster, she selected a couple pieces from the day’s finds. One had typical cord-marked patterns, and another had a spiral pattern that she said, “looks just like a cinnamon roll,” or maybe a snail. Of all the pottery on site, Anna was drawn to the “miniature” pot with a pointed rim. She struggled to draw this pot and decided to make a replica out of clay. While doing this, she noticed that it fit neatly in the palm of her hands and that the points fit perfectly between her fingers when she grasped it. She tried to replicate some of the other potsherds, but this was the only one she managed. Procrastinating until the last minute, Anna completed her research project late the night before the deadline at the start of fall semester (Figure 11).

There is no evidence whether this “miniature” pot was a container for mixing pigment, an ornate lid, a vessel for some unknown rituals, a facet of Jomon childrearing, or a child’s attempt to replicate Jomon pottery. What is certain, however, is that we adult-archaeologists might never have considered the place or role of children in the design and production of Jomon pottery had it not been for

the children who joined the Suwahara excavation.

Participating at Nutaba site

Located twenty minutes by car from Suwahara, Nutaba site is a Middle-Jomon period settlement covering several rice fields on a ridge above a small tributary of the Omu River in Mukawa, Hokuto City, Yamanashi. In 2023, Sano Takashi brought the Suwahara team to Nutaba to see the excavation run by the staff of Kayabun (Kayagatake History and Culture Institute). Nutaba was excavated for a farmland improvement project to expand the surrounding rice fields. There were several Heian period houses in the lower fields, and a Jomon settlement in the upper fields. Sano Takashi told us that they plan to work year-round until August 2024. The following sections present John Ertl's fieldwork at the Nutaba excavation, describe the on-site meeting (*genchi setsumei-kai*) at Nutaba, and discuss the role of these meetings in archaeological education.

Reappreciating the role of the feature photograph

For several days in June and July 2024, Ertl joined the Nutaba excavation as a participant volunteer to observe the ongoings and receive hands-on training. Most of the Kayabun staff work both on site and at the archaeology laboratory, and Ertl had previously met most of the team in their other roles. On any day, there were about fifteen people working in groups led by Sano and two other archaeologists. The work included surface surveys, detailed digging of pottery, measuring and collecting remains, drawing illustrations, and cleaning features for photographs. For most of June and July the team was split into one group excavating a large pit dwelling feature from discovery to final documentation and another excavating of a large group of stones (*shiki-ishi ikō*) and pits beneath them.

Ertl's fieldwork at Nutaba site provided up-close observations of the process of excavating and documenting pit dwellings. We previously contemplated the

rationale behind “feature photographs” (*ikō shashin*) (Ertl, Yoshida, and Ikari 2022), which are carefully created at sites and published in site excavation reports. This essential documentation provides a record of an intermediate or “finished” state of a pit house, trench, ditch, or group of stones. These photographs are intended to represent archaeological features in their most basic, original, or complete form and may be used to confirm the deposition of artifacts. Their role in archaeological excavation, we posited, is to provide clear endpoints that allow the team to dig confidently knowing which parts to conserve and which to remove. We also pondered potential drawbacks of this system and the confidence it provides. We questioned how this goal of making nice photographs might cause one to miss out on other potentially revealing facets of an archaeological feature.

To locate a pit dwelling, the Kayabun team first lowered the ground in a 10 x 10m grid, looking for clusters of pottery remains. Where pottery was found, the surrounding area was surveyed to determine the general boundaries of a pit dwelling. Two perpendicular section belts were established, dividing the circular pit into four quadrants. The team quickly removed the earth and smaller pottery sherds, skillfully leaving larger artifacts suspended on pillars of soil. From the center of the pit, they dug through the black soil to reveal the yellow-brown floor, which they followed outward to identify the walls of the pit.

With the edges of the pit identified, the first stage of documentation took place. The section belts were “finished” by cutting out a triangular segment from each belt (Figure 12), thereby allowing the entire length to be documented. Section drawings and photographs were made, after which these belts were removed.

The team then prepared the pit dwelling for the first set of feature photographs. They cleaned and washed the pottery and stone tools, removed any loose dirt and footprints, and sprinkled water over the pit and surrounding area (Figure 13). The site archaeologist took photographs: one set with a drone from above, followed by close-ups of individual remains. Some of the team made illustrations of large



Figure 12: Excavation of a pit dwelling feature at Nutaba site in Hokuto city (Yamanashi). Perpendicular section belts are being prepared, and the significant remains are left in place as the walls and floors of the pit dwelling are revealed. (25 June 2024)



Figure 13: Remains of a pit dwelling at Nutaba site in Mukawa, Hokuto (Yamanashi) immediately before drone photographs were to be taken. All the large size pottery and other significant remains were conserved in situ for the sake of this photograph. Several people (left side) are picking up loose soil that might intrude in the aerial image. Water was poured over artifacts and the surrounding site (right side) to improve the contrast of the image. (3 July 2024)



Figure 14: The remaining postholes, pits, and remaining features are excavated before final feature photographs are taken at Nutaba site. (17 July 2024)

pottery, after which the remains were tagged and removed as their locations were documented with the total station. Lastly, the floor was fully revealed by digging out postholes, pits, and other features (Figure 14). The outlines and cross-sections of the pit and postholes were measured. After cleaning the site again, the site archaeologist took a final set of photographs. Confirming that there were no adjacent features, the pit was later filled with the dirt excavated from other parts of the site.

Making more than feature photographs

The fast pace of rescue excavations like Nutaba leaves little time for reflection or hesitation. Over the course of a year, over sixty pit dwelling features were excavated. This is only possible because Kayabun staff follow clear protocols for identifying, revealing, and documenting the various elements. The experienced staff appeared confident knowing where to dig, when to stop, how to document their work, and what to do next. This was aided by open communication among team members and the site archaeologists, as they freely ask questions and

comment on each other's progress.

Notably, however, their confidence (e.g., to turn a pit dwelling into a feature photograph) did not make them inflexible. Memorable from this fieldwork was how the Kayabun members expressed self-awareness that their approach was only one way to engage with an archaeological site. When they demonstrated digging techniques or taught how to notate illustrations, Ertl was told more than once, "This is just the way we do it here [in Hokuto]," implying that there are other ways to achieve similar results. One day, a man digging out a pit next to Ertl asked what it was like to work at an excavation like Suwahara where there is no need to rush, wondering how it might improve his understanding of Jomon archaeology.

Equally memorable was Kayabun's open-mindedness toward visitors. One day the site was visited by a group including Mochizuki Akihide, director of the free magazine Jomon Zine (*Jōmon-jin*). As they were shown around the site, team members would stop to chat with the guests and talk about the nearby remains. One showed the guests a grinding slab and told them to feel how smooth it was. Jumping into the pit, they took turns stroking the stone with one garnering a laugh saying, "It's like touching the inside of a thigh" (*momo-ura wo sawatteru-mitai*) (Figure 15). After this, another member of Kayabun pointed to a headless *dogū* (clay figurine) that was partially covered by a large piece of broken pottery. She mused that whoever put it there seems to have "put a blanket over it" (*futon wo kabuseta mitai*). The guests joined in, with one saying the Jomon people were probably afraid the *dogū* would catch a cold.

Visitors were welcome to work at Nutaba site under supervision of the Kayabun team. At the same time, they had no expectations for how we might interpret the site, nor were there attempts to curtail our experiences or the memories we might come away with. Some visitors leave with little more than sore knees and a sunburn, while Mochizuki might get a story for his magazine, or Ertl might learn new skills to use at Suwahara site and take back a few anecdotes to include in this report.



Figure 15: Visitors to the Nutaba excavation take turns caressing a grinding stone and commenting on its smoothness to Kayabun staff members. (27 June 2024)

Japanese public archaeology and the *gen-setsu*

One of the hallmarks of Japanese archaeology is the *genchi setsumei-kai*, translated as “site explanation meetings” (Okamura 2011: 83). At these events, the public is invited to view an archaeological excavation in progress. Usually abbreviated as *gen-setsu*, some speak of it proudly as a distinctive feature of Japanese archaeology and a rare practice worldwide. One implication of this pride is that *gen-setsu* might be exported to the rest of the world. Another undertone we have heard more than once is that archaeology centers in Japan have been actively engaged in “public archaeology” long before the concept was imported in the 2010s (Matsuda and Okamura 2012).⁽⁵⁾

(5) Okamura Katsuyuki has pointed out that although *gen-setsu* are thriving in many places, this led to overconfidence and over-optimism on the part of Japanese archaeologists and heritage specialists (2011: 83). As an analysis of the current situation, Okamura is probably right. In a surprising turn, the organization to which Okamura belonged was recently disbanded. Osaka City determined to disband the Osaka City Cultural Properties Association at the end of March 2025, as a part of broader restructuring in the city. This was enacted despite resistance from communities related to archaeology and



Figure 16: Archaeologist from Hokuto City Board of Education provides explanation of a pit dwelling feature during the Nutaba site *genchi setsumeikai*. As standard equipment, the archaeologist speaks through a megaphone held in one hand and holds a long stick for pointing in the other. (24 August 2024)

The format of *gen-setsu* is well-established. A handout outlining the excavation project is created and distributed to participants. A reception desk is set up and excavated artifacts are placed on nearby tables. Simple fences are placed around the archaeological features under investigation and planks laid down for easy walking and to designate the route to be taken. Where possible, explanatory boards are set up at significant archaeological features. The archaeologist of the research institute explains the major features with a long stick and a microphone so that as many people as possible can hear.

This format was the same for the *gen-setsu* at Nutaba site held on August 24, which was conducted by the Hokuto City Board of Education and the Kayagatake Institute of History and Culture (Figure 16). We were invited by Sano Takashi, and it was natural for the Suwahara team to attend. Several former students from Chuo University who made plans to join in the Suwahara excavation came specifically on

history. https://www.occpa.or.jp/occpa_kaisan.html (Accessed, 15 February 2025), <http://osakarekkakyo.blog.fc2.com/blog-entry-323.html> (Accessed, 15 February 2025).

that weekend. With the parking lot filled to capacity, the event was considered a success. Reactions were also positive, as one of the Morioka University students who joined a *gen-setsu* for the first time wrote in her journal, “The site was so attractive that it would be a shame to see it turned into rice paddy fields soon.”

Despite the ubiquity of the *gen-setsu*, little has been written on its origin and history. *The Fifty-Year History of the Law for the Protection of Cultural Properties* published by the Agency for Cultural Affairs states:

Genchi setsumei-kai were initiated by the Nara National Research Institute for Cultural Properties during the excavation of the Asuka-dera Temple site in Nara Prefecture in 1956. Since then, the institute has recommended such meetings in its training courses. Over the next 25 years, the *genchi setsumei-kai* became a common practice and in recent years it is not unusual for thousands of people from a wide range of locations to attend. (Agency for Cultural Affairs 2001: 290)

From 1956 to the mid-1970s, there was a rapid increase in the number and budget of rescue excavations, and archaeological centers (*maizō bunkazai sentā*) were established throughout the country to oversee these excavations. However, there is little data on this period (Agency for Cultural Affairs, Monuments and Site Division 2022: 5) that might shed light on how and why *gen-setsu* became “a common practice.” Even an article on the “Current status and problems of *genchi setsumei-kai*” (Kawakami 1995) is limited to information on *gen-setsu* held after 1974 by the Archaeological Institute of Kashihara, Nara Prefecture.

The gen-setsu in archaeological education

In the 1990s, when Yoshida began studying archaeology, *gen-setsu* was already well established. Before the internet, information on *gen-setsu* was obtained

through noticeboards at archaeological laboratories or by word of mouth. Archaeology students were encouraged to attend these meetings, as they were one of the few opportunities to learn about excavations firsthand. This contrasted with the archaeology faculty, who are sometimes invited to rescue excavations as academic advisors. Other researchers known by the staff involved in rescue excavations may also visit at their convenience. But students and early career archaeologists are naturally not able to visit excavations as they like, making *gen-setsu* an important educational resource.

Yoshida attended *gen-setsu* held near his home as much as possible. At a rescue excavation for the construction of a motorway, a small bronze bell (*dōtaku*) from the Yayoi period was discovered and was reported in the local newspapers. Yoshida visited the *gen-setsu* of the site, learning about the process of excavating the bell. Later, in a small-group seminar, the professor asked the students if any of them went to this *gen-setsu*, and Yoshida was the only one to raise his hand. The professor said, “This is the only student here who is qualified to enter graduate school,” which was clearly a bitter comment toward the other students. In another example, the discovery of a vermilion-lacquered wooden coffin surrounded by many bronze mirrors at the Kurotsuka burial mound in Nara Prefecture made headlines. One graduate student suggested attending the *gen-setsu* and several students, including Yoshida, drove the long distance from Aichi to Nara Prefecture overnight to join the morning session. There, our group was interviewed by a reporter from a weekly magazine who was surprised to learn we had come from Aichi Prefecture and asked about our motives.

As for our excavation at Suwahara, visitors have been given “bespoke” *gen-setsu*. Acquaintances of Kobayashi Ken’ichi, for example, visit Suwahara at their convenience, listen to Kobayashi’s explanations, and exchange opinions on the archaeological features and findings. The older of the Chuo University graduate students, Narabu Hiroki, had previously worked at an Archaeological Research

Center and hoped to work in that type of institute again after completing his graduate studies. When undergraduate students from Chuo University participated in the Suwahara excavation to earn their class credits, Narabu was in charge of giving them an overview of the site. For Narabu, explaining the site functioned as a kind of rehearsal for *gen-setsu*, and being a good archaeologist seems to include being able to give a good explanation of excavation sites. When the landlady at Shimizuya Inn visited with her daughter, his posture and the details of his choice of words were different, but the overall way he explained was the same. *Gen-setsu* is embedded within Japanese archaeology as a norm to be practiced as a matter of course among academic researchers, local archaeologists for rescue excavations, and students. Subsequently, Narabu was hired by a Prefectural Archaeological Center to begin in April 2025.

Multiscalar Digital Documentation of the Suwahara Excavation

The 2024 excavation season incorporated a comprehensive multiscalar approach to digital documentation, primarily conducted by Corey Noxon. To capture broader aspects of the dig, timelapse videos were taken to show the overall work being done at the site, and a drone was used to take videos and overhead images of the excavation work and general progress made over time. For more focused documentation, photogrammetry scans were taken covering the entire excavation area with others focused on PJ1. Additional digital photography was used by Kobayashi to document specific features of the site, whereas Ertl and Yoshida took images from an ethnographic standpoint to record various activities at the site, and the total station was used to document the location of remains. On its face, the extent of this documentation should appear a significant undertaking. Underneath, there was a degree of effort and planning that went beyond the capture process itself that does not seem obvious at first. The following looks past the captured data itself and describes the set-up, planning, and overall management involved in making

these digital captures possible.

Onsite

Timelapse: setup, takedown, and troubleshooting

At the site each day, the first task was to set up the camera for a timelapse, and the final task was to take the camera down. The aim was to capture the entirety of the day's work. A GoPro Hero 7 black was used in timelapse mode and took images in raw format every ten seconds. Due to storage constraints, the timelapse mode was chosen over making a video recording. A timelapse kit was used, which allowed an external battery to be connected to the camera while shielding the ports from rain.

The camera was mounted to a tall monopod, the BiRod 7500, to obtain a clear view of the activities throughout the site. Finding a proper location for the camera took some trial and error. The camera location could not interfere with work, but it also needed to be close enough to provide a beneficial view. An initial location on the east side of the site was shifted to the opposite side next to a tree. Stones and sandbags were placed at the base of the monopod to keep the positioning of the camera fairly consistent day-to-day.

The timelapse recording had its share of problems unfortunately. The summer temperatures reached nearly 40 degrees causing the camera to overheat and prematurely stop recording. From the distance, it was difficult to see if the camera had shut down, which meant that we were only aware of the issue at the end of the day, leaving large gaps in the record. To prevent this, a couple of makeshift enclosures were made to cool the camera (Figure 17). The first enclosure used two small plastic baskets to create a well-ventilated, shaded enclosure. The materials including basket, tape, zip ties, and cutting implements were purchased at a local discount store. This prototype was somewhat awkward to setup, but it was successful in allowing the camera to record throughout the day. Issues with the case obscuring the field of view and another overheating incident prompted the creation



Figure 17: The first makeshift container created by Corey Noxon to shade the timelapse camera to prevent overheating. (19 August 2024)

of a new enclosure. The second one used a white plastic box with a hinged lid and a small portable fan was attached to provide active cooling. The fan was purchased at an electronics shop and the case from the previous discount store. This version was easier to set up, provided an unobstructed view (for the most part), and the active cooling ensured the camera did not overheat again.

Drone: planning, timing, and near disaster

In previous excavation seasons drones were used to make photogrammetry scans of the excavation site and surrounding areas. Using a drone is fairly simple with the operator being outside of the excavation area, but the primary drawback is that drones cannot clearly show undercut sections of trenches or self-occluded areas. For 2024, the drone was used to make video recordings and overhead images to document the day-to-day progress. The aim of these videos was to capture various activities of the people working at the site and their interactions with each other. Ninety videos were taken of a wide variety of activities: uncovering the site, dig preparation and meetings, excavation work, site documentation, and covering the



Figure 18: Drone and landing pad. Black tire marks can be seen from the near disaster when a car drove over the drone as it was preparing for takeoff. (22 August 2024)

site at the end of the day. These were captured on different days, from different angles, and used different cinematic techniques.

Safety is paramount with drones. The area around the site has a number of obstacles that need to be accounted for including trees, buildings, powerlines, people, and cars. This danger was made clear in an unexpected way one day. Usually, the far side of the parking area was used for takeoff and landings because it was often clear of people. This ad hoc system had worked reasonably well until late one morning. With the drone set up on the landing pad ready to take off, a vehicle pulled into the site and drove directly over it, the driver oblivious to what happened. Fortunately, the drone slipped between the tires and was undamaged by the incident, but a tire track on the corner of the launch pad was a testament to just how close we were to disaster (Figure 18). Undoubtedly, a permanent marked-out location further away from pedestrian and vehicular traffic should be utilized.

Photogrammetry: site preparation and weather concerns

Similar to the 2023 field season, custom made 3D printed machine-readable

photogrammetry markers were used as ground control points for scans (Ertl, Yoshida, and Noxon 2024a: 24). Markers were again placed on the exterior of the excavation area, and several additional markers were added inside hoping to obtain more accurate registrations of the markers' elevations. The markers functioned without any major issues, only requiring the target tops to be wiped off and tightened on occasion. After several days of rain, one of the markers became loose and was removed, but this did not cause any significant impairments for scan alignment.

The main toolkit for photogrammetry was a Sony α 7R IV camera with a powerful AD1200 Godox flash unit and ring light. The weather conditions required a degree of flexibility however with rain the major obstacle. Timing scans at an excavation site is always challenging. It needs to be in a presentable state, with people and equipment cleared from the area being photographed. For Suwahara, scans of the entire site would typically be done at the very end of the day. In such instances, the portable ring flash was used to compensate for the fading sunlight. Even with good lighting conditions, the flash lit areas obscured by shadows. The shortcoming of the strobe system is that it is not resistant to rain.

There were several instances this year when a scan needed to be completed quickly. Starting with the flash system only having to remove it when rain began would leave the images highly inconsistent, causing discoloration and alignment issues in the final scans. As such, there were several occasions when we decided to forego using the flash from the outset. This required alternative camera settings with slower shutter speeds, lowering f stops to increase exposure (reducing the depth of field), and increasing ISO settings. Luckily all scans were completed before any heavy rain, but raindrops on the ground and especially on stone features provided an additional problem (Figure 19). As the rain continued, more dark spots from the rain would accumulate. These features would be photographed as soon as possible to limit changes to their appearance in case the rain intensified.

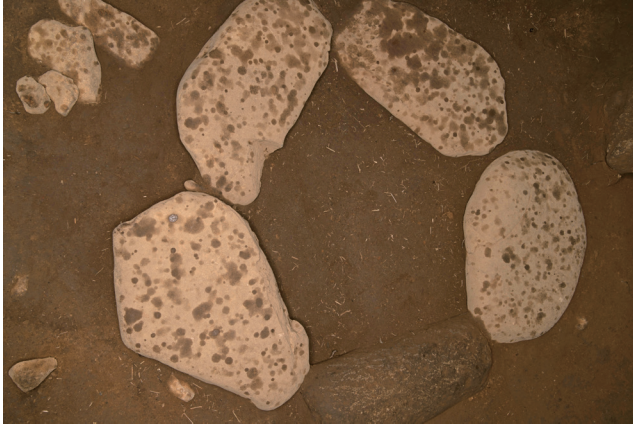


Figure 19: Rain falling on hearth stones at PJ1. (24 August 2024)

Belt scanning and the discovery of suienmon-type pottery

An unexpected change that came up this year involved repeated fast-paced scans of the central belt section. The belt had been left intact to provide a stratigraphic cross section running along the central portion of the pithouse. As it was excavated, a large amount of pottery including an ornate *suienmon*-type pot was uncovered. It was located just east of the hearth and embedded in layer 2b, consistent with the other major pottery remains in PJ1. To better understand the context and deposition of these remains, it was decided to conduct multiple scans of the belt as each new layer of remains was uncovered. This recorded the position and orientation of each artifact prior to being removed.

This process was similar to what Noxon had conducted at the Sugisawa site in Shiga prefecture (Yano et al. 2024), with some notable improvements. At Sugisawa photographs were taken and printed out before each layer of artifacts were removed. The artifacts outlines and the artifact numbers were notated on the printout prior to the removal of artifacts. At Suwahara, artifact tags were prepared and placed directly on the artifacts to be removed. The belt was photographed,

capturing the artifacts and their tags from different positions, helping to ensure that the context of the artifacts and their associated identification codes would be clearly recorded. This process provided images in which artifact and tag pairings could be identified, but the process itself was also significantly faster, helping to lessen the impact that scanning had on the speed of the excavation.

Offsite

When it comes to digital recording, the end of digging for the day does not mean it was the end of work for the day. While most excavation tools can be secured on site, items like the total station, camera gear, and computers needed to be transported back to lodgings. While a relatively minor issue, making multiple trips up and down stairs carrying heavy equipment back to rooms for safekeeping can be an unexpected additional task. This is just the first step, however.

Battery management, data handling and processing

As access to electricity on site is limited, most of the battery powered equipment needs to be charged at night. Batteries for the drone, the timelapse camera, the photogrammetry camera, and the flash all had to be charged. Different batteries require different chargers, sometimes taxing the number of available power outlets in a hotel room. At maximum capacity, Noxon had two computers, an external hard drive, a charger for the flash unit, a charger for the drone batteries, a charger for the camera batteries, multiple powerbanks, and a phone all charging at the same time (Figure 20).

The next task was data downloading. Data from the timelapse camera, photogrammetry camera, and drone all needed to be downloaded each day, and this could take over an hour depending on how much data was gathered. To reduce risk of careless mistakes or data corruption, it was necessary to make backups. Data was initially saved to an external SSD drive with SD card copies used as backups. Over



Figure 20: Running out of room. Work for digital documentation is equally intense back at the hotel as it is at the Suwahara excavation. (24 August 2024)

the course of the excavation the external drive began to fill up, at which point another external SSD was purchased. This second drive began to fill up, necessitating the purchase of yet another external hard drive.

We decided to complete the initial processing of the digital data daily, as a way to evaluate the capture process and make necessary adjustments. On site, close to 12,000 images were taken with the Sony mirrorless camera, over 30,000 images taken for timelapses, and another 70 images and 90 videos were taken with the drone. With a significant amount of work and time necessary to process and manage this data from the excavation, several days were set aside specifically for the task, with the only digital capture related activities on site being the setup and takedown of the timelapse camera. These “processing” days often followed larger photogrammetry scans.

Lab Work

Once the excavation finished, the longest and most time intensive portion of the digital work began. Lab work started with additional data migrations, backups, and

general file reorganizations, further processing of recorded data from the site, and the preparation, imaging, and processing of artifacts brought back from the site.

Data download and backup

At the lab, a structured three-tiered storage system was used for working with and backing up data. The primary storage unit was a NAS system populated with large hard drives. Data from the NAS is backed up onto external hard drives set to update daily. With the captured data transferred and backed up, files that were actively being processed were moved to a high-speed drive. Initially external SSDs were used as working drives, and as intensive artifact scanning got underway, this was later shifted to a second SSD based NAS in order to allow multiple computers easy access to shared files.

Timelapse management

Processing the timelapse data was one of the first tasks completed post-excavation. Image sequences were imported into DaVinci Resolve to create a video from the images. Sections were separated by day with short title transitions used to help identify each day. As some of the camera enclosures made for the camera obstructed the view, the footage was cropped within the video editor to avoid distractions, and a similar field of view was targeted as best as possible for each section. Title cards were placed between clips to identify which days were being shown and the clips were combined into a larger video that included the entire set of timelapse recordings.

Excavation scans

By the time the recorded data was brought back to the lab, most of the captured images had undergone initial processing. This included an initial denoising of RAW images using DXO PureRAW, the application of linear color profiles and white

balance and exposure adjustments in Adobe Lightroom, and initial camera alignment and meshing done in RealityCapture. These scans then had to be georeferenced and scaled, trimmed, and simplified in RealityCapture.

Initial alignments were good, however, despite the addition of more coded targets at different elevations on site, some degree of drift was still present when comparing the calculated control points with the input values. This became visibly noticeable when the central belt scans were combined, with marker locations occasionally being separated by a few centimeters. As the markers were beyond the bounds and on the periphery of the targeted scan area, the impact of this drift appears less impactful in the targeted area. Initial tests have been attempted using Metashape to see if more accurate alignments can be made, but are inconclusive at this time. Prior to combining and aligning the 3D scans, the scans needed to be trimmed of extraneous geometry, simplified to more manageable polycounts, and retextured by projecting the textured geometry of the high resolution models onto the low resolution models. Next, the alignment of scans was done by importing the scans into Blender and manually adjusting the models to ensure the relative positioning between models was as close as possible. Aligning the belt section scans allowed for the artifact scans to be properly positioned and oriented.

Artifact scans and alignment

The most intensive part of the digitization process at the lab was scanning the artifacts recovered from the belt section of PJ1. While 118 separately named artifacts were brought back to Ritsumeikan University, many of those artifacts were broken while being excavated or cleaned, significantly increasing the number of necessary scans. In total, 158 separate scans were completed, with some small fragments under 1cm in diameter. Previous efforts at scanning a large amount of artifacts had been found to be very time consuming. Due to this, a semi-automated scanner was built to streamline the process. In total, 26,400 images were taken.

While most artifacts were scanned uneventfully with this rig, there were two types that caused issues. The first were very small potsherds, which could not be scanned easily as the rig involved clamping them in position. An alternative approach was devised that involved taking images of multiple sherds set on a clear acrylic panel, allowing them to be photographed from above and below without readjusting their positions. The downside was the glare from the acrylic could not be fully mitigated by cross polarization. The second artifact was the large intricate *suienmon* handle. The intricate details of the pieces and the self-occluded surfaces due to its hollow design posed significant challenges in scanning. A total of 2216 shots were taken for this one piece alone, and even with this many images some interior portions were still poorly captured.

The final step is to combine the scans together, showing clear, detailed scans of the artifacts in 3D space, clear of the surrounding soil. Combining all of the excavation scans and artifact scans at full resolution would crash most systems so simplified versions need to be imported instead. The artifact scans need to be processed similarly to how the earlier excavation scans were done, but simplifying the model geometry to a lower polycount that still retains a close geometric match to the original raw scan, and then retexturing these simplified scans by reprojecting the textures from their corresponding high resolution models. For initial placement, using a VR headset and controllers was a very natural way to align the artifacts with the base excavation scans. Reference images showing the general positioning of the artifacts are used to identify where the artifact scans should be placed, and the artifact models will be positioned to match the excavation scan positioning as closely as possible. While initial work on this has been done, this process is still underway as of the publication of this report.

Conclusion

As an ethnography of archaeology, these reports often shift focus and move to

locations far beyond the confines of the Suwahara excavation site. Our approach to documentation is to provide an honest record of the different fields of activity where our “archaeological knowledge” is being produced. These reports serve as evolving accounts of the interactions, sightings, and conversations that have helped us understand Suwahara site and, we hope, the Jomon people who once lived there. Our decision to focus on these often-unreported episodes of archaeological research, is based on our belief that they work their way into our embodied perspectives and personal biases, whether we are cognizant of it or not. As such, these experiences we expect will eventually filter into our site excavation report on Suwahara as well as our reconstruction of a Middle Jomon pit house at Umenoki site.

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Bibliography

- Agency for Cultural Affairs. 2001. *Fifty-Year History of the Law for the Protection of Cultural Property*. (*Bunkazai-hogo gojū-nen shi*) Tokyo: Agency for Cultural Affairs.
- Agency for Cultural Affairs, Monuments and Site Division. 2022. *Statistics on buried cultural properties, 2021*. (*Maizō bunkazai kankei tōkei shiryō: Reiwa 3 nendo*) Tokyo: Agency for Cultural Affairs, Monuments and Site Division.
- Baxter, Jane Eva. 2015. *The Archaeological Study of Children*. Allegra Lab, May. <https://allegralaboratory.net/the-archaeological-study-of-children/>
- Conkey, Margaret and Janet Spector. 1984. Archaeology and the Study of Gender. *Advances in Archaeological Method and Theory* 7: 1–38.
- Edgeworth, Matt, ed. 2006. *Ethnographies of Archaeological Practice: Cultural Encounter, Material Transformations*. Oxford: AltaMira Press.
- Ertl, John. 2021. Survey of Prehistoric and Ancient Period Architectural Reconstructions in Japan. *Japanese Journal of Archaeology* 8: 157–199.
- Ertl, John, and Yasuyuki Yoshida. 2020. Archaeological Craftwork: Ethnography of Archaeology at Suwahara Site, Hokuto City, Yamanashi 2019. *The Hiyoshi Review of the Humanities* 35: 135–170.
- Ertl, John, and Yasuyuki Yoshida. 2021. Archaeological Craftwork 2020: Ethnography of Archaeology at Suwahara Site, Hokuto City, Yamanashi 2020. *The Hiyoshi Review of the Humanities* 36: 37–76.
- Ertl, John, Yasuyuki Yoshida, and Yoko Ikari. 2022. Archaeological Craftwork 2021: Ethnography of Archaeology at Suwahara Site, Hokuto City, Yamanashi 2021. *The Hiyoshi Review of the Humanities* 37: 1–35.
- Ertl, John, and Yasuyuki Yoshida. 2023. Archaeological Craftwork 2022: Ethnography of Archaeology at Suwahara Site, Hokuto City, Yamanashi 2022. *The Hiyoshi Review of the Humanities* 38: 1–39.
- Ertl, John, Yasuyuki Yoshida, and Corey Noxon. 2024a. Archaeological Craftwork 2023: Ethnography of Archaeology at Suwahara Site, Hokuto City, Yamanashi 2023. *The Hiyoshi Review of the Humanities* 39: 1–37.
- Ertl, John, Yasuyuki Yoshida, and Corey Noxon. 2024b. Prehistoric architectural reconstructions in the Koshin-etsu region of Japan. *The Keio University Hiyoshi Review of Social Sciences* 32: 1–50.
- Gero, Joan. 1994. Excavation Bias and the Woman at Home Ideology. In *Equity Issues for Women in Archaeology*. Margaret C. Nelson, Sarah M. Nelson, and Allison Wylie, ed. 37–42. Archaeological Papers of the American Anthropological Association No. 5. Arlington: American Anthropological Association.
- Goodwin, Charles. 1994. Professional Vision. *American Anthropologist* 96(3): 606–633.
- Hoag, Elizabeth A., and Kathleen von Jena. 2025. Kids in the Trenches: Women as Mothers

- and Professionals in Archaeology. In *Mothering and Archaeology: Past and Present Perspectives*. Laura Seifert and Suzanne M. Spencer-Wood, ed. 278–296. London: Routledge.
- Kamp, Kathryn A. 2001. Prehistoric Children Working and Playing: A Southwestern Case Study in Learning Ceramics. *Journal of Anthropological Research* 57(4): 427–450.
- Kawakami, Kunihiro. 1995. Current Status and Problems of *Genchi Setsumeikai*. (*Genchi setsumeikai no genjō to kadai*). *The Bulletin of Kansai University Museum* 1: 237–246.
- Koyama, Shuzo, ed. 2003. *The Family Life of Jomon People* (Second edition: History of Japan, Asahi weekly Encyclopedia) *Jōmon jin no kazoku seikatsu* (*Nihon no rekishi, shūkan asahi hyakka*) Tokyo: Asahi Shimbun.
- Koyama, Shuzo, and Yasuhiro Okada. 2000. *Merchants of the Jomon Period: People who Traded between the Japanese Archipelago and Northeast Asia*. (*Jōmon jidai no shōnin tachi: Nihon rettō to Hokutō Ajia wo kōeki shita hitobito*). Tokyo: Yōsensha shinsho y.
- Kraft, Kayla. 2016. Miniature Clay Pot: An Ancient Toy. *New Jersey Archaeology*. <https://newjerseyarchaeology.wordpress.com/2016/02/04/miniature-clay-pot-an-ancient-toy/>
- Matsuda, Akira, and Katsuyuki Okamura. 2012. *Introduction to Public Archaeology* (*Nyūmon paburikku ākeorōjii*). Tokyo: Dōseisha Publishing.
- Matsumoto, Naoko. 2017. Gender Education and Archaeology. (*Jendā kyōiku to kōkogaku*). In *Japanese Archaeological Dialogues: Seminar on Cultural Resource Studies “Archaeology and Contemporary Society” 2013–2016*. (Japanese archaeological dialogues: *bunka shigen-gaku seminā “kōkogaku to gendai shakai”* 2013–2016). Yasuyuki Yoshida and John Ertl, ed. 167–182. Kanazawa: International Center for Cultural Resource Studies, Kanazawa University.
- Minatoku Isarago-kaizuka Iseki Chōsadan, ed. 1981. *Isarago Shell Midden Site* (*Isarago-kaizuka iseki*). Tokyo: Nippon Denshin Denwa Kōsha, Minatoku Isarago-kaizuka Iseki Chōsa-kai.
- Okamura, Katsuyuki. 2011. From Object-Centered to People-Focused: Exploring a Gap Between Archaeologists and the Public in Contemporary Japan. In *New Perspectives in Global Public Archaeology*. Katsuyuki Okamura and Akira Matsuda, ed. 77–86. New York: Springer.
- Shanks, Michael, and Randall H. McGuire. 1996. The Craft of Archaeology. *American Antiquity* 61(1): 75–88.
- Yamada, Yasuhiro. 2014. *Archaeology of the elderly and children* (*Rōjin to kodomo no kōkogaku*). History and culture library 380 (*rekishi bunka raiburarii* 380) Tokyo: Yoshikawa Kōbunkan.
- Yano, Ken’ichi, Corey Tyler Noxon, Sakoda Keiichiro, Sugai Kaho, Inoue Sumire, Teshima Hibiki, Takahashi Noriyuki, Ishida, Takeshi, Ritsumeikan University Sugisawa Site Excavation Team. 2024. Results of the 2023 excavation at Sugisawa Site, Maibara City, Shiga Prefecture and the 3D reconstruction of excavated burial pottery (*Shiga-ken*

Maibara-shi Sugisawa-iseki 2023 nen-do hakkutsu chōsa seika to doki-kan shutsudo jōkyō no 3D gazō fukugen). Presentation at: Japanese Archaeological Association, May 2024.