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## Mounds and rituals in the Jomon Period

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**ABSTRACT** – *I will examine the possibility that earthen mounds were the result of ritual acts in the Jomon period. In the Kanto district, ring-shaped earthen mounds developed in the Late and the Latest Jomon settlements. While the number of settlements decreased from the Middle Jomon, abundant ritual artefacts have been discovered in settlements and deposits adjacent to the mounds. Burnt soil, charcoal, and burnt bone contained in the mounds could be the remains of feasting. As food processing facilities and vessels increased in the Late Jomon, I assert that the development of feasting led to the formation of the mounds.*

**IZVLEČEK** – *Proučujemo možnost, da so bile zemljene gomile rezultat ritualnih dejanj v obdobju Jomon. V pokrajini Kanto so se okrogle zemljene gomile pojavile v poznih in zadnjih Jomon naseljih. Medtem ko število naselij v srednjem obdobju Jomon upade, je bilo v naselbinskih depozitih in depozitih, povezanih z gomilami, odkritih veliko artefaktov, povezanih z rituali. Ožgana zemlja, oglje in ožgane kosti v gomilah so lahko ostanki gostij. Domnevamo, da je mogoče veliko število pripomočkov pri pripravi hrane in posod v poznem obdobju Jomon povezati z gostijami, te pa z gradnjo gomil.*

**KEY WORDS** – *Jomon; mound; ritual; food; feasting*

### Introduction

In the Kanto plain, ring-shaped earthen mounds developed in the Late and Final Jomon sites (*Ehara 1999; Okimatsu 2005*) (Fig. 1). When the mounds were found in 1991 at Teranohigashi and recognized as dating to the Jomon period, two interpretations were proposed. One is that this site played a role as a ritual center (*Kobayashi 1996*), and the other is that this site was a normal settlement. Most archaeologists now see these sites as normal settlements (*Abe 1996; 2005; 2006; 2007; Ehara 1999; 2005*) for the following reasons: first, most houses in this period were found at a mound site; secondly, rich artifacts, including commodities were uncovered, and thirdly, no other settlement sites were found nearby. The process of, and reasons for building mounds were treated to a lively discussion. In order to clarify the process of mound building, I will first describe the landscape of the sites in the Late

to Final Jomon. The area surrounding Lake Kasumigaura has not been the subject of this study. I will compare the site landscapes in this area, and investigate the reason the mounds were built in the residential area of the Late to Final Jomon.

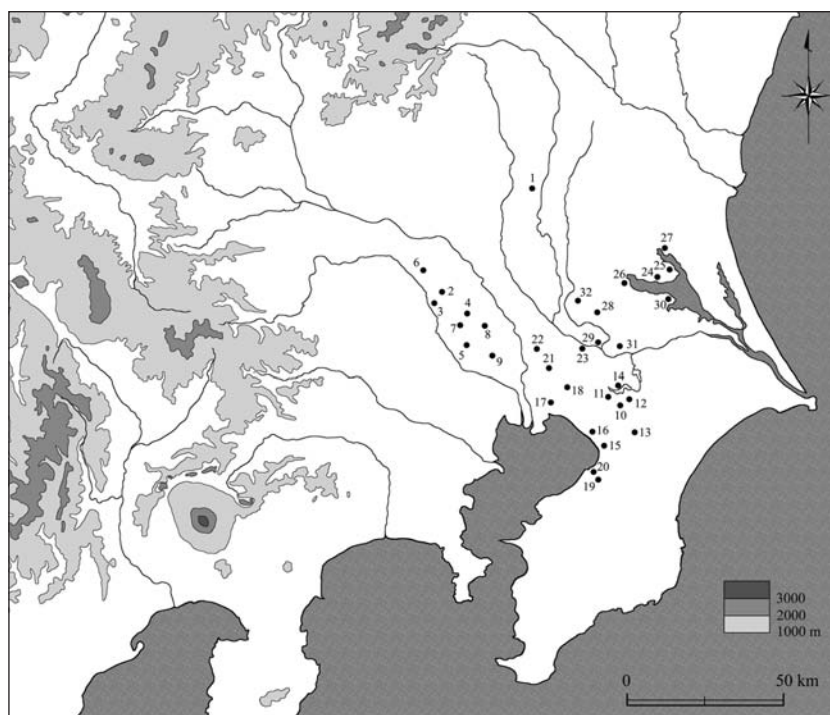
### Settlements in the Late to Final Jomon

*Abe (1996; 2005; 2006; 2007)* asserts that these mounds resulted from an accumulation of deposits from the construction materials of houses, because the structure of houses was not same as in the Middle or early Late periods. Usually, houses in the Middle Jomon are dug into the ground more deeply than those in other periods. Probably for this reason, the number of houses in the Middle Jomon is greatest in the Jomon Period. They have 4 to 5 main posts, and the house pits are relatively deep. On the other hand,

houses in the Late Period have small postholes along the wall, in addition to the main posts. Some archaeologists think that small postholes imply the existence of a mud wall structure (Abe 1996). As the result of the repeated construction of houses, the materials for the walls could have accumulated in the surrounding area of settlements. However, in the western side of Teranohigashi, for example, there are no mounds, even though contemporary houses were found (Fig. 2).

Teranohigashi and Inonagawari are well known as good examples of mounds. Although research on the mounds has focused on the area around these two sites, the other area where the same pottery type is distributed should also be examined. A small-scale excavation was carried out at the Heisambō shell-mound site (Kawashima 2007; Kawashima et al. 2008), which is located by Lake Kasumigaura. Mounds were expected to be found, because the landscape of this site had a shape similar to other mound sites. In conclusion, there is no clear evidence of a mound, such as observed at Teranohigashi, but there is similarity in the point of the landscape of the sites, including the area around Lake Kasumigaura. Most of the mounds are not preserved well, because of cultivation in the later periods. For this reason, it is difficult to define this type of mound precisely. However, it is clear that most settlements in this period formed ring-shaped earthen mounds or something similar. The common characteristics of these settlements with mounds were depressions in the center, mounds, rich artifacts, long-term occupation, and the distribution of structures, such as houses and pits (Kawashima 2008a).

Shell mound sites in the Late and Final Jomon can be used to compare the formation process of the mounds, because shell mounds also have similar forms. Shell mounds were found from the early stage of the Jomon period, but after the Late Jomon, the horizontal shape became circular or U-shaped (Fig. 3). They were mainly made of shells, the re-



**Fig. 1. Distribution of ring-shaped earthen mounds and sites which have a similar feature: 1. Teranohigashi, 11. Inonagawari, 15. Kasori, 24. Heisambō, 32. Maedamura.**

mains of food consumption. Subsistence in the coastal area could have been different from that in the inland areas, but there is a possibility that the style of food consumption was similar.

It is said that the mounds were built after the middle Late period, because houses and pits of the early Late period were found under the mounds. This means that the Late to Final Jomon houses could be found in the mounds or inner spaces. In fact, houses and pits were inclined to be gradually distributed closer to the centers of sites. This tendency is clearly seen at Maedamura (Fig. 4). At most sites, the Final Jomon artifacts, houses and pits were uncovered from the edge of the central depression. This supports the idea that the position of houses moved toward the center of the sites gradually, and that the mounds were made behind the residential area.

In the excavation report on Teranohigashi, the layers consisting of mounds were categorized into two types. One type of layer mainly consists of brown soil with relatively less loam, and contains fragmented bones, charcoal. The other mainly consists of loam, and contains thin layers of dark soil and burned soil. These two types of layer indicate the different processes of accumulation in the mounds. The soil for the mounds could have been supplied at least by digging pits and house pits, and by food proces-

sing and consumption. The soil from the house pits and pits was yellowish loam, which is the basic layer of this region. It has been pointed out that the central depression also provided soil for the mounds, because it lacked the upper layers which should be observed in natural stratigraphy.

In the central depression, while there are few features remaining, rich ritual artifacts were discovered. There are some archaeological changes in this period, which support the development of ritual activities (Kawashima 2008b). Ritual features, such as stone structure and accumulation points of unusual pottery and artifacts were uncovered from the central depression of some sites. These facts imply that the central depression was a communal space and was used for rituals. The mounds may have been formed partially by disposals from house reconstruction. However, this theory is not enough to explain the existence of fragmented burned bones, and increasing numbers of ritual objects in the Late to Final Jomon period at the mounds.

In addition to the development of ritual activities, some other cultural changes are recognized in the

first half of the Late Jomon such as large houses, wooden water reservoirs, and coarse pottery; and communal graves appeared in the transitional period from the early Late to the middle Late Jomon. Of these changes, wooden water reservoirs are thought to have been for food processing, and the coarse pottery is thought to have been as food processing vessels for nuts and acorns. In the next section, I will describe the change in food processing in the Late Jomon, focusing on the wooden water reservoir.

### Food processing facilities – wooden water reservoirs

There are several items which evidence food processing in the Jomon. Of these, wooden water reservoirs (Fig. 5) seem to be most related to processing abundant food, such as nuts and acorns. While it is said that acorns and nuts were the main staples in the Jomon, there are some periodically different uses of these. In the Middle Jomon, chestnuts are characteristic and predominate in the uncovered botanical remains. On the other hand, in the Late Jomon period, the ratio of horse chestnuts rapidly increases.

They are uncovered especially from water reservoirs. The technique of processing horse chestnuts is difficult, because they contain saponin, which is toxic. According to ethnographic research in Japan, it takes at least a few days to bleach horse chestnuts (Watanabe 1975; 1989). In the Jomon period, in order to eat horse chestnuts, efficient processing facilities may have been needed, as it is unlikely they were processed for only one meal.

The structure of wooden water reservoirs also changed in the Late Jomon (Sasaki 2007). A reservoir was uncovered from the Early Jomon. In the earlier periods, the structure of reservoirs was simple and could be used for shorter periods. In the Late Jomon, larger wooden structures were constructed several times at the same point. At some sites,

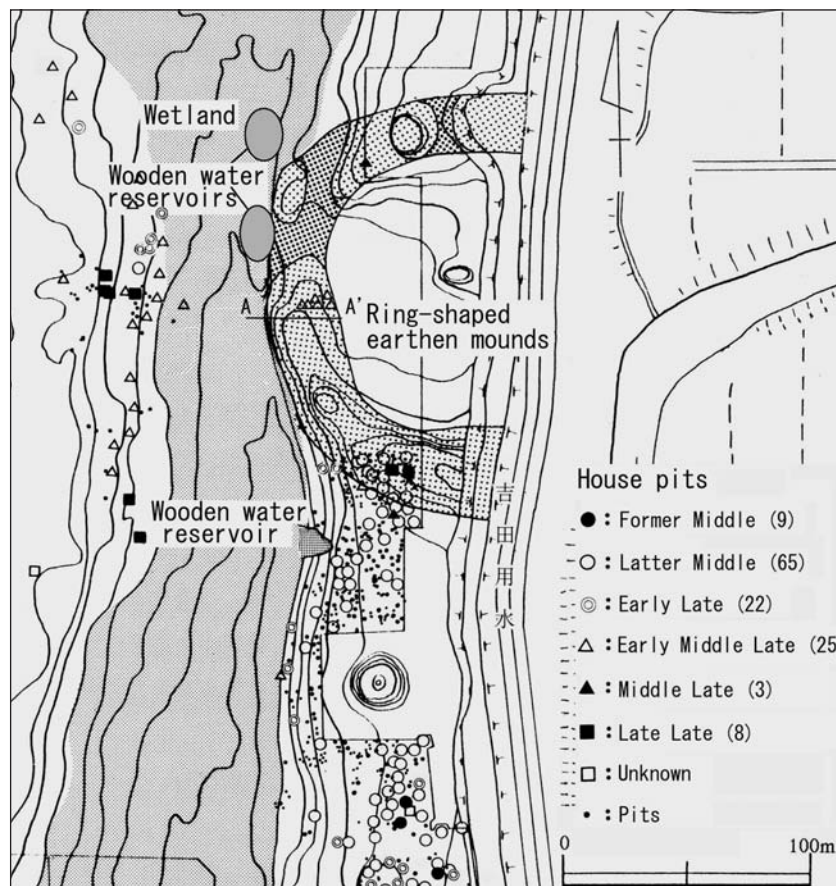


Fig. 2. Ring-shaped earthen mound at Teranohigashi (after Ehara et al. 1997.Fig. 7).

preserved wooden parts are discovered. After the Late Jomon, it seems that the reservoirs were constructed according to a solid plan, with wooden planks, piles, and sometimes a stone pavement, and were maintained. This implies the continuous use of a spring, and may indicate a long-term sedentary village.

The Teranohigashi site shows the difference between the reservoirs of the Middle Jomon and the Late periods. A simple reservoir that belongs to the Middle and the early Late Jomon, was found in the southern part of this site (Fig. 2). On the other hand, in the north of this site, a complex of reservoirs was found, which is thought to have been repaired and reconstructed several times.

I will compare the size of water-reservoirs in the Late to Final Jomon and that of processing facilities for horse chestnuts in contemporary Japan (Tab. 1). In some parts of the mountainous regions of Japan, horse chestnuts were a staple until around World War II. Two processing techniques have been recorded (Watanabe 1975; 1989). One technique, *Kozawashi*, requires a facility called a *Tochidana* and two days to process horse chestnuts. As the other technique, *Tochimochi*, usually suggests that processed horse chestnuts were mixed with rice, it may not be applicable to a comparison with the technique in the Jomon. In cases where horse chestnuts are consumed every day, two facilities are used in sequence. The result of a comparison between the Jomon facilities and contemporary ones shows that the earlier wooden water-reservoir is larger and deeper than the contemporary facility. Although wooden water-reservoirs must have also been used for other purposes, such as to hold drinking and cooking water, leaching plants for fibers, and rituals, the existence of husks of horse chestnuts in a reservoir shows that it was used for processing horse chestnuts. Thus, horse chestnuts could have been used widely and in larger

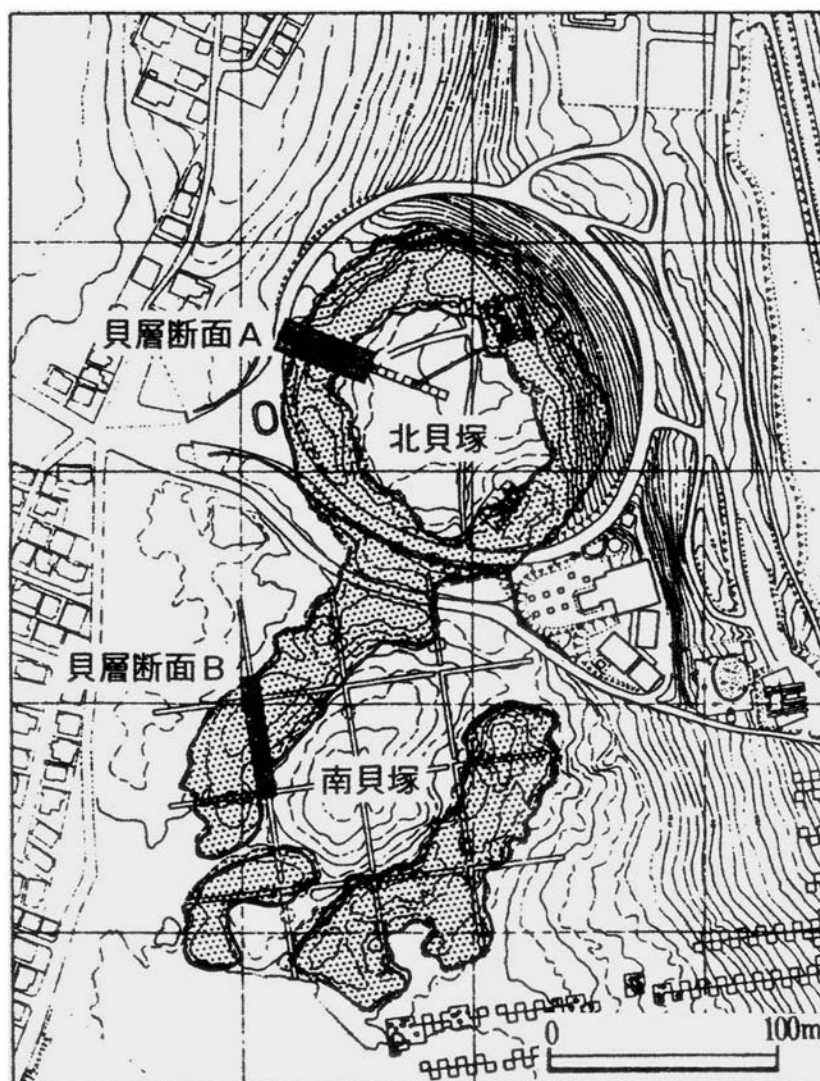


Fig. 3. Kasori shell mounds (after Sugihara et al. 1976.Fig. 1).

amounts after the Late Jomon. Evidence of food consumption should be found at settlements of this period.

#### Food consumption: feasting in Late to Final Jomon societies

In the Jomon studies, techniques of subsistence have been analyzed, but the consumption of food has not been discussed. While the number of settlements decreased after the Middle Jomon, abundant ritual artifacts were discovered from the inner spaces of sites after the Late Jomon. Rich ritual artifacts and the remains of food in the mounds imply an increase in opportunities for mass food consumption such as feasting. Although it is difficult to identify each feast, it is possible to estimate the scale and frequency of feasting from the total amount of feasting remains.

At the Late to Final Jomon sites, there is more evidence of food consumption, such as large fire fea-

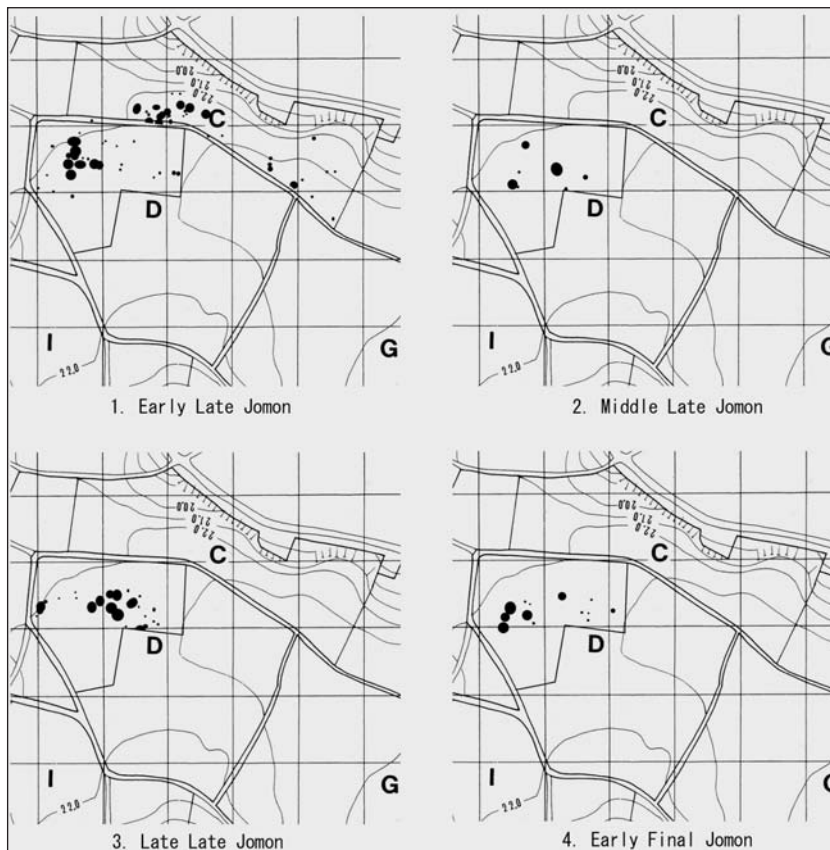


Fig. 4. Distribution of house pits and pits at Maedamura (after Yokobori 1997.Fig. 4).

tures, charcoal and fragmented bones in the soil. It is rare to find animal bones in their original form: they are often excavated in small fragmented pieces, and most are well burned. Although these can not be direct evidence of mass food consumption, these

characteristics are not observed before the Late Jomon. These characteristics are observed at sites with mounds and wooden water reservoirs.

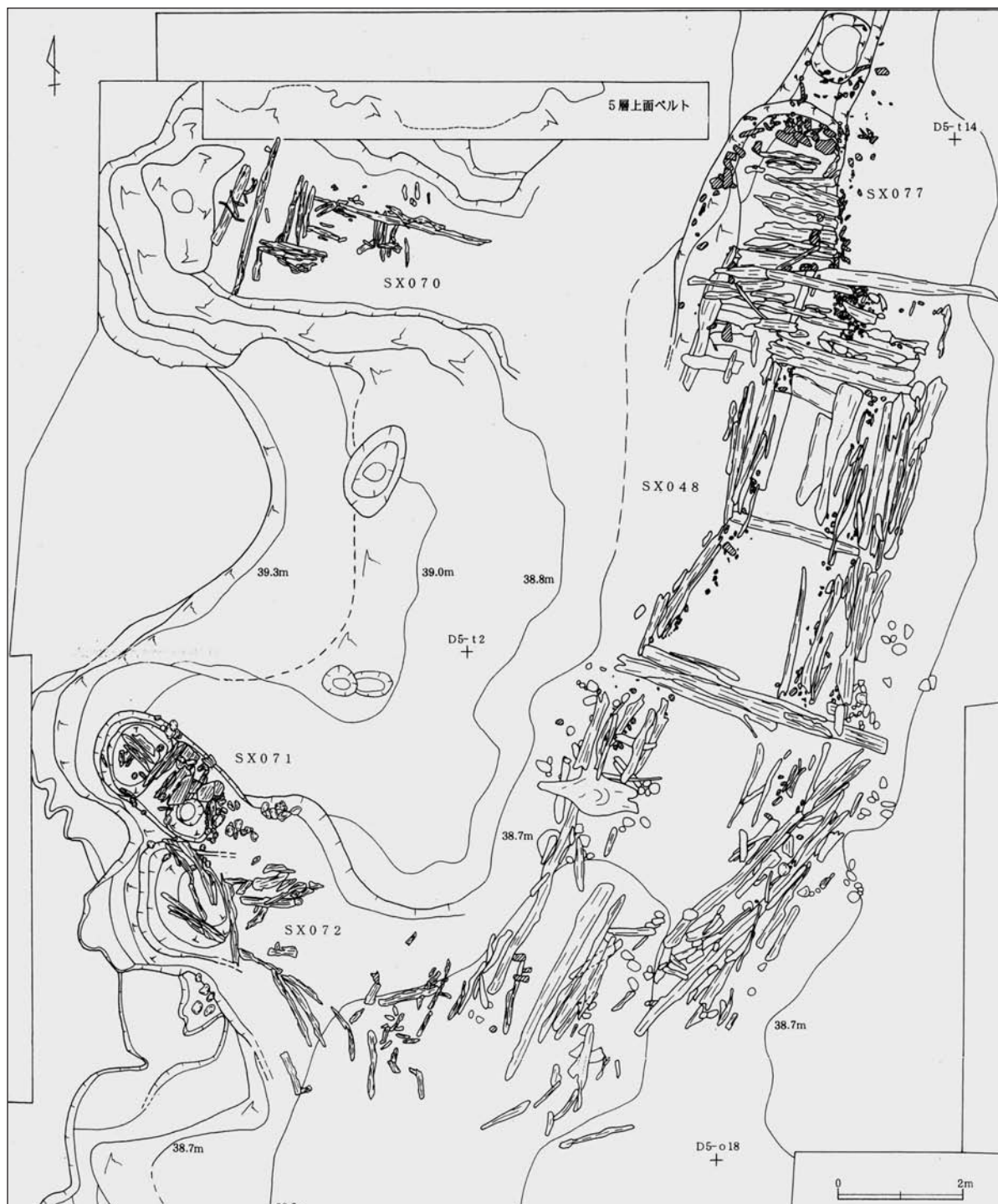
Generally, the amount of food consumption should relate to population size. However, it is unlikely that the increase in food consumption in this period was caused by population growth. As at the Teranohigashi site (Habu 2004.Fig 5.29), the number of recovered house pits from the Middle Jomon is generally larger than from the Late Jomon. It is thought that there is little evidence of population increase in the Kanto Plain of the Late to Final Jomon. In this case, population increase can not be the reason for an increase in food consumption; therefore, feasting could be a reason for this increase.

**Late to Final Jomon society and food consumption**

As I have noted elsewhere (Kawashima 2005; 2008a; 2008b; 2009), the settlements which include

site	Wooden water reservoir			Ethnographic examples					
	structure	size (m)	Depth (m)	No.	size (m)	depth (m)	Amount (ℓ)	References	
Teranohigashi	SX077	3.0x5.2	0.4	A1	1.5x1.5	0.15	27	Watanabe 1989	
	SX048	14.5x4.6		B4	0.45x0.45		36		
	SX053	4.5x1.0~2.5		B5	0.7x0.7	0.15			
	SX054	2.7x1.1		B8	0.6x0.6	0.12			
	SX041	1.3x1.3		0.5	B10	1.2x0.9	0.9~0.12		18
	SX075	2.0x2.0		0.5	B11	0.9x0.9			
Myojin-mae		2.0x1.8	0.4	B12	1.2x0.9	0.1	18		
Ushi-roya	1	4.4x1.1	0.8	B18	1.6x1.6				
	2	1.5~1.9x1.0		Koshi-nami	0.7x0.7				Nomoto 2005
	3	1.7x0.8							
	4	1.0x1.0							
Shimo-yakebe	7	4.0	0.4						
	8	6.0x8.0							
	10	6.2x2.8							
Aka-yama	4	(4.0x4.0)							
	processing area enclosed	9.0x1.4~1.9	0.3~0.5						
		5.0x2.0	0.9						

Tab. 1. The size of wooden water reservoirs and Tochidana (after Kawashima 2009.Tab. 1).



**Fig. 5. Wooden water reservoirs of the Late to Final Jomon at Teranohigashi (after Ehara et al. 1998.Fig. 24).**

rich ritual artefacts tended to have lasted longer, usually from the beginning of the Late to the end of the Jomon period. At most of these sites, ring-shaped earthen mounds are also distributed. In the Late to Final Jomon, the number and variety of ritual artefacts such as figurines and stone rods increased. Increasing evidence of food consumption and rituals at the Late and the Final Jomon settlements can be interpreted in a feasting context. In Jomon

studies, archaeologists have assumed a minimal consumption of food, simply because the occupants were hunter-gatherers. However, it is clear that some hunter-gatherers, such as the tribes of the Northwest Coast of North America, achieve politically complex societies, and consume atypical amounts of food during feasts. Comparing the Late to Final Jomon with the Middle Jomon, evidence of feasting apparently increases particularly at large and long-term settlements.

As I noted above, there is evidence of rituals at the mound sites in the Kanto region. Given the cultural changes of the early Late Jomon, I assert that the settlements of the Late to Final Jomon were more sedentary villages, compared with those before the Middle Jomon, while few scholars agree, because many houses have usually been discovered at Middle Jomon settlements. It seems that rituals played an important role in maintaining the social structure of these settlements, and that the mounds were built as the result of various activities driven by rituals at sedentary villages.

Although there is no archaeological evidence of a population increase in this period, new facilities for food processing appeared and the scale of food consumption is thought to have been greater than before. Food processing facilities in the Jomon seem to be used not only for the minimum usual processing

of food, but also for atypical processing. It is thought that more complex societies hold larger feasts more frequently (Hayden 2001). This theory can be applied to the social change from the Middle to the Late Jomon. The results of this study represent the development of feasting and food processing in the Late to Final Jomon. Increasing food consumption could create accumulating mounds of refuse. These activities are connected to changes in settlement patterns. In the Late to Final Jomon, settlements became more sedentary places, where larger scale feasts were held with foods processed in a wooden water reservoir. The appearance of large and systematic food processing facilities may imply not only technological development, but also greater scale of social change, also in social structure. Although it is within the range of hunter-gatherers, the society in the Late to Final Jomon period experienced a cultural transformation from the society in Middle Jomon.

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