

## Jomon, Yayoi, and Ainu in Japan : Sacred Commonness : An Archaeobotanical Approach to Yayoi Social Stratification : The ‘Central Building Model’ and the Osaka Ikegami Sone Site

メタデータ	言語: English 出版者: 公開日: 2010-03-23 キーワード (Ja): キーワード (En): 作成者: 細谷, 葵 メールアドレス: 所属:
URL	<a href="https://doi.org/10.15021/00002590">https://doi.org/10.15021/00002590</a>

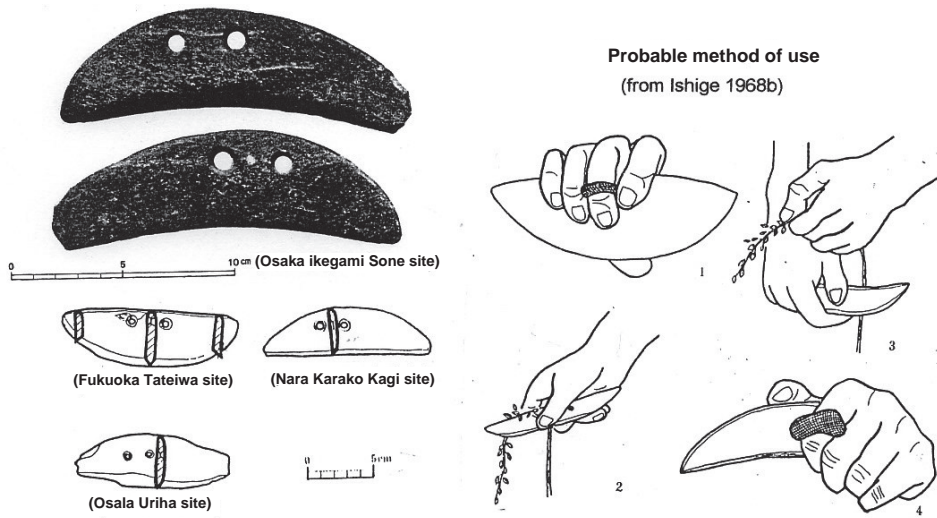


Figure 23 Yayoi Stone Knife.

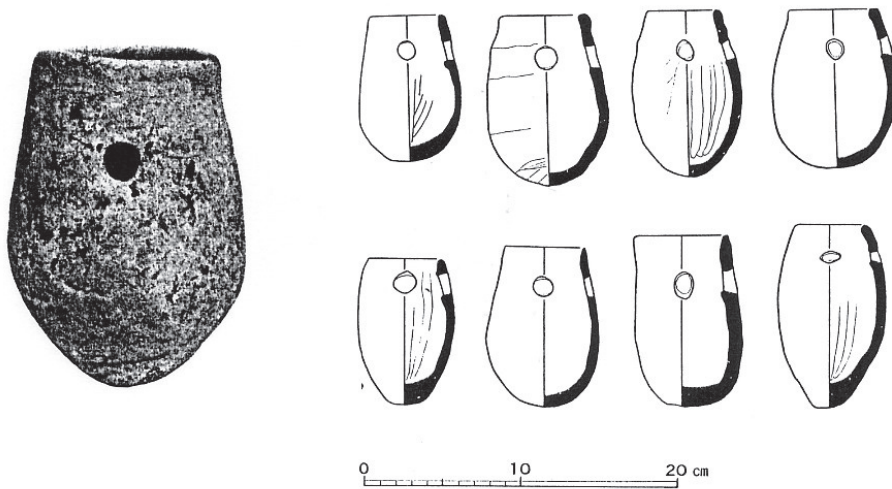
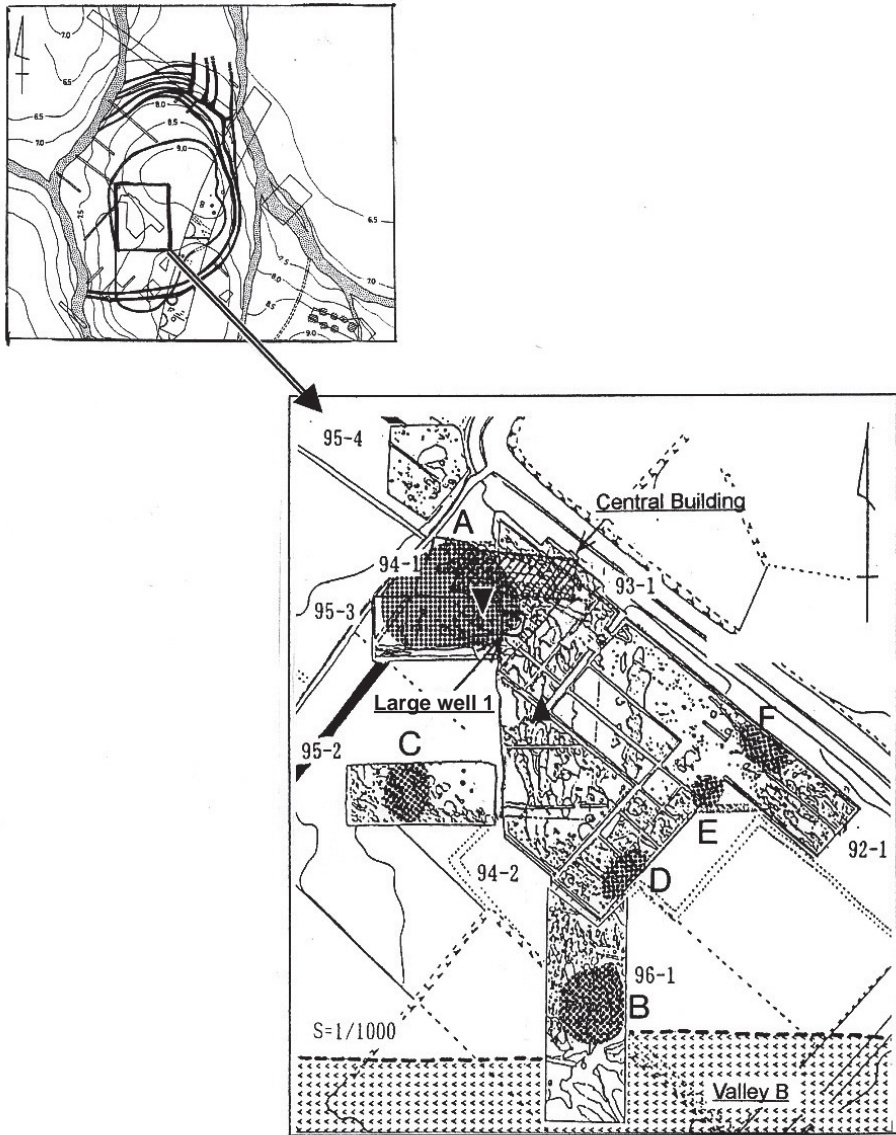


Figure 24 Ikegami Sone Octopus Traps (From Osaka Heritage Centre 1979).

to its extremely small size) and pits containing large pottery jars in the same state as that in Area I. The other group, besides also having a pit with a large pottery jar, included a square-ish pit (2.5 m × 2 m × 4 m in depth) containing more than 40 ceramic octopus traps (Figure 24). The size of those traps indicates that they were for catching *iidako* octopus (Kuze 1989), which are presumed to have been the special export of Ikegami Sone. Area II also included part of a large *hottate*-pillar



- A: Burnt soil/damaged pottery (middle Yayoi; more than 3,300 shards)
- B: Burnt soil/damaged pottery (early Yayoi; 2 shards, middle Yayoi; more than 5 shards)
- C: Burnt soil/burnt clay/lithic mould for *dotaku* bronze bells
- D: Burnt soil      E: Burnt soil      F: Burnt soil

**Figure 25** The Ikegami Sone Distribution of Features and Artifacts Related to Bronze Moulding (From the Izumi City Education Committee 1998).

building in the east which may have formed a complex with the central building (Inui 1997a). In general, both areas contained numerous pits besides those specific features.

It has also been inferred that metal moulding was carried out in the central area, based on finds of burnt soil, pottery deformed by heat, and the remains of moulds. The metal moulding finds of Ikegami Sone were indeed concentrated within the central arena (Izumi City Education Committee 1998) (Figure 25). Questions have been raised as to whether the moulded material was bronze or iron. Judging by the fact that all the moulds found thus far are for *dotaku* bronze bells, bronze production is considered more likely (Arii *et al.* 1999: 149).

Soil samples for the archaeobotanical analyses were mainly collected from the Yayoi Phase IV layer, which was the final period of the existence of the central building. Collection was made from all the special features shown above as well as from as many pits, postholes and ditches as were available to evenly cover all the areas. The sample size was 10 to 15 litres each, and a total of 114 samples from Area I and 72 samples from Area II were collected.

A flotation machine with a 0.25 mm sieve (Figure 26) was applied to extract carbonised plant remains. Identification of the plant remains was carried out in the George Pitt-Rivers Laboratory, McDonald Institute for Archaeological Research,

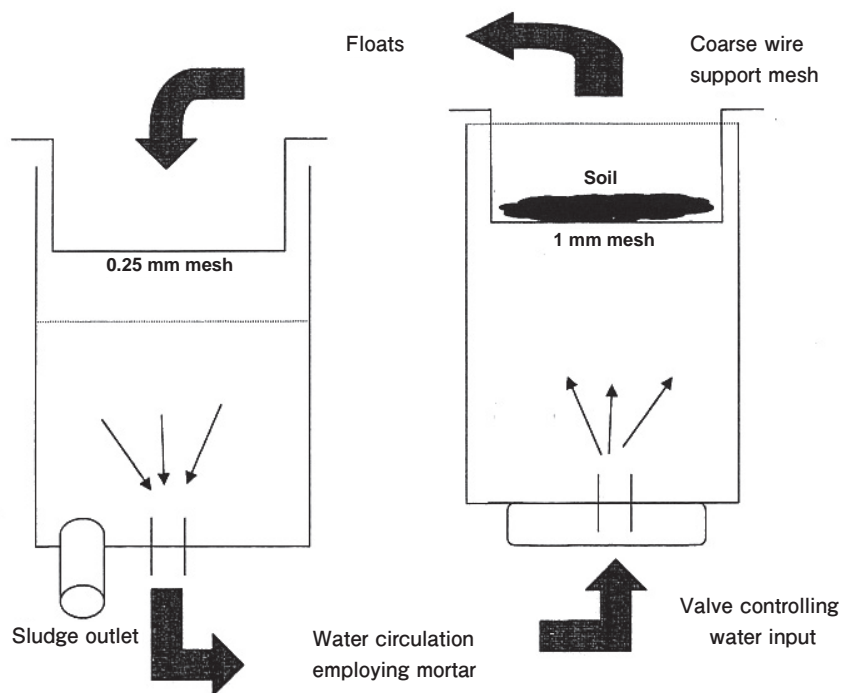


Figure 26 The Flotation Machine Used in This Research.

University of Cambridge with a stereomicroscope.

### 3) The data analyses

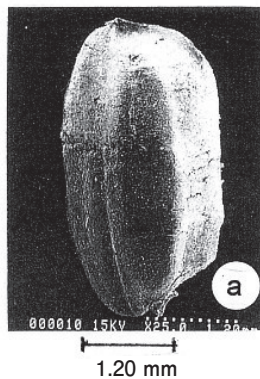
#### An overview of the central arena and plant-related activities

The general character of the plant remains was first compared between Area I and II. Table 6 presents both the total count and proportion of the recovered seed and chaff remains in those areas. The patterning in the proportion is similar in Areas I

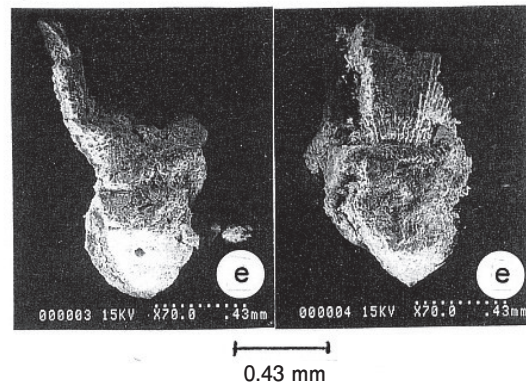
**Table 6** Absolute Count and Relative Abundance of All Seed and Chaff Remains.

	Seeds	Chaff	SUM
Area I	3793	1507	5300
	72%	28%	
Area II	1898	527	2425
	78%	22%	

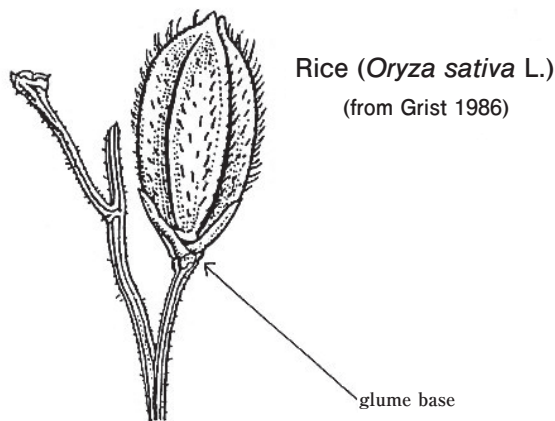
Rice (*Oryza sativa* L.)



Rice Glume Base



**Figure 27a** SEM photos of a rice grain and rice glume bases.



**Figure 27b** Rice Glume Base.



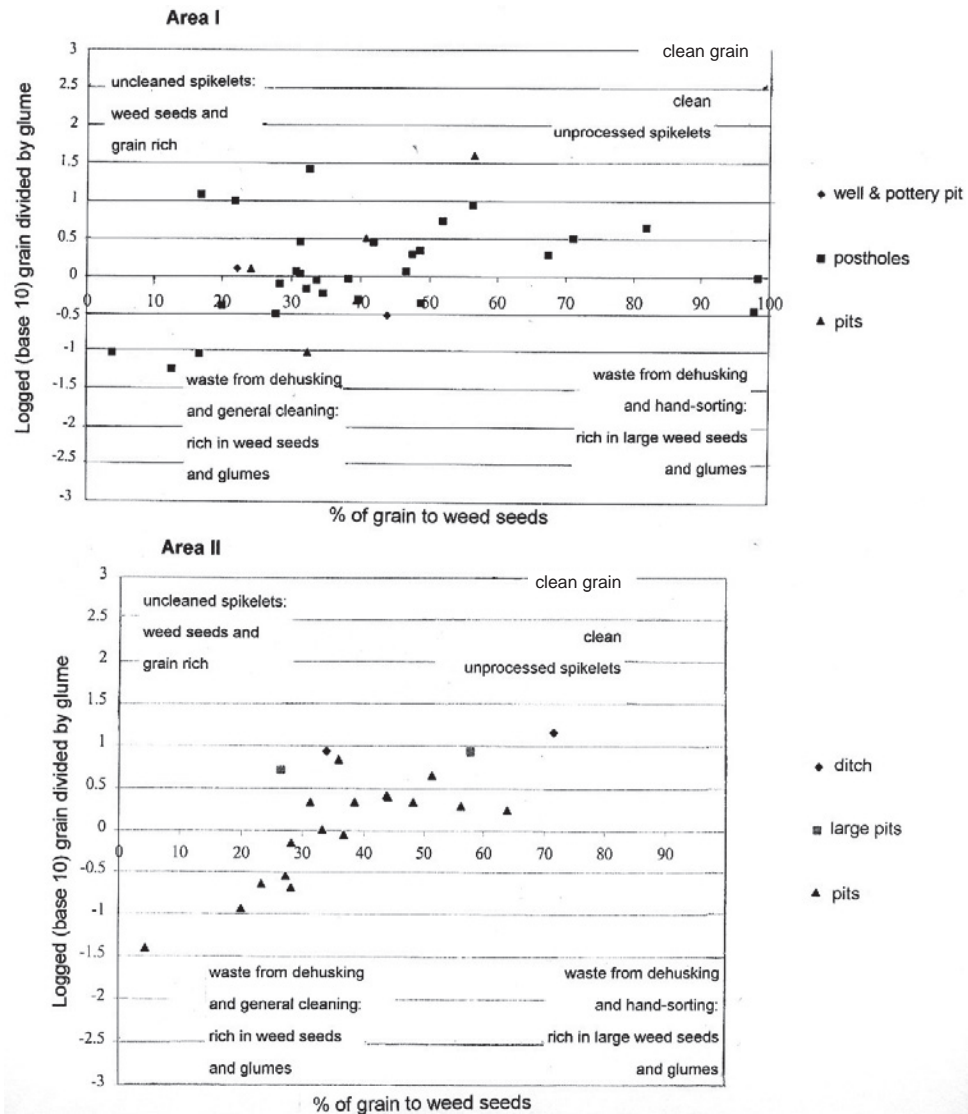
and II: seeds occur approximately three times as frequently as chaff. Studies show that chaff is generally less likely to be preserved than grains (Boardman and Jones 1990) so this pattern may not directly reflect the actual proportion at the time of deposition. Approximately 97 % of the chaff was identified as rice glume base (Figures 27a, 27b), and a small number of miscellaneous rachises were also recovered. However, no lower stem was found. The rice glume base was also the only identified spikelet type of chaff recovered in the Ikegami Sone central arena, though a certain number of millet grains were also recovered. Among the seeds, weeds (plants not identified as food plants) slightly outnumbered food plants in both areas. Rice grains dominate the food plants in both Area I and II accounting for approximately 90 %.

The low number of the lower plant parts, such as stems and culm nodes, cannot be explained as serving as animal fodder. The single possible domesticated animal known from Yayoi contexts is the pig, which is typically fed the soft parts of plants such as the husks rather than the stem parts (Hosoya 2007). Thus, the dominance of the upper plant parts in these contexts probably represents the original composition of the plant remains. This pattern appears to indicate that the Yayoi harvesting methods involved panicle-cutting (Hosoya 2007; Thompson 1996). The likely explanation for the overwhelming dominance of rice both among chaff and food plant grains is that rice was used more intensively than other food plants in the activities of the Ikegami Sone central arena. The proportional dominance is too high to be simply explained as a preservation bias.

More about the nature of the plant-related activities in the Ikegami Sone central arena was interpreted from analyses of the ratio of food plant seed, glume bases and weed seeds, using the method designed by Stevens (1996) to observe the distribution of typical by-products from different stages of crop processing (Figures 28, 29). Although this method was designed for wheat processing, it is applicable to the present analyses which focus on rice, because the ethnographic evidence (Hosoya 2007; Thompson 1996) indicates that the basic processing sequences are common to both wheat and rice. The ratio of grains to weed seeds (Figure 28) and large weed seeds to small weed seeds (Figure 29) indicate typical types of crop processing carried out at the sampled space. Given that rice was obviously the main crop in the Ikegami Sone central arena, the analyses focus on the rice processing sequence, and the classification of weed seeds was made according to the size of the rice grains. The size of the rice grains recovered from the Ikaegami Sone central arena was almost uniform: 4.5 mm long and 2.5 – 3.0 mm width. This size fits Nagamatsu's standard (1977: 326) for the japonica type. Accordingly, weed seeds smaller than 2 mm are classified as 'small weed seeds' and those larger than 2 mm are as 'large weed seeds'. Among the seeds collected, the former include Chenopodiaceae and Polygonaceae and the latter include Poaceae and Rubiaceae. Referring to Thompson's (1996) ethnographic research on rice processing in Thailand, small weed seeds are likely to represent coarse sieving, whereas large weed seeds represent fine sieving or pre-cooking hand sorting. The logged ratio<sup>9)</sup> of glumes to

grains indicates whether the crops were husked and the crop dehusking took place at the area. In the analyses, samples with less than 15 grains, glume bases or weed seeds were omitted to avoid the over-representation of a small number of items (cf. Stevens 1996). Different types of features, namely pits, postholes and wells, are indicated in the figures.

The results indicate that the general distribution of plant remains is similar in Areas I and II. First, in both areas, the measurement of the grain-weed in proportion



**Figure 28** The Distribution of Plant Remains in the Ikegami Sone Central Arena (1).

to the grain-glume ratio (Figure 28) indicate that weeds are typically more common than grains, and grains are more common than glumes. The proportion of grains appears slightly higher in Area II than in Area I. It is notable, however, that although not the majority, there are samples with a markedly high proportion of glumes to grains. Considering chaff's susceptibility to breakage, these samples probably contained a relatively large number of glumes in their original state. Second, the large-small weed seed proportion (Figure 29) showed a markedly higher proportion

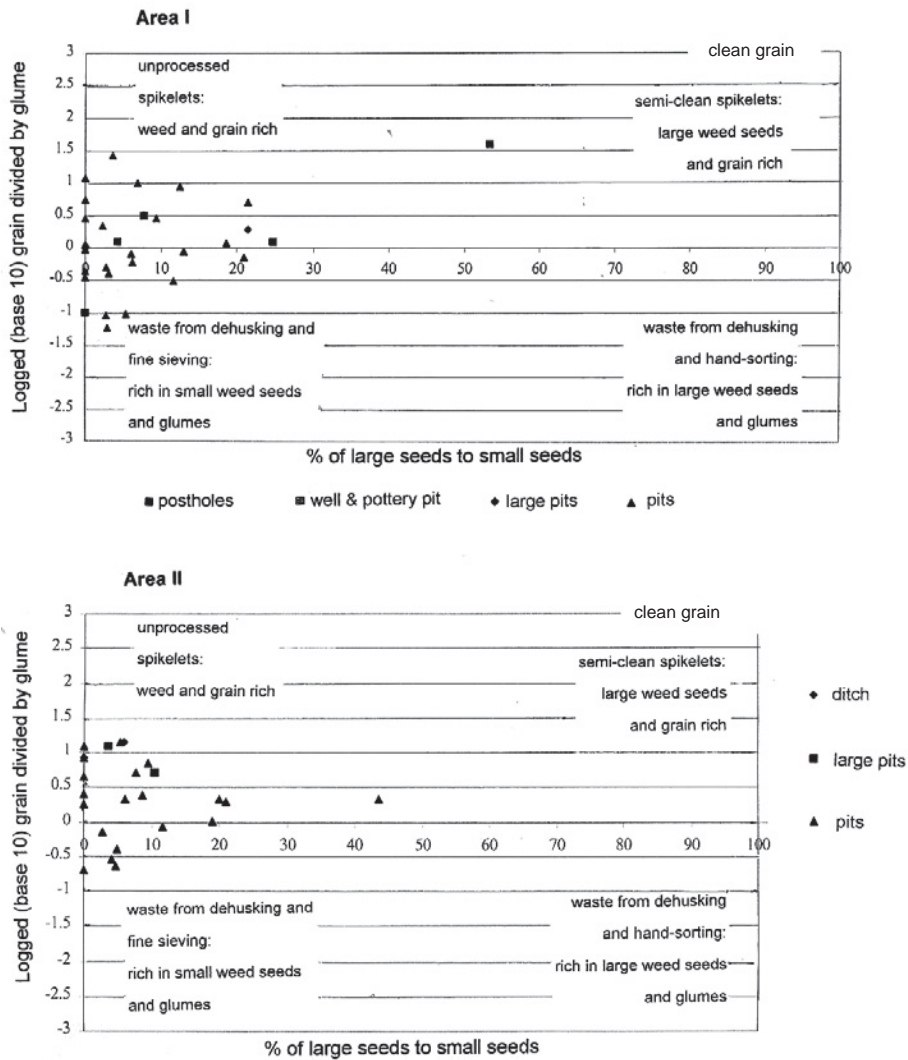


Figure 29 The Distribution of Plant Remains in the Ikegami Sone Central Arena (2).



of small weed seeds.

The high proportion of small weed seeds provides evidence that these samples represent the by-products of coarse sieving, which happens just after the dehusking sequence. This kind of sieving is also likely to produce typical dehusking by-products, i.e. glumes and broken grains (Hosoya 2007), and indeed, as shown above, the Ikegami Sone samples include considerably large numbers of rice glumes. Given that dehusking typically occurs just before consumption (Hosoya 2007; Thompson 1996), it is probable that the central arena plant remains represent stored grains rather than crops brought directly from the harvest. It is thus inferred here that the Ikegami Sone central arena was a venue exclusively for the post-storage stages of the crop processing sequence.

### Setting the micro contexts

For detailed spatial analyses in order to link plant-related activities with specific features of the Ikegami Sone central arena, Areas I and II are further classified into several micro contexts. Table 7 presents the classification, which was basically made on spatial position; however, several micro contexts: I-1, I-5 and II-6 were divided for their characters of features. I-1 is a posthole of the central building, and the bases of the posts were found remaining within those holes. Postholes are filled by posts while the building is in use, consequently the plant material in those contexts was likely deposited either before or after the use of the building. In the Ikegami Sone case, the posts were not pulled out, so it is likely that the plant remains were deposited at the time that the building was constructed. Thus, in this context, the plant remains probably represent activities which occurred in the area before the construction of the existing central building. On the other hand, in the I-5 and II-6, *i.e.* the large well and the octopus pits/pits of large jars, the plant remains were presumed to represent activities during or after the abandonment of the central arena. The large well and pits containing large jars, which are also interpreted as small wells, are likely to have been regularly cleaned during use to fulfil the

**Table 7** Chronology of the Ikegami Sone Central Arena Micro Contexts.

Central Building 4		I-1 (Central Building post holes)
Central Building 5	Phase IV	I-2 (Central Building pits) I-3 (pits: Area I north) I-4 (pits: Area I south) II-1 (pits: Area II northwest) II-2 (pits: octopus trap pit area) II-3 (pits: Area II south) II-4 (pits: 'north-south' buildings south) II-5 (ditch)
Abandonment		I-5 (Large well 1 & pottery pit) II-6 (Octopus trap pit & pottery pit)

function of a the well. In the case of the large well, analyses of the fill showed the high possibility of regular cleaning. Thus the deposit of the plant remains is likely to have occurred at the time of the abandonment of the features rather than during their use. In the case of the octopus trap pit, the deposit also appears to have occurred in the time of abandonment of the area, since the octopus traps in the pit are interpreted as having been left buried when the area was no longer used. In micro contexts other than those three contexts, the plant remains are presumed to represent activities during the use of the central arena with the existing central building.

### A comparison of the micro contexts (1)

A comparison among micro contexts was made using the Jones' (1985) methodology with triangle diagrams to show the proportions of selected components of plant remains. First, the proportion of food plant seeds, weed seeds and chaff was calculated and analysed (Figure 30). Some distinct patterns are evident in Area I, while no distinct patterning was seen in Area II. In Context I-1 and I-2, i.e. the central building post holes and associated pits, notably high concentrations of chaff that outnumbered the food plant seeds was found. In the sampled area, 34 % of all recovered chaff was from these contexts. As shown above, most of the chaff has a rice glume base. In Context I-4 and I-5, i.e. the southern part of the central building and the large well, the numbers of plant remains are large but the proportions of the food plant seeds, chaff and weeds are almost even. In more detailed analyses,

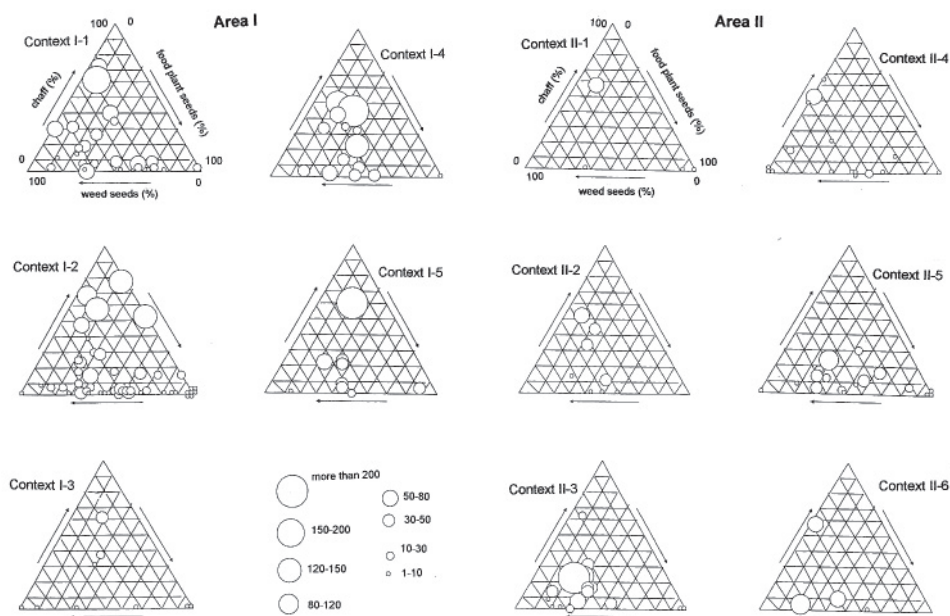


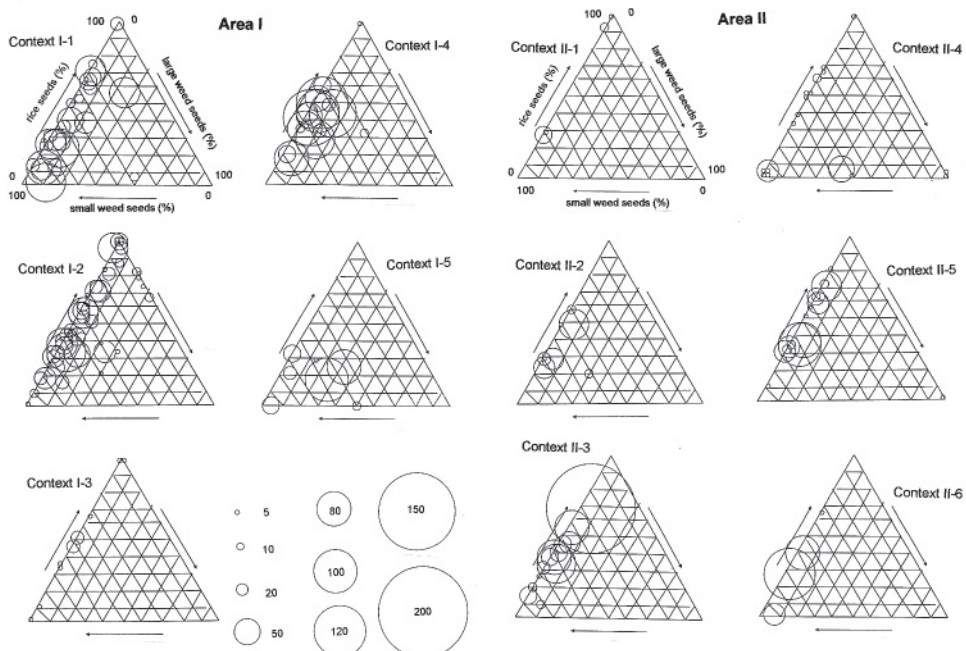
Figure 30 Ikegami Sone Central Arena Micro Contexts.

however, these two contexts show a different character. Namely, while Context I-4 includes some spots of chaff concentration, Context I-5 shows less of that, and its food plant remains are dominated by millet which can be distinguished from the generally rice-dominated central arena context. Not only does Area II fail to show distinct patterning, but the amount of plant remains per sample is smaller than that in Area I overall, except for the comparatively plant-rich Context II-3: in the pits in the south part of the area the major plant component is rice seed.

**A comparison of the micro contexts (2)**

Rice grains and different sizes of weed seeds were used (Figure 31) in the second comparative analysis of micro contexts. For the analysis, the ratio of large weed seeds and small weed seeds and rice grains was examined; the classification criteria were the same as that shown in the previous section. The classification is concerned with reconstruction of sieving activities as discussed above.

The results show that in general, in both Areas I and II, the proportion of rice grains and small weed seeds is consistently large compared to the small proportion of large weed seeds. One exception is in Context I-5: the large well, where the proportion of large weed seeds is large. In addition, in Context I-1: the postholes of



**Figure 31** Food Plant Seed/Chaff/Weed Seed Ratio in the Ikegami Sone Central Arena.

the central building, where the proportion of rice grains is comparatively small.

### **Activities at the Ikegami Sone central arena**

Plant-related activities in the central arena, particularly in connection with the central building are discussed based on the comparative analyses of the micro context plant remains above. The concentration of chaff, mainly comprised of rice glume bases, in the micro contexts associated with the central building is likely to indicate that the reconstructed post-storage crop processing activities in the Ikegami Sone central arena, *i.e.* rice dehusking and the ensuing sieving/winnowing were most intensively associated with the central building. Studies show that when plant by-products are transferred from an activity area to other places for secondary use, such as fuel or disposal, the light chaff may become damaged by the movement due to its brittleness and hence be underrepresented at depositions (Fuller 1999). Therefore, the best explanation is that the central building was the place for *in situ* disposal of the by-products from rice dehusking and the subsequent winnowing/sieving. A high concentration of rice glume phytolith in the central building (Toyama 1996) strongly supports this hypothesis.

Furthermore, it was observed that not only Context I-2, the central building pits, but also Context I-1, the plant remains from the central building post holes, show the same tendency of *in situ* rice dehusking – sieving/winnowing by-products, namely high proportions of rice glume bases and small weed seeds. As shown above, the plant remains from the post holes are likely to represent activities that took place prior to the construction of the existing central building. Through archaeology we know that the central building was rebuilt three or four times in the same position, so this archaeobotanical patterning suggests that the dehusking activities were associated with the previous buildings as well as the existing central building. On the other hand, Context I-5's large well shows distinctively different patterning from other Area I micro contexts; there is a lower chaff concentration and fewer less of rice remains and small weed seeds. As already explained, the well context is likely to indicate activities at or after abandonment of the central building. Therefore, the different tendency in plant remains from the Context I-5 probably show that the rice dehusking – sieving/ winnowing activities were distinctly associated with the central building, and not carried out after the abandonment of the building.

The context I-5 plant remains indicate another aspect of activities at the central building. Millet, which is the second most common food plant in the central arena, was recovered in high proportions in Context I-5. Given that this context is likely to indicate activities that took place after the abandonment of the area, millet was found especially among the debris deposited after the abandonment of the central building. One possible explanation for this pattern is that, although millet was not intensively processed in the central arena, it was associated with Area I and carbonised in abandonment of the building. The most likely scenario is that the millet was stored in the central building and the spillage (cf. Hirose 1998a: 75) and/or spoilt grains (cf. Thompson 1996: 140) were swept up and burnt at the end of

each phase of the central building. This indicates that the Ikegami Sone central building, which is supposed to have been in the Kinki style raised-floor granary shape, indeed had the functions of a granary. Considering that the processed rice was probably stored as grains rather than as crops brought directly from the harvest, there is the high possibility that rice ears were also regularly stored in the central building.

In Area II, the patterning of the plant remains is generally not so clear as in Area I, and thus different routes of plant carbonisation need to be considered between these areas. Although Area II generally shares general tendency of by-products from the series of dehusking activities, such as a high proportion of small weed seeds, the amount of plant remains is much lower than Area I and is the lack of the chaff in particular. This may show that Area II plant remains represent the secondary disposal of the crop processing carried out in Area I. Secondary disposal may simply encompass the removal of the by-products from the activity area for cleaning, and/or a purposeful transferring for secondary use, such as fuel. Context II-3, the pits in the south part of Area II, which produced the richest plant assemblage among the Area II contexts, is near what was apparently a metal moulding area (Figure 25), a space which likely experienced the frequent use of fire. Thus, the use of the plant by-products as fuel is a reasonable assumption particularly in this context. If the Area II plant remains, at least in Context II-3, represent plants burnt as a fuel, the underrepresentation of light chaff compared to grains can be explained by the fact that light chaff easily burns to ash, in addition to its expected loss by transferring. This assumption also suggests that the intensive rice processing activities at the central building and the manufacturing activities in Area II had a substantial connection.

#### **4) Interpretation of the social role of the Ikegami Sone central arena**

The above archaeobotanical reconstruction of the activities of the Ikegami Sone central arena indicates that the central building served as a part of the agricultural cycle. The patterning in the plant remains from the central arena indicates that dehusking and the subsequent sieving/winnowing were distinctly associated with the central building. While these activities are a regular part of the crop processing routine, the above analyses of Yayoi iconography raises the possibility that the dehusking stage served as a metonymic representation of the agricultural cycle. Thus, the central building may have been involved in the agricultural cycle both practically and symbolically. It was also inferred from the iconography that during Yayoi Phase III–IV the metonymic representation was transferred from the dehusking activity to a raised-floor building. This raised-floor building may have indicated the central building, as already discussed. Accordingly, the present archaeobotanical reconstruction suggests not only a substantial association between the central building with the crop dehusking stage but also that the central building served as a material metaphor for and a dynamic element in the agricultural cycle. The fact that the central building was a metaphor for the dynamic agricultural cycle



probably highlighted the significance of both the raised-floor granary and rice, as primary elements of the middle-late Yayoi storage system, having the practical and symbolic aspects. From this point of view, the dehusking of rice can be inferred to have become imbued with ceremonial significance in tandem with its role within the crop processing activity routine.

Turning to the results of archaeological research at the Ikegami Sone central arena shown above, several types of manufacture-emphasised activities were reconstructed. From the artefactual evidence, the activities identified include stone-knife material circulation, octopus fishing and *dotaku* bronze bell casting. The first two are thought to have served inter-community material exchanges, and the third was used in community rituals. All the activities that are reconstructed here are explained as having a community basis, which supports the working hypothesis that the central building context functioned to emphasise community unity.

Given that the archaeobotanical analyses of this context show that a series of post-storage type crop-processing activities were carried out in the central building, it is suggested that the central building was routinely used in the agricultural sequence. It can indicate that community unity, which is attributed to the central arena, was reinforced through these repetitive activities. At the same time, the influential role of the community leader was also emphasised through those activities as it is likely that the leader organised the community-based activities.

In summary, the central arena appears to have been a demarcated space where the community leader was wholly influential. At the same time, the space represented a place where community members regularly came together as part of their day-to-day lives. On this basis, activities within the central arena most likely formed a coherent field of discourse within which the social code, which emphasised centralised power and communality, was routinely reproduced and reinforced.

## **DISCUSSION AND CONCLUSION: THE CENTRAL BUILDING AND THE EMERGENCE OF A POWERFUL LEADER**

The Ikegami Sone illustrates an example of the association with the central building/arena of the manufacturing of commodities for exchange and metal moulding activities. As Akiyama (1999a) argued, manufacturing activities are likely to have been ‘additional attribution’ within the central arena, i.e. these activities were not exclusively assigned to this space, but were also conducted in other settlement spaces. The character of the central arena is thus shown to encompass the co-existence of these ‘additional’ activities alongside activities that were deemed to this context, i.e. bronze casting. This pattern suggests that what was unique for this space was not the types of activities themselves but the underlying discourse which unified those activities. The fact that the manufacturing of goods for exchange was a part of the central building discourse suggests that the common underlying code was community unity. This Ikegami Sone pattern cannot be simply generalised to other

Kinki cases. Nevertheless, judging by the factors common to the Kinki central building/arena, namely 1) being the Yayoi's first archaeologically defined facility shared by a community and 2) its association with routine types of activities as well as exclusive ones, a similar discourse appears to have been common among the Kinki Yayoi settlements.

On this basis, it is significant that the post-storage crop processing sequence was reconstructed at the Ikegami Sone central arena. This suggests that the central building/arena discourse was situated within the agricultural cycle. Accordingly, over time the discourse likely gained regularity. As people routinely returned to this space and repeated the same sequence of activities of the agricultural cycle, probably the code of the discourse, namely the community unity, was constantly 'brought into being' (Barrett 1988: 7). The central building/arena thus came to represent both a control over time and the permanent assurance of community reproduction. Thomas (1988) discusses this type of discerned space:

Once created, these items (and presumably others lost to archaeology) serve as constant reminders, reproducing ideas by their involvement either in domestic transactions or in structuring the individual's conception of the landscape. (Thomas 1988: 65)

Furthermore, through the agricultural cycle, the central building/arena discourse may have influenced other stages of the cycle.

... the same material components may be shared by a number of fields, and the symbolic components of one field may be stored and transformed into the symbolic components of another. (Barrett 1988: 11)

With the evolution of a central building/arena discourse as a part of the agricultural cycle, a code of community unity may have been transferred onto the production area through the shared component: rice grains. As this kind of transference of code proceeded, eventually the whole process of agricultural production came to be based on the concept of community unity.

The association between the central building/arena and the agricultural cycle is significant for understanding the transformation of the nature of the community leader. Assuming that the central building/arena activities were based on a code of community unity, the code is likely to have been emphasised and influenced by the community's representative, the leader. In the Ikegami Sone case, both the manufacturing of goods for exchange and *dotaku* bronze bell casting likely needed to be organised as a joint effort of the whole community and may have required a representative organiser. As this space was associated with 'regularity' through the agricultural cycle, a leader would routinely influence the community members' daily lives. Indeed, the iconography found on Yayoi artefacts suggests that the symbolism originally attached to the crop processing routine, namely specific 'activities', was

later transferred onto the central building/arena: a specific 'space'. Through the regular use of this space, the symbolism would have been constantly brought into being. The community leader, as attached to the central building/arena space and regularly joining in the activities, would become visibly associated with the symbolism. Over time, this probably resulted in community members' expectations for the leader to continuously materialise the symbolism, eventually in the form of his/her individual attributes.

Moreover, as the code of community unity came to encompass the other stages of the agricultural production, that code would have provided the basis for a single type of authority and social relations which eventually pervaded all those stages. This development would result in a centralised organisation of the entire agricultural cycle, and then further develop to encompass the whole community operation, which was based on the agricultural production. Here, the association between the community leader, ideological and social symbolism and the pervasive central organisation of labour would be established within the central building/arena. This association would then be strengthened in the following late Yayoi – Kofun periods.

Once a monument has been built in a particular space, that space can never again be interpreted in the same way as before. (Thomas 1992: 30)

As Thomas states, an architectural structure can make a qualitative difference in a space. After the construction, the discourse of the space is renewed and reinforced within that new situation. Pred (1985), for example, described an ethnohistorical case in an 18<sup>th</sup> –19<sup>th</sup> century Swedish village in which the day-to-day power relations of the community members were significantly affected by changes to the village plan due to commercialisation and population growth:

... the spatially-transformed village scene must have greatly influenced the sense of place, structure of feeling and other elements of consciousness held by residents by breaking down the grammar of taken-for-granted codes. (Pred 1985: 359)

It is important to note that the 'taken-for-granted' was itself transformed as a result of the transformed structure of the spatial plan. The subsequent social structuration was constructed following this new 'taken-for-granted' code, and the social transformation after the emergence of the central building/arena is explicable on this basis. The centralised power, the symbolism attached to a specific time and space, and certain regular activities were probably bound at the central building/arena as a coherent discourse. The central building served as a reminder and a symbol of this discourse. Reproducing the code through the routine activities in this space likely led to the code being accepted by the community as 'taken-for-granted'. Community members probably began to perceive all the factors in the central building/arena as inseparably bound. Consequently, it would be natural that the community leader would come to be associated with the symbolism and the ruling

position. This means that there was the potential for the leader become established as both having a sacred existence as well as being an absolute ruler.

The subsequent social structuration towards the Kofun period is thought to have been established on the basis of this newly formed 'taken-for-granted' code. The first visible transformation of the central building/arena towards the end of the Yayoi is the spatial seclusion of this building from other parts of the residential area. This transformation likely indicates a change in the 'taken-for-granted' code. As shown above, the central building/arena originally appears as an inseparable part of the residential area, since its characteristic discourse was based on routine-type activities. Therefore, the later seclusion of the central building/arena during the late Yayoi to Kofun periods suggests that this space no longer needed to be physically connected to other parts of the community. As the 'central building/arena' discourse became accepted as 'taken-for-granted', it was no longer necessary to repeat this discourse within community's routine. As this new stage, it was probably equally taken for granted that the central arena space was secluded for its 'inherent' specialty, rather than being a part of the settlement. By this time, the community leader was likely to be a symbolically distinct person, and thus isolated from other community members, in the same way that the central building/arena was secluded from other settlement spaces. Through this process of social structuration, the secluded central building/arena and the community leader are thought to have come to belong to each other. This pattern shows a complete change in the social meaning of the central building/arena, having shifted from a shared facility of the community to an exclusive space belonging to a distinct individual. This transformation appears to be the consequence of a long and sustained process of social structuration.

The second visible transformation of the central building/arena is that it began to be used as a distinct 'ritualistic space', indicating a shift towards the institutionalisation of rituals. After the central arena was secluded from other parts of the residential area, the symbolic aspects of activities in this space were probably formalised by the centralised leadership. Certainly, new developments in the pottery iconography in the end of Yayoi include the replacement of the pictures with symbols, which occurred in tandem with the abandonment of the *dotaku* bronze bells. These elements suggest that a centralised body and standardised ceremonial activities existed at this time. This second transformation seems to have been the basis for a new code for this ex-central building/arena: the centre of political organisation with artificially separated 'ritualistic' and 'non-ritualistic' spheres. While the same type of activities as the central building/arena, such as crop storage and metal moulding, were attached to the king's residence, the underlying code was transformed. It is thus feasible that this code then would be transferred to other parts of the society. By the middle Kofun period, specified 'ritual' areas also appeared within other areas of the settlement and within houses. Such ritual areas are recognised from characteristic signs of seclusion such as fencing and paving (Hamamatsu City Council Education Committee 1977: 88–91; Ishino 1991: 13) and also from specific types of associated artefacts (Hamamatsu City Council Education

Committee 1987: 32; Ishino 1991: 11–13). These new phenomena suggest that institutionalised ceremonies became a common part of the day-to-day life, showing the pervasive influence of centralised organisation. Moreover, the same types of artefacts as those associated with the ‘ritual’ areas have been found in association with Kofun king’s burial mounds (Japan Association for Quaternary Research 1998: 184). This seems to indicate that the ceremonial factors themselves came to represent the attributes of the king’s self even apart from the king’s residential space. Thus, the Kofun kings became absolute rulers associated with sacredness as a product of social structuration mediated by the central building/arena.

## ACKNOWLEDGEMENTS

This paper is based on my Ph. D. thesis submitted to the University of Cambridge in 2002, and my special thanks go to: Prof. Martin K. Jones and Prof. Ian Hodder for supervising my thesis as the supervisor and advisor; Mr. Kozo Akiyama and Mr. Shiro Kambayashi for giving a great help for my research at the Osaka Ikegami Sone site; Mr. Yasuhito Nakanishi for providing a flotation machine; Mr. Kazuo Kuninori for providing a space for flotation; Dr. Mikiko Ashikari, Prof. Yuriko Fukazawa, Dr. Dorian Fuller, Dr. Simon Kaner, Prof. Marco Madella, Prof. Koji Mizoguchi and Dr. Chris Stevens for their valuable advice and generous help; Ms. Cathy Taylor and Dr. Michele Wallstonecroft for helping me by correcting my written English.

## NOTES

- 1) In this paper, five phases are used for the Yayoi period. Phase I: Early Yayoi, Phases II~IV: Middle Yayoi, and Phase V: Late Yayoi.
- 2) The term for indicating this type of special building varies in Japanese archaeological writings and includes ‘central building’ (*chusu tatemono*), ‘large building’ (*ohgata tatemono*) and ‘shrine’ (*saiden*). In this paper, the term ‘central building’ is used because it can be independent of the actual size of the building which may not be particularly ‘large’, or of an *a priori* ‘ritualistic’ interpretation, but can indicate the typical central position of the building in settlements.
- 3) The ‘*hottate*-pillar’ indicates a pillar which is directly embedded or sunk into the ground, without a base stone. Although typical pit house posts are constructed in this way also, the ‘*hottate*-pillar building’ in Japanese archaeological terms specifically indicates a building with a floor above the ground (Miyamoto 1991: 33). A building with an above-ground floor but which does not use *hottate*-pillars is called a surface building (*heichi-shiki jyukyo*), to make the distinction (*ibid.*). It is generally accepted that in prehistoric Japanese contexts the *hottate*-pillar building represents a building that is in some way ‘prestigious’ (Miyamoto 1996: 172).
- 4) It may be an over simplification to assume that all the Kyushu and Kinki/Chugoku/Shikoku cultural factors just converged into Kofun society, but the transformation sequences need to be reconstructed individually in each context (cf. Shimizu 1995: 77). However, the present discussion limits the scope to the underlying code of the central building; in terms of this code, the central building examples of all the districts are considered to have developed into the Kofun king’s residence in one course.
- 5) The term ‘institution’ used in this paper means something different from that used in some other archaeological writings such as Hudson and Kaner (1992: 115) and Tilley (1984). In



- those writings, the term ‘institutional ritual’ is used to indicate public rituals, and is the antonym of the domestic ritual. However, in this paper, ‘institutional ritual’ indicates formalised rituals, without indicating the type of ritual body. The author takes the point of view that all archaeologically recognisable rituals are formalised, and are thus basically ‘institutional’.
- 6) There is also the assumption that the icon can be interpreted as depicting a weaving scene rather than a fishing scene (Ikeda *et al.* 1997: 80).
  - 7) The possibility has been raised that an icon on the Kamika 4 bell (AD2C) represents a rice-planting scene, but referring to the depiction styles of other icons, it is more likely that the icon represents animals rather than humans (Sahara and Harunari 1997: 154).
  - 8) Sanukite is one common type of lithic tool material in Japanese prehistoric contexts, and is produced along the Niyo Volcano line throughout the Kinki, Shikoku and Kyushu districts (Kikuchi 1979).
  - 9) The value is logged to avoid over-representation of small-volume samples against large-volume samples.

## REFERENCES

- Akiyama, K.
- 1999a Kinki ni okeru ‘Shinden’ ‘Toshiron’ no yukue (Where the Kinki Yayoi ‘Shrine’ ‘Town’ Discussion Goes). *Historia (Osaka Society of History)* 163: 1–28. (in Japanese)
  - 1999b Ikegami Sone Iseki no Yayoi Jidai ido shotai (Various Yayoi Wells in Ikegami Sone Site). *Mizuho* 30: 1–19. (in Japanese)
- Akiyama, K. and K. Kobayashi
- 1998 Yayoi chuki ni okeru Ikegami iseki chusubu no kukan kozo to chikei kankyo (The Spatial Structure and Topology of the Middle Yayoi Ikegami Sone Central Arena). *Osaka Heritage Research* 14: 1–17. (in Japanese)
- Akiyama, K., K. Kobayashi, T. Nakahara and Y. Yamazaki
- 1997 Tokusyu-Hyogen o motu Yayoi Tatemono Kaiga: Ikegami-Sone iseki no shinshutu siryo sokuhou (The Yayoi Picture of a Building with Special Accessory). *Mizuho* 23: 30–41. (in Japanese)
- Arii, H., S. Ito, T. Inui, S. Kameshima, Y. Kobayashi, S. Nakai, H. Miki and R. Yamada
- 1999 Touron: Ikegami Sone Iseki no Rikai no tameni (Discussion: For Understanding the Ikegami Sone Site). In T. Inui (ed.) *Yomigaeru yayoi no toshi to shinden (Reconstruction of Yayoi Town and Shrine)*, pp.128–187. Tokyo: Hihyo Sha. (in Japanese)
- Ban’no, K.
- 1995 Shigaken ni-no-aze/Yoko-makura iseki to Ise iseki (Shiga Prefecture Ni-no-aze/Yoko-makura Site and Ise Site). *Kikan Kokogaku* 51: 78–82. (in Japanese)
- Barnes, G. L.
- 1993 *China, Korea and Japan: The rise of Civilization in East Asia*. London: Thames and Hudson.
- Barrett, J. C.
- 1988 Field of Discourse: Reconstructing a Social Archaeology. *Critique of Archaeology* 7 (3): 5–16.
  - 1989 Food, Gender and Metal: Questions of Social Reproduction. *The Bronze Age – Iron Age Transition in Europe. BAR International Series* 483 (ii): 304–320. Oxford: J & E

- Hedges.
- Boardman, S. and G. Jones  
1990 Experiments on the Effects of Charring on Cereal Plant Components. *Journal of Archaeological Science* 17: 1–11.
- Brumfiel, E. M. and T. K. Earle  
1987 Specialization, Exchange, and Complex Societies: An Introduction. In E. M. Brumfiel and T. K. Earle (eds.) *Specialization, Exchange, and Complex Societies*, pp.1–9. Cambridge: Cambridge University Press.
- Carneiro, R. L.  
1981 The Chiefdom: Precursor of the State. In G. D. Jones and R.R. Kautz (eds.) *The Transition to Statehood in the New World*, pp.37–79. Cambridge: Cambridge University Press.
- Dehara, K.  
1991 Shikoku no hottate bashira tatemono (Hottate-pillar Buildings in Shikoku). *Yayoi jidai no Hottate-basira tatemono (The Yayoi Hottate-pillar Building)*, pp.140–151. Osaka: Heritage Research Group. (in Japanese)
- Earle, T. K.  
1987 Chiefdoms in Archaeological and Ethnohistorical Perspective. *Annual Review of Anthropology* 16: 279–308.
- Friedman, J. and M. J. Rowlands  
1978 Notes towards an Epigenetic Model of the Evolution of Civilization. In J. Friedman and M. J. Rowlands (eds.) *The Evolution of Social System*, pp.201–276. Pittsburgh: University of Pittsburgh Press.
- Fujio, S.  
1993 Seigyo kara mita jyomon kara yayoi (Jomon to Yayoi as seen through Subsistence). *Kokuritu Rekishi Minzoku Hakubutsukan Kenkyu Houkoku (Bulletin of the National Museum of Japanese History)* 48: 1–64. (in Japanese)  
1998 Fukuoka Heiya ni miru noukouminka no mittsunokata: senshi jidai jin no seikatsu (3) (Three Types of Agriculturalisation in the Fukuoka Plain: The Life of Prehistoric People (3)). *Iden (Genetics)* 52 (10): 27–31. (in Japanese)
- Fujita, S.  
1995 Naraken karako-Kagi iseki (Nara Prefecture Karako Kagi Site). *Kikan Kokogaku* 51: 68–72. (in Japanese)
- Fuller, D. Q.  
1999 *The Emergence of Agricultural Societies in South India: Botanical and Archaeological Perspectives*. Ph. D. Dissertation Submitted to University of Cambridge.
- Giddens, A.  
1979 *Central Problems in Social Theory*. Phoenix, Arizona: MacMillan.  
1987 *Social Theory and Modern Sociology*. Cambridge: Polity Press.
- Goda, S.  
1988 Yayoi jidai no kine to usu (The Yayoi Pestles and Mortars). *Kokogaku Ronshu*, pp.193–207. Nara: Meishin Publication Ltd. (in Japanese)
- Habu, J.  
2004 *Ancient Jomon of Japan: Case Studies in Early Societies*. Cambridge: Cambridge University Press.
- Hachiya, H.  
1983 Shumatsu ki sekki no seikaku to sono shakai (The Character of Lithic Tools on Its

- Final Stage). In the Kodai-wo-Kangaeru-Kai Publication Committee (ed.) *Ko-bunka Ronso*, pp.37–82. Osaka: Nakajima Kobun Do. (in Japanese)
- Hamamatsu City Council Education Committee
- 1977 *Iba iseki Hakkutsu chousa Houkokusho 2: Ikon Hen (Iba Site Excavation Report 2: Archaeological Features)*. Hamamatsu: Hamamatsu City Council Education Committee. (in Japanese)
- 1987 *Iba iseki Hakkutsu chousa Houkokusho 6: Ibutsu Hen 4 (Iba Site Excavation Report 6: Artifacts 4)*. Hamamatsu: Hamamatsu City Council Education Committee. (in Japanese)
- Hanzawa, M
- 1997 Muko-no-sho Iseki no Yayoi Jidai Chuki Ogata Hottate-bashira Tatemono Ato (Middle Yayoi Large *Hottate*-pillar Buildings in the Muko-no-sho Site). *Kokogaku Journal* 413: 27–29. (in Japanese)
- Harunari, H.
- 1982 Dotaku no jidai (The Age of Dotaku Bronze Bells). *Kokuritsu rekishi Minzoku Hakubutukan Kenkyu Houkoku (Bulletin of the National Museum of Japanese History)* 1: 1–48. (in Japanese)
- 1987 Dotaku no matsuri (Rituals Involving Dotaku Bronze Bells). *Kokuritsu rekishi Minzoku Hakubutukan Kenkyu Houkoku (Bulletin of the National Museum of Japanese History)* 12: 1–38. (in Japanese)
- 1991a (Depicted Buildings). Yayoi jidai no Hottate-basira Tatemono (*The Yayoi Hottate-pillar Building*), pp.55–69. Osaka: Heritage Research Group. (in Japanese)
- 1991b Kaiga kara Kigou e (From Figure to Sign). *Kokuritsu rekishi Minzoku Hakubutukan Kenkyu Houkoku (Bulletin of the National Museum of Japanese History)* 35: 3–65. (in Japanese)
- 1999 Haniwa no e (Pictorial Representation on Haniwa Clay Cylinders of the Kofun Period). *Kokuritsu rekishi Minzoku Hakubutukan Kenkyu Houkoku (Bulletin of the National Museum of Japanese History)* 80: 203–233. (in Japanese)
- Harunari, H. and M. Imamura (eds.)
- 2004 *Yayoi jidai no jitunendai: tanso 14 nen wo megutte (Absolute Dating for the Yayoi Period: Issues with <sup>14</sup>C Dating Methods)*. Tokyo: Gakusei-sha. (in Japanese)
- Hasegawa, K.
- 1992 Ozu-machi Shinjo Onoe Iseki Shutsudo no Kaiga Doki (Pictured Pottery from the Ozu-machi Shinjo Onoe Site). *Kodai Kibi* 14: 116–120. (in Japanese)
- Hashimoto, H.
- 1996 Yayoi jidai no Kaiga (Pictures in Yayoi Era). In Kashiba-city Nijo-san Museum (ed.) *Yayoi jin no Choju-giga (Choju-giga by Yayoi People)*, pp.7–22. Tokyo: Yuzankaku. (in Japanese)
- Heritage Ikegami Sone Preservation Committee
- 1996 *Shiseki Ikegami sone 95 (Heritage Ikegami Sone 95)*. Osaka: Heritage Ikegami Sone Preservation Committee. (in Japanese)
- 1997 *Ikegami iseki symposium3: yayoi no matsuri to ogata tatemono: Yayoi shinden wo saguru (The Ikegami Sone Site Symposium 3: The Yayoi Ritual and the Large Building: Tracing the Yayoi Shrine)*. Osaka: Heritage Ikegami Sone Preservation Committee. (in Japanese)
- Hirose, K.
- 1995 Kofun jidai zen-chuki no shucho kyokan (King's Residence from the Early to Middle Kofun Period). In Heritage Research Group (ed.) *Transformation of Villages and*

- Regional Societies: Yayoi to Kofun*, pp.5–8. Osaka: Heritage Research Group. (in Japanese)
- 1996a Shinden to Noko girei (Shrine and Farming Rituals). In The Ikegami Sone Site Committee of the National Heritage 20th Anniversary (ed.) *Yayoi no Kango-toshi to Kyodai sinden (The Yayoi Moated Town and the Large Shrine)*, pp.110–123. Osaka: The Ikegami Sone Site Committee of the National Heritage 20th Anniversary. (in Japanese)
- 1996b Yayoi jidai no shucho (The Yayoi Chief: Formation and Development of Political Society). In The Ikegami Sone Site Committee of the National Heritage 20th Anniversary (ed.) *Yayoi no Kango-toshi to Kyodai shinden (The Yayoi Moated Town and the Large Shrine)*, pp.130–144. Osaka: The Ikegami Sone Site Committee of the National Heritage 20th Anniversary. (in Japanese)
- 1997 *Jomon kara Yayoi e no shin rekishi zou (New Perspective to the Jomon-Yayoi Transformation)*. Tokyo: Kadokawa Shoten. (in Japanese)
- 1998a A ‘Shrine’ of the Yayoi Period. In K. Hirose (ed.) *Nihon-kodaishi: Toshi to Shinden no tanjyo (Birth of the Town and the Shrine)*, pp.67–82. Tokyo: Shin jin butsu Ourai Sha. (in Japanese)
- 1998b Yayoi toshi no seiritu (The Establishment of the Yayoi Town). *Kokogaku Kenkyu* 45(3): 34–56. (in Japanese)
- Hosoya, A.
- 2007 “Shakai shokubutsu kohkogaku” kara mita Bali inasaku shakai no minzokushi chosa (Ethnographic Study of Bali Rice Agricultural Activities from the View of ‘Social Archaeobotany’). *Tonan Asia Kokogaku* 27: 19–38. (in Japanese)
- Hudson, M. J.
- 1992 Rice, Bronze, and Chieftains: An Archaeology of Yayoi Rituals. *Japanese Journal of Religious Studies* 19 (2–3): 139–189.
- Hudson, M. J. and S. Kaner
- 1992 Editor’s Introduction: Towards an Archaeology of Japanese Ritual and Religion. *Japanese Journal of Religious Studies* 19 (2–3): 113–127.
- Ikeda, R., H. Kanaseki, A. Higashiyama, N. Higashiyama, M. Sahara and H. Harunari
- 1997 Reki-haku Forum “Dotaku no e to kodomo no e” (Reki-haku Forum “Dotaku Pictures and Children’s Pictures”). In National Museum of Japanese History (ed.) *Dotaku no e o yomitoku (Interpreting Dotaku Pictures)*, pp.63–127. Tokyo: Shogaku Kan. (in Japanese)
- Ikegami Sone Site Committee
- 1996 *Ikegami Iseki wo Horu: 100-nen no kiseki: miete kita Yayoi Toshi (Digging the Ikegami Sone Site: the 100-year History: Appearing Yayoi Town)*. Osaka: Ikegami Sone Committee.
- Inui, T.
- 1996a Yayoi chu-ki ni okeru Ikegami Sone iseki no syuraku-kozo: TOSHI TEKI SYURAKU NO KAIMEI NI MUKETE (The Settlement Structure of the Ikegami Sone Site in the Middle Yayoi: Understanding a Town-like Settlement). *Historia* 152: 17–30. (in Japanese)
- 1996b Osaka-fu Ikegami Sone iseki no Ogata tatemono to Ido, Mainou Ikou: Yoyogi jidai chuki no saisi kukan (The Large Building, the Well and Buried Artifacts in Osaka Ikegami Sone Site: The Middle Yayoi Ritual Area). *Saishi Koko* 5: 5–12. (in Japanese)
- 1997a Nanboku to ni tsuite (The South-North Building). In The Ikegami Sone Site

- Preservation Committee (ed.) *Ikegami sone iseki Symposium 3: Yayoino matsuri to Ogata tatemono: Yayoi shinden wo saguru (The Ikegami Sone Site Symposium 3: The Yayoi Ritual and the Large Building: Tracing the Yayoi Shrine)*, pp.36–37. Osaka: The Ikegami Sone Site Preservation Committee. (in Japanese)
- 1997b Sekki maino iko (The Buried Lithic Artifacts). In The Ikegami Sone Site Preservation Committee (ed.) *Ikegami sone iseki Symposium 3: Yayoino matsuri to Ogata tatemono: Yayoi shinden wo saguru (The Ikegami Sone Site Symposium 3: The Yayoi Ritual and the Large Building: Tracing the Yayoi Shrine)*, pp.38–39. Osaka: The Ikegami Sone Site Preservation Committee. (in Japanese)
- 1998 Ikegami Sone iseki to sono jidai (The Ikegami Sone Site and the Period). In K. Hirose (ed.) *Nihon-Kodaishi Toshi to Shinden no Tanjo (Birth of the Town and the Shrine)*, pp.121–148. Tokyo: Shin jin butsu Ourai Sha. (in Japanese)
- 1999 Ikegami Sone Iseki no chosa kekka no sai kontou (The Review of the Ikegami Sone Excavation Results). In T. Inui (ed.) *Yomigaeru Yayoi no Tosi to Shinden (Reconstruction of Yayoi Town and Shrine: Ikegami Sone Site: The Large Building's Structure and the Analyses)*, pp.289–325. Tokyo: Hihyo Sha. (in Japanese)
- Inui, T. and K. Akiyama
- 1996 Futatsu no kaiga doki (Two Pottery Shards with Pictures). In The Ikegami Sone Site Committee of the National Heritage 20<sup>th</sup> Anniversary (ed.) *Yayoi no Kangou Toshi to Kyodai Shinden (The Yayoi Moated Town and the Large Shrine)*, pp.30–31. Osaka: The Ikegami Sone Site Committee of the National Heritage 20<sup>th</sup> Anniversary. (in Japanese)
- Ishigami, I.
- 1977 Ikegami: Yayoi Mura no Hensen (The Transformation of the Ikegami Sone Village). *Kokogaku Kenkyu* 23–4 (92): 33–59. (in Japanese)
- 1996 Ikegami Sone Iseki ron Sono go (Further Discussion on the Ikegami Sone Site). In the Ikegami Sone Site Committee of the National Heritage 20<sup>th</sup> Anniversary (ed.) *Yayoi no Kango Toshi to Kyodai Shinden (The Yayoi Moated Town and the Large Shrine)*, pp.88–94. Osaka: The Ikegami Sone Site Committee of the National Heritage 20<sup>th</sup> Anniversary. (in Japanese)
- Ishino, H.
- 1991 Sohron (The Review). In H. Ishino, T. Iwasaki, K. Kawakami and T. Shiraishi (eds.) *Kofun Jidai no Kenkyu 3: Seikatsu to Saishi (The Study of the Kofun Era 3: The Life and Ritual)*, pp.3–26. Tokyo: Yuzankaku. (in Japanese)
- 1996 Yayoi no Rokaku — Karako kagi to Yoshino-gari (Yayoi Large Buildings: Karako Kagi and Yoshino-ga-ri). In Kashiba-city Nijyo-san Museum (ed.) *Yayoijin no Chojyu-giga (Chojyu-giga by Yayoi People)*, pp.121–150. Tokyo: Yuzankaku. (in Japanese)
- Ishino, H., H. Hashimoto, K. Tatsumi and K. Nomoto
- 1996 Symposium 'Chojyu-giga by Yayoi People'. In Kashiba-city Nijyo-san Museum (ed.) *Yayoijin no Chouju-giga (Chojyu-giga by Yayoi People)*, pp.62–97. Tokyo: Yuzankaku. (in Japanese)
- Izumi City Education Committee
- 1998 *Shiseki Ikegami Sone 96 (Heritage Ikegami Sone 96)*. Osaka: Izumi City Education Committee. (in Japanese)
- Iwasaki, N.
- 1994 Kinki chiho no Ogata tatemono (Large Buildings in the Kinki District). *Kokogaku Journal* 379: 26–31. (in Japanese)



## Japan Association for Quaternary Research

- 1998 *Nihon no Jinrui Iseki (The Human Site in Japan) (The 4<sup>th</sup> Edition)*. Tokyo: Tokyo University Publication. (in Japanese)

## Jones, M. K.

- 1985 Archaeobotany beyond Subsistence Reconstruction. In G. Barker and C. Ganble (eds.) *Beyond Domestication in Prehistoric Europe*, pp.107–128. Oxford: Academic Press.

## Junker, L. L.

- 1993 The Development of Centralized Craft Production Systems in A.D. 500–1600 Philippine Chiefdom. *Paper Presented at the Society for American Archaeology Meetings, St. Louis, Missouri*.

## Kagamiyama, T.

- 1956a Kango jyukyo shi shoron (Discussion on Moated Settlements) (1). *Shien* 67/68: 1–26. (in Japanese)
- 1956b Kango jyukyo shi shoron (Discussion on Moated Settlements) (2). *Shien* 71: 1–23. (in Japanese)
- 1957 Kango jyukyo shi shoron (Discussion on Moated Settlements) (3). *Shien* 74: 43–62. (in Japanese)
- 1959 Kango jyukyo shi shoron (Discussion on Moated Settlements) (4). *Shien* 78: 29–60. (in Japanese)

## Kambayashi, S.

- 1996 Ikegami Sone iseki ni okeru chusu shisetsu (The Central Features in the Ikegami Sone Site). *Historia* 152: 3–16. (in Japanese)

## Kanaseki, H.

- 1982 Sorei shinko kara shuchorei shinko he (Rituals for the Ancestors' Spirits to the Chiefs' Spirits). *Rekishi Kohron* 9: 72–78. (in Japanese)
- 1983 Yayoi Jidai no Jyujyutu ti Jyugu (Yayoi Ritual Objects and Implement). *Kokogaku Kenkyu* 117 (30–1): 70–81. (in Japanese)
- 1985 Yayoi Doki Kaiga ni okeru Kaoku no Hyogen (Significance of Buildings Depicted on the Surface of Yayoi Pottery). *Kokuritsu Rekishi Minzoku Hakubutsukan Kenkyu Houkoku (Bulletin of the National Museum of Japanese History)* 7: 63–77. (in Japanese)

## Kikuchi, T.

- 1979 Sanukite. *Sekai Kokogaku Jiten (The Encyclopedia of the World Archaeology)*, pp.431. Tokyo: Heibon Sha. (in Japanese)

## Kinoshita, M.

- 1988 Momi no chozo to shukaku (Harvest and Storage of Rice). In H. Kanaseki and M. Sahara (eds.) *Yayoi Bunka no Kenkyu 2 (Study of the Yayoi Culture 2)*, pp.69–83. Tokyo: Yuzankaku. (in Japanese)

## Kishimoto, M.

- 1998 Hottate-Basira Tatemono kara mita Yayoi Syuraku to Syucho (Social Ranking Shown by Post Structure in Yayoi Period Japan). *Kokogaku Kenkyu* 44–4 (176): 79–91. (in Japanese)

## Kishiwada Archaeology Research Group

- 1979 *Sakae-no-ike Iseki (Sakae-no-ike Site)*. Osaka: Kishiwada Archaeology Research Group. (in Japanese)

## Kobayashi, T.

- 1983 Soron: Jomon Keisai (Review: Jomon Economy). In S. Kato, T. Kobayashi and T.

- Fujimoto (ed.) *Jomon Bunka no Kenkyu 2: Seigyō*. (*Studies on the Jomon Period 2: Subsistence*), pp.3–16. Tokyo: Yuzankaku. (in Japanese)
- Kondo, H.  
 1995 Syuraku nai saishi to Syuraku no Kikakusei (Rituals in the Settlement and the Settlement Plan). *Shiga Kohko* 14: 45–61. (in Japanese)
- Kondo, Y.  
 1959 Kyodo-tai to Tan'i Syudan (Community and the Family Unit). *Kokogaku Kenkyu* 21 (6–1): 13–20. (in Japanese)  
 1966 Yayoi Bunka no Hattatsu to Shakai Kankei no Henka (Development of Yayoi Culture and the Transition of Social Relationship). In S. Wajima (ed.) *Nihon no Kokogaku: Yayoi jidai (The Yayoi Period)*, pp.442–459. Tokyo: Kawade Shobo. (in Japanese)  
 1983 *Zenpo-Kouenfun no jidai (The Age of the Key-hole Shape Burial Mound)*. Tokyo: Iwanami Shoten. (in Japanese)  
 1985 *Iwanamikouza Nihon-Kokogaku Introduction to Japanese Archaeology*. Tokyo: Iwanami Shoten. (in Japanese)
- Kouchi Prefecture Education Committee  
 1986 *Tamura Iseki gun (Tamura Sites)*. Kouchi: Kouchi Prefecture Education Committee. (in Japanese)
- Kuze, H.  
 1989 Osaka -wan Nangan ni okeru Takotsubogata doki syutsudo iseki no kentou (Research on South Osaka Bay Archaeological Sites Having Octopus Trap-shape Pottery). *Hohsei Kokogaku* 14: 25–60. (in Japanese)
- Kyoto City Tourist Centre  
 1992 *Kyoto Shinai Iseki Tachiai Chosa Gaiho (Archaeological Sites in Kyoto City Brief Report)*. Kyoto: Kyoto City Tourist Centre. (in Japanese)
- Lee, R. B. and I. DeVore (eds.)  
 1968 *Man the Hunter*. Chicago: Aldine Publishing Company.
- Masaoka, M.  
 1991 Sanyo no Hottate-bashira Tatemono- Kibi Chiho wo Chushin ni (*Hottate-pillar Buildings in Sanyo- Mainly Kibi District*). In Heritage Research Group (ed.) *Yayoi Jidai no Hottate-bashira Tatemono (The Yayoi Hottate-pillar Building)*, pp.152–165. Osaka: Heritage Research Group. (in Japanese)
- Masuda, S.  
 1982 Yayoi jidai no tanemomi no hozon (Storage of Rice Seeds in the Yayoi Period). *Rekishu Kohron* 9: 55–64. (in Japanese)
- Mishina, A.  
 1968 Discussion on the Dotaku. *Chosen Gakuho* 49: 361–373. (in Japanese)
- Miyamoto, N.  
 1991 Yayoi jidai kofun jidai no hottate-bashira tatemono (Hottate-pillar Buildings of Yayoi and Kofun). In Heritage Research Group (ed.) *Yayoi Jidai no Hottate-Basira Tatemono (The Yayoi Hottate-pillar Building)*, pp.33–54. Osaka: Heritage Research Group. (in Japanese)  
 1996 *Nihon Genshi Kodai no Jyukyo Kenchiku (Japanese Prehistoric Architecture)*. Tokyo: Chuo Kohron Arts Publications. (in Japanese)
- Mukoh City Education Committee  
 1996 *Mukoh-shi Maizo Bunkazai Chosa Hokokusho Dai 43 shu (Mukoh City Heritage Research Report 43)*. Kyoto: Mukoh City Education Committee. (in Japanese)

- Nagamatsu, T.  
 1977 Shokubutsu sei ibutsu (Plant Remains). In Tateiwa Site Research Committee (ed.) *Tateiwa Site*, pp.325–333. Tokyo: Kawade Shobo Shinsha. (in Japanese)
- Nakanishi, Y.  
 1987 Yayoi bunka wo ninatta hito tachi (The People in Yayoi Culture: Focusing on Villages along the Kawachi Bay). *Osaka wan wo meguru bunka no nagare (The Osaka Bay Culture)* (Symposium Papers), pp.53–63. (in Japanese)  
 1991 Kawachi no hottate-bashira tatemonmo (Hottate-pillar Buildings in Kawachi). In Heritage Research Group (ed.) *Yayoi-Jidai no Hottate shiki Tatemono (The Yayoi Hottate-pillar Building*, Heritage Research Goup), pp.175–179. Osaka: Heritage Research Group. (in Japanese)
- National Museum of Japanese History (ed.)  
 1997 *Dotaku no e wo Yomitoku (Interpreting Dotaku Pictures)*. Tokyo: Shogaku Kan. (in Japanese)
- Nomoto, K.  
 1996 Minzoku kara mita Yayoi Kaiga (Yayoi Pictures from a View of Folklore). In Kashiba-city Nijyo-san Museum (ed.) *Yayoijin no Chojyu-giga (Chojyu-giga by Yayoi People)*, pp.42–61. Tokyo: Yuzankaku. (in Japanese)
- Oda, F.  
 1985 *Kyushu Kodaibunka no Keisei I: Yayoi Kofun Jidai Hen (The Formation of Kyushu Ancient Culture I: The Yayoi and Kofun Periods)*. Tokyo: Gakusei Sha. (in Japanese)
- Ogasawara, Y.  
 1995 *Gouzoku Kyokan no shutugen to Tenkai* (The Emergence and Development of the Kofun King's Residence). *Kokogaku Journal* 384: 2–3. (in Japanese)
- Okayama Prefecture Education Committee  
 1997 *Kuboki Iseki I (Kuboki Site I)*. Okayama: Okayama Prefecture Education Committee. (in Japanese)
- Osaka Heritage Centre  
 1979 *Ikegami Iseki: Doki-hen (Ikegami Site: Pottery)*. Osaka: Osaka Heritage Centre. (in Japanese)  
 1999 *Shiseki Ikegami Sone 97-98 (Heritage Site Ikegami Sone 97-98)*. Osaka: Osaka heritage Centre. (in Japanese)
- Oyamada, K.  
 1997 Doki kaiga to Dotaku kaiga no hikaku (Comparison of Pictures on Dotaku and Pottery). In K. Hirose (ed.) *Jyomon kara Yayoi e no Shin rekiji zou (The New Perspective of Jomon – Yayoi Transformation)*, pp.277–279. Tokyo: Kadokawa Shoten. (in Japanese)
- Peebles, C. S. and S. M. Kus  
 1977 Some Archaeological Correlates of Ranked Society. *Antiquity* 42: 421–448.
- Pred, A.  
 1985 The Social Becomes the Spatial, the Spatial Becomes the Social: Enclosures, Social Exchange and the Becoming of Places in Skane. In Gregory, D. and J. Urry (eds.) *Social Relations and Spatial Structures*, pp.337–365. London: MacMillan.
- Saeki, H.  
 1992 Yayoi Jidai Kouki no Tokushu na Hottate-Basira Tatemono: Shimo-magari iseki (Special Hottate-pillar Building of Late Yayoi: Shiga Shimo-magari Site). *Shiga Koko* 8: 53–55. (in Japanese)  
 1993 Shimo-magari Iseki Syutudo no Torii jyo ikou (Torii Gate in Shimo-magari Site).

- Shiga Koko* 9: 53–57. (in Japanese)
- Sahara, M.
- 1960 Dotaku no chuzo (Casting the Dotaku). *Sekai kokogaku Taikei 2: Nihon II Yayoi Jidai (World Archaeology 2: Japan II the Yayoi Period)*, pp.92–104. Tokyo: Heibon Sha. (in Japanese)
  - 1964 Sekisei Buki no Hattatsu (Development of Lithic Weapons). In Kagawa Prefecture Heritage Preservation Committee (ed.) *Shiude*, pp.131–145. Tokyo: Shin'yo Sha. (in Japanese)
  - 1978 Chosen shiki sho Dotaku to Nihon no Dotaku (The Korean Small Dotaku and the Japanese Dotaku). In M. Kagawa (ed.) *Usa: Tairiku Bunka to Nihon kodaishi (Usa: Continental Culture and Japanese Ancient History)*, pp.213–230. Tokyo: Kikkawa Kohbunkan, (in Japanese)
  - 1979 *Dotaku*. Tokyo: Kodan Sha.(in Japanese)
  - 1980 Yayoi Jidai no Kaiga (Pictures on Yayoi Pottery). *Kokogaku Zasshi* 66 (1): 102–117. (in Japanese)
  - 1982 34 no Canpus: Rensaku 4 Dotaku no kaiga no 'bunpo' (The 34 Campuses: The 'Grammar' of the Dotaku Pictures). In K. Tsuboi (ed.) *Kokogaku Ronko*, pp.245–280. Tokyo: Heibon Sha. (in Japanese)
  - 1997 Izumi Iwakura Dotaku to Dotaku no e (The New Discovery of Dotaku from Izumi Iwakura and Dotaku Pictures). In National Museum of Japanese History (ed.) *Dotaku no e wo Yomitoku (Interpreting Dotaku Pictures)*, pp.7–62. Tokyo: Shogaku Kan. (in Japanese)
- Sahara, M. and H. Harunari
- 1997 Dotaku no e wo Dou Yomitokuka (How to interpret the Dotaku Icons). In National Museum of Japanese History (ed.) *Dotaku no e wo Yomitoku (Interpreting Dotaku Pictures)*, pp.131–182. Tokyo: Shogaku Kan. (in Japanese)
- Sakai, R.
- 1986 Sekizai no Ugoki (Circulation of Lithic Material). In H. Kaneseke and M. Sahara (eds.) *Yayoi Bunka no Kenkyu 7 (Study of the Yayoi Culture 7)*, pp 98–102. Tokyo: Yuzankaku. (in Japanese)
- Sato, Y.-I.
- 2002 *Ine no nihon-shi (Japan History of Rice)*. Tokyo: Kadokawa Shoten. (in Japanese)
- Sen'nan City Education Committee
- 1995 *Okada Nishi/Uji-no-matsu Iseki Hakkutsu Chosa Hokokusho (Excavation Report of Okada Nishi/Uji-no-matsu Site)*. Osaka: Sen'nan City Education Committee. (in Japanese)
- Shichida, T.
- 1995 Yoshino-ga-ri iseki no kango kukaku (The Plan of the Yoshi-no-gari Site). In The Heritage Research Group (ed.) *Mura to chiiki shakai no henbo: Yayoi kara kofun he (Transformation of Villages and Regional Societies: Yayoi to Kofun)*, pp.9–24. Osaka: Heritage Research Group. (in Japanese)
- Shiga Prefecture Education Committee
- 1992 *Harie Kita Iseki/Harie-gawa Iseki (Harie Kita Site/Harie-gawa Kita Site) (1)*. Ohtsu: Shiga Prefecture Education Committee (in Japanese)
- Shimizu, S.
- 1995 Nara Makimura Iseki (Nara Prefecture Makimuku Site). *Kikan Kokogaku* 51: 73–77. (in Japanese)
  - 1996 Shiba Iseki Dai 20 ji Chosa Shutsudo no Kaiga Doki (Pictured Pottery from the Shiba

- Site 20<sup>th</sup> Excavation). *Mizuho* 19: 39–41. (in Japanese)
- 1997 Shiba-iseki Dai 20 ji Chosa Syutado no Kaiga-doki (Pictured Pottery from the Shiba Site 20<sup>th</sup> Excavation: Part II). *Mizuho* 21: 28–29. (in Japanese)
- Shinji, M.
- 1997 Kamo Iwakura iseki Dotaku 15 no nazo (Fifteen Mysteries of the Kamo Iwakura Dotaku). In Shimane Prefecture Kamo-cho Education Committee (ed.) *Dotaku no Nazo — Kamo Iwakura Iseki (The Dotaku Mystery: The Kamo Iwakura Site)*, pp.98–104. Tokyo: Kawade Shobo Shinsha. (in Japanese)
- Shintaku, N.
- 1994 Torai kei inasaku shuraku ‘Etsuji iseki’ de hakken sareta ogata tatemono ni tsuite (Large Building in the Etsuji Site, a Continental Farmers’ Settlement). *Kokogaku Journal* 379: 4–9. (in Japanese)
- Soejima, K. and M. Shobayashi
- 1995 Ichishi-koku: Hara-no-tsuji iseki to karakami iseki (Ichishi-koku: The Haru-no-tsuji and Karakami Sites). *Kikan Kokogaku* 51: 23–27. (in Japanese)
- Stevens, C. J.
- 1996 *Iron Age and Roman Agriculture in the Upper Thames Valley: Archaeological and Social Perspective*. Unpublished PhD dissertation, University of Cambridge.
- Takahashi, R. and L. A. Hosoya
- 2002 Nut Exploitation in Jomon Society. In J. Hather and S. Mason (eds.) *Hunter-Gatherer Archaeobotany*, pp.146–155. London: University College London Press.
- Takakura, H.
- 1982 Chosen sho Dotaku kara Dotaku he (From the Korean Small Dotaku to the Yayoi Dotaku). *Kokogaku Journal* 210: 10–13. (in Japanese)
- 1995 Yayoi jidai no kango shuraku to ogata tatemono (Yayoi Moated Settlements and Large Building). In The Heritage Research Group (ed.) *Transformation of Villages and Regional Societies: Yayoi to Kofun*, pp.1–4. The Heritage Research Group. (in Japanese)
- Takamatsu City Education Committee
- 1989 *Kume-ike Minami Site: Excavation Report*. Takamatsu: Takamatsu City Education Committee. (in Japanese)
- Takesue, J.
- 1998a Hokubu Kyushu no Yayoi Toshi Ron (The Yayoi Urbanisation in the Northern Kyushu). In K. Hirose (ed.) *Nihon kodaishi-Toshi to Shinden no Tanjyo (Birth of the Town and Shrine)*, pp.37–56. Tokyo: Shin jin butsu Ourai Sha. (in Japanese)
- 1998b Yayoi Kanko Syuraku to Toshi (Yayoi Moated Settlements and Towns). In T. Tanaka and H. Kanaseki (eds.) *Kodaishi no Ronten 3: Toshi to Kogyo to Ryutu (The Issues on Ancient History: Town, Industry and Exchanges)*, pp.81–108. Tokyo: Shogakukan. (in Japanese)
- Tanaka, T.
- 1970 ‘Matsuri’ kara ‘Masturi-goto’ he (From Ritual to Politics). In K. Tsuboi and T. Kishi (eds.) *Kodaishi no Nihon 5: Kinki (Ancient Japan 5: Kinki)*, pp.44–59. Tokyo: Kadokawa Shoten. (in Japanese)
- Tatsumi, K.
- 1996a Yayoi Kaiga to Sinwa no Sekai (Yayoi Pictures and the Mythical World). In Kashibacity Nijyo-san Museum (ed.) *Yayoi-jin no Chojyu-giga (Chojyu-giga by Yayoi People)*, pp.23–41. Tokyo: Yuzankaku. (in Japanese)
- 1996b *Takadono no Kodaigaku: Gouzoku no Kyokan to Oken saigi (Study of Raised-floor*



- Buildings: Kofun King's Residence and the Succession Ritual* (3<sup>rd</sup> Edition). Tokyo: Hakusui Sha. (in Japanese)
- Tatsuno City Education Committee  
 1995 *Yakuyama Maeji Iseki (Yaku-yama Maeji Site)*. Tatsuno: Tatsuno City Education Committee. (in Japanese)  
 1997 *Minami-yama Kofun gun/Minami-yama Takaya Iseki (Minami-yama Kofun Mounds/Minami-yama Takaya Site)*. Hyogo: Tatsuno City Education Committee. (in Japanese).
- Tawara Hon-machi Education Committee  
 1986 *Showa 60 nendo Karako-Kagi Iseki Dai 23, 24, 25 ji Hakkutsu Chosa Gaiho (The 23<sup>rd</sup>, 24<sup>th</sup>, 25<sup>th</sup> Excavation Reports of the Karako Kagi Site)*. Nara: Tawara Hon-machi Education Committee. (in Japanese)
- Thomas, J.  
 1988 Neolithic Explanation Revised: The Mesolithic-Neolithic Transition in Britain and South Scandinavia. *Proceedings of the Prehistoric Society* 54: 59–66.  
 1992 *Rethinking Neolithic*. Cambridge: Cambridge University Press.
- Thompson, G. B.  
 1996 *The Excavation of Knok Phanom Di: A Prehistoric Site in Central Thailand: Volime IV: Subsistence and Environment: the Botanical Evidence: the Biological Remains (Part II)*. Oxbow.
- Tilley, C.  
 1984 Ideology and the Legitimation of Power in the Middle Neolithic of Southern Sweden. In D. Miller and C. Tilley (eds.) *Ideology, Power and Prehistory*, pp.111–146. Cambridge: Cambridge University Press.  
 1999 *Metaphor and Material Culture*. Oxford: Blackwell.
- Toyama, S.  
 1996 Ikegami Sone no plant opal bunseki II (Phytolith Analysis from the Ikegami Sone Site II). In The Research Committee of the Cultural Heritage Ikegami Sone Site (ed.) *Shiseki Isegami Sone 95 (The Cultural Heritage Ikegami Sone 95)*, pp.33–39. Osaka: Research Committee of the Cultural Heritage Ikegami Sone Site. (in Japanese)
- Tsude, H.  
 1983 Kango Syuraku no seiritsu to kaitai (The Formation and Disappearance of the Moated Settlement). *Kokogaku Kenkyu* 29–4 (116): 14–32. (in Japanese)
- Umehara, S.  
 1963 Dotaku ko (Study of the Dotaku). *Kokogaku Zasshi* 48 (3): 1–13. (in Japanese)
- Wajima, S.  
 1948 Genshi shuraku no kosei (The structure of Ancient Settlements). In Tokyo University History Research Group (ed.) *Nihon rekishi gaku koza (Studies on Japanese History)*, pp.1–32. Nigata: Gakusei Shobo. (in Japanese)
- Wang, J.-L.  
 1992 *Yayoi Bunka to Kodai Chugoku (Yayoi Culture and Ancient China)*. Tokyo: Gakusei Sha. (in Japanese)
- Watanabe, H.  
 1984 Shuryo saishu min no jukyo (Hunter-Gatherer's Dwelling). In S. Sugimoto (ed.) *Nihon no Sumai no Genryu: Nihon Kisou Bunka no Tankyu (The Origin of Japanese Dwellings)*, pp.389–417. Tokyo: Bunka Publications. (in Japanese)
- Watanabe, M.  
 1975 *Jomon Jidai no Shokubutsu Shoku (Plant Food of the Jomon Age)*. Tokyo:

- Yuzankaku. (in Japanese)
- Wittfogel, K. A.  
1957 *Oriental Despotism: A Comparative Study of Total Power*. New Haven: Yale University Press.
- Yamada, Y.  
1996 Tori-gata mokuseihin no sai kento (Re-considering Wooden Birds). *Shinano* 48 (4): 269–295. (in Japanese)
- Yawata, I.  
1947 Nihon Kodai no Tatekine (Ancient Pestles of Japan). *Minzokugaku Kenkyu (The Japanese Journal of Ethnology)* 12: 102–106. (in Japanese)