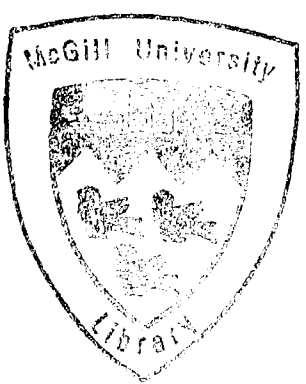
The Jomon Clay Figurines of the Kaminabe Site, Kyushu, Japan

by

Minako Togawa
Department of Anthropology
McGill University, Montreal
June 2003

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Master of Arts



ABSTRACT

This study considers the phenomenon of the sudden and brief appearance of clay figurines in west-central Kyushu towards the end of the Jomon Period (13,000-2,300 ^{14}C years BP). The baked clay figurines representing humans were made throughout the Jomon Period, but mostly in central and northern Honshu. Following a review of previous interpretations of the Jomon clay figurines in general, the study focuses on the case of the numerous figurines recovered at the Kaminabe (*ca.* 2,800 ^{14}C years BP) site in Kyushu. Data on lithic assemblages and plant remains at Kaminabe and the sites in the surrounding area during the period under consideration indicate that small-scale cultivation was being practiced in the region. It is suggested here that the Kaminabe figurines represent the females who played important role in production of plant resources.

RESUME

Cette étude examine le phénomène de la soudaine et brève apparition de figurines d'argile dans le centre sud de Kyushu vers la fin de l'époque Jomon (13,000-2,300 ^{14}C années BP). Des figurines de terre cuite représentant des humains ont été fabriquées tout au long de la période Jomon, mais essentiellement dans le centre et le nord de Honshu. Après avoir passé en revue les interprétations précédentes concernant ces figurines, cette étude se penche sur le cas des nombreuses figurines trouvées à Kaminabe (*ca.* 2,800 ^{14}C années BP) sur l'île de Kyushu. Les renseignements sur les assemblages lithiques et les résidus végétaux à Kaminabe, et obtenus des sites entourant la région en question, indiquent que l'agriculture à petite échelle y était pratiquée durant la période étudiée. Il est suggéré ici que les figurines de Kaminabe représentent les femmes qui ont joué un rôle important dans la production de ressources agricoles.

ACKNOWLEDGEMENTS

This research was supported by many people and institutions to whom I would like to extend my sincere thanks.

First, I wish to thank my graduate committee: Professor Fumiko Ikawa-Smith, Professor Michael S. Bisson, and Professor Bruce G. Trigger. Professor Fumiko Ikawa-Smith, my thesis supervisor, has given me invaluable advice and encouragement. Without her substantial assistance, I would not have been able to see this research through.

I extended my gratitude to Mr. Koichi Tomita of the Kumamoto City Education Board, Ms. Noriko Minoguchi of the Kumamoto City Museum, Mr. Takuji Noda of the Kumamoto Prefecture Education Board, and the staff at the Kumamoto Prefecture Education Board for giving me access to the specimens and their kind assistance.

A special thanks to Mr. Toshihisa Nakamura of the Kitakyushu City Buried Cultural Properties Center, who has always given me advice and encouragement; and Mr. Takeshi Furuya of the Tokyo National Museum, who has offered me an opportunity to meet many archaeologists studying Jomon clay figurines in the Kanto area.

I also would like to thank Alexander Monteil for his translation of my abstract and his friendship.

The original idea of this research was inspired by Professor Carol Kramer when I was taking her course at University of Arizona. I wish to express my gratitude but also deep regret over her passing.

Finally, I dedicate this thesis to my parents (Eiji and Emiko Togawa), my brother (Daisuke Togawa), my uncle (Takehisa Togami), and my aunt (Etsuko Togami) for their continuous support and encouragement.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. Introduction

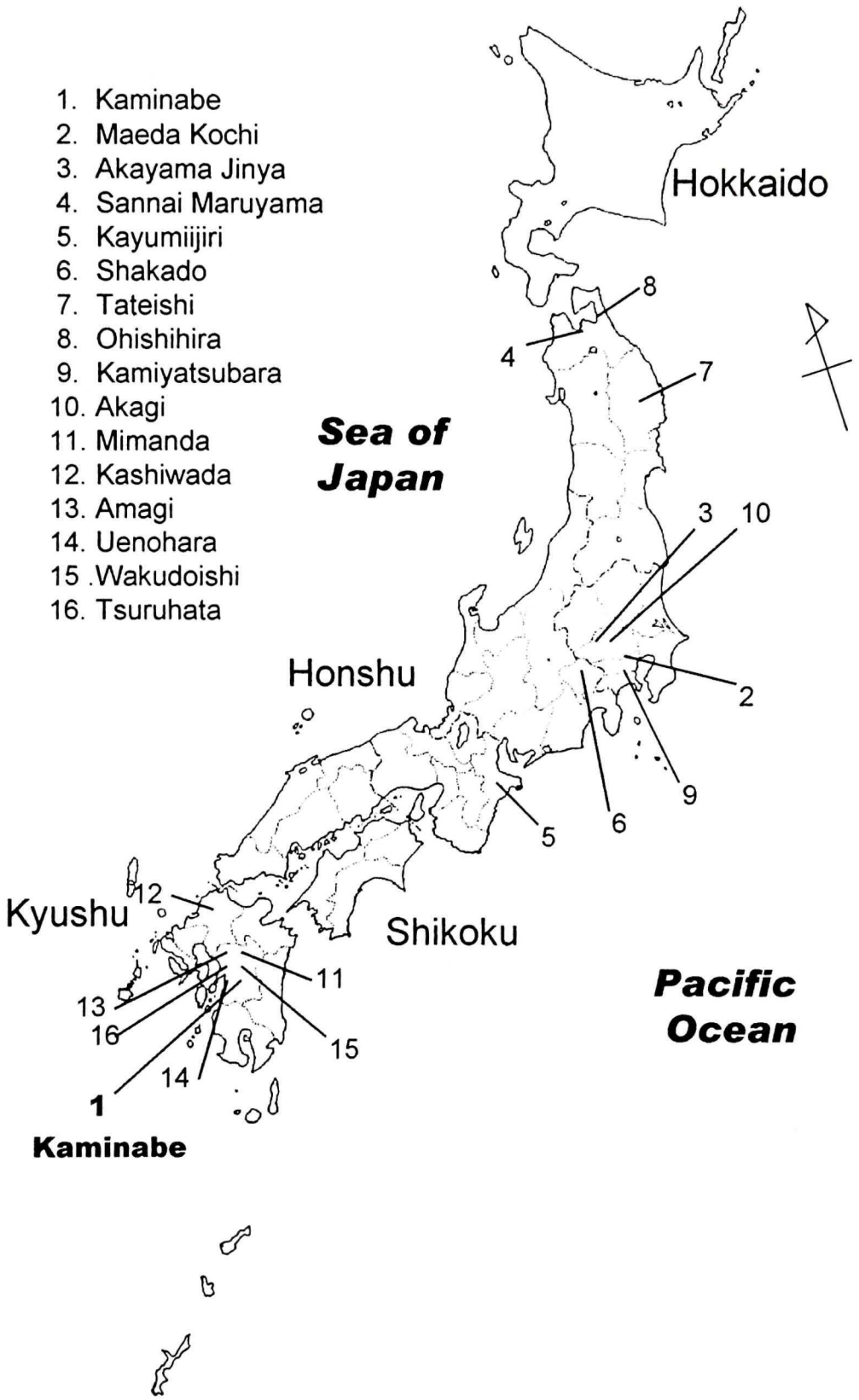
Jomon clay figurines, which represent human beings, appeared in the Incipient Jomon period (13,000-10,000 ^{14}C years BP) and they continued to be made throughout the Jomon period (13,000-2,300 ^{14}C years BP). In Japan, they are generally recognized as "second category tools," in contrast with "primary category tools," which are utilitarian tools (e.g., Kobayashi T. 1977: 45).[1] The clay figurines have a great regional diversity and they are not distributed evenly throughout the Japanese archipelago. Some concentrations of figurines can be observed in certain regions and periods.

Although the Jomon figurines have been studied for a long time, the subject recently has stagnated (Kaneko 1997:326). Very little interpretative work has been done on their meaning and significance. This is likely because of the lack of methodology and the persistence of dominant interpretations. Our interpretations sometimes reflect current ideologies (Conkey 1983; Dobres 1992). The case of the Upper Paleolithic "Venus" figurines in Eurasia has been discussed by a number of scholars, who have pointed out that "Venus" is an inappropriate name for the figurines (Bisson and White 1996; Dobres 1992) and that its use has narrowed the possibilities for alternatives—as if fertility goddess were the only function of figurines (Meskell 1995; Rice 1981). The situation in Japan is probably similar. A number of new possibilities arise once we get beyond the preoccupations of previous interpretations (Ikawa-Smith 2002: 352).

In the first half of this thesis, I will review the previous interpretations and examine their problems. Then, I will discuss in detail the case of the Kaminabe site (*ca.* 2,800 ^{14}C years BP) in Kumamoto prefecture, Kyushu (the southern island) (Figure 1). Unlike in other sites in southwestern Japan, a large number of the clay figurines were

recovered from the Kaminabe site dating to the end of the Jomon period. During the transitional period from the last trimester of the Late to the beginning of the Final Jomon, the number of clay figurines increased dramatically in the Kumamoto region. A shift in subsistence practices, on the one hand, and an increase of the clay figurines, on the other, have been observed for that time. Ikawa-Smith (ibid.) has suggested that the Jomon clay figurines be approached with the probable contribution of women in economic activities in mind. I will take up her suggestion, with particular reference to subsistence practices at the Kaminabe site. It has been argued that the subsistence shift to small-scale cultivation had taken place in the Kumamoto region (e.g., Kagawa 1967). This thesis will explore the significance of the Kaminabe clay figurines in the contexts of increasing reliance on cultivation and women's role in this subsistence shift.

Figure 1. Jomon Sites Mentioned in the Text



2. The Jomon Period

The Jomon period was named after "cord-marked" patterns on pottery produced at that time. It is generally recognized that the appearance of pottery marked the beginning of the Jomon period in the Final Pleistocene. The Jomon period is represented by some 10,000 sites and, based on radiocarbon determinations, is usually divided into six subperiods: Incipient (13,000-10,000 BP), Initial (10,000-6,000 BP), Early (6,000-5,000 BP), Middle (5,000-4,000 BP), Late (4,000-3,000 BP), and Final (3,000-2,300 BP) (Taniguchi 2001). This period is followed by the Yayoi period, when subsistence was based on rice paddy agriculture. It should be noted that researchers from the National Museum of Japanese History have recently reported that AMS dating of samples from the initial Yayoi period sites indicate that the Yayoi period actually began around 1,000 BC (Harunari *et al.* 2003). The dates were obtained on 32 samples—carbonized residues on pottery sherds and wood fragments—from sites in northern Kyushu and South Korea. They indicate that full-scale rice agriculture in Kyushu began some five hundred years earlier than had been thought and that the last phase of Jomon overlapped the initial Yayoi.

The Japanese Archipelago is mountainous and mostly forested. The forests are roughly of three kinds: mixed coniferous and deciduous forest (northeast Hokkaido and higher altitudes in Honshu), deciduous broad-leaf forest (eastern Japan) and evergreen broad-leaf forests (western Japan). The Archipelago also has a long coastline which offers many natural inlets. This topography allows for access to terrestrial and littoral resources. Jomon people are usually called "affluent foragers". It is believed that in the Jomon period subsistence consisted of hunting, gathering, fishing, and some cultivation.

Kobayashi T. (1996, 1985) pointed out that Jomon subsistence was clearly seasonal. Based on recovered remains, it is estimated that over 60 species of mammals, 350 species of shellfish, 70 species of fish, 35 species of birds, and 55 species of plants were eaten by Jomon people (Kobayashi 1996:72). Since plants do not preserve well, it is possible that a greater number of plant species were consumed. People depended on seasonally abundant, selected local resources, which created regional variation in resource utilization patterns over time. Some sites suggest that mass processing of certain food resources had taken place at specific locations, such as salmon processing at the Maeda Kochi site, Tokyo (Matsui 1996) and nut processing at the Akayama Jinya site, Saitama (Kanebako 1996). A new technology, ceramics, was adopted for processing and storing these foods. Pottery was used for cooking, making it possible to eat many new kinds of food that had not been eaten before. Moreover, their subsistence level allowed those people to have a sedentary life.

We can also recognize regional diversity in artifacts. For example, there are approximately 70 types of ceramic vessels throughout the Jomon period (Kobayashi T. 1996). Ceramic style zones were created by the functional and stylistic diversity of ceramics through time. The Jomon period also shows great socio-cultural complexity. Elaborate artifacts in both utilitarian tools and second category tools have been recovered. Some features, like stone circles from the Late and Final Jomon, suggest community-scale ceremonies. A number of ornaments, such as jade beads indicate long-distance trade. Besides "valuables", some settlement patterns which appear highly planned, such as the Sannai Maruyama site in Aomori prefecture, suggest that these were not simple egalitarian societies.

3. Jomon Clay Figurines

Jomon clay figurines have been recovered from almost every part of Japan. A total of 10,683 were documented by the National Museum of Japanese History in 1991 (National Museum of Japanese History 1992), when Yaegashi organized a study group to create the database on Jomon clay figurines. The number of recovered figurines has increased since then. Their distribution is uneven, both in time and space (Figure 2 and Table 1). There are concentrations of figurines in the Pacific side of northern Honshu (the main island) and central Honshu, while the figurine frequency is low in western Japan (except Nara and Kumamoto prefectures). It should be noted that 80 percent of the Jomon sites, or about 8,000 sites, occur in the northern half of Honshu (deciduous forest zone). This is where a large number of figurines are found. The figurines also show great regional variability in form. Over 60 types have been identified (Ueki 1990: 56).

The oldest clay figurine dates from the Incipient Jomon, recovered from a pit-house along with pottery sherds at the Kayumiijiri site, Mie prefecture. Since the excavation had taken place after the study by the National Museum of Japanese History in 1991, the figurine is not shown in the Table 1. A trapezoid-shaped head is attached on a torso shaped like an inverted triangle; breasts and belly are recognizable. Unlike most other figurines, this one was found intact (see below).

During the Early Jomon, regional characteristics of figurines became more explicit. Some types are associated with eastern Japan, while the number of figurines is quite small in western Japan. In the Middle Jomon, clay figurines continued to be produced in eastern Japan and regional diversities became more distinctive. At some sites,

Figure 2. Geographic Distribution of Clay Figurines by Prefecture
(Modified after National Museum of Japanese History 1992:490)

1.Hokkaido
2.Aomori
3.Iwate
4.Miyagi
5.Akita
6.Yamagata
7.Fukushima
8.Ibaragi
9.Tochigi
10.Gunma
11.Saitama
12.Chiba
13.Tokyo
14.Kanagawa
15.Niigata
16.Toyama
17.Ishikawa
18.Fukui
19.Yamanashi
20.Nagano
21.Gifu
22.Shizuoka
23.Aichi
24.Mie
25.Shiga
26.Kyoto
27.Osaka
28.Hyogo
29.Nara
30.Wakayama
31.Tottori
32.Shimane
33.Okayama
34.Hiroshima
35.Yamaguchi
36.Kagawa
37.Tokushima
38.Ehime
39.Kochi
40.Fukuoka
41.Saga
42.Nagasaki
43.Kumamoto
44.Oita
45.Miyazaki
46.Kagoshima
47.Okinawa

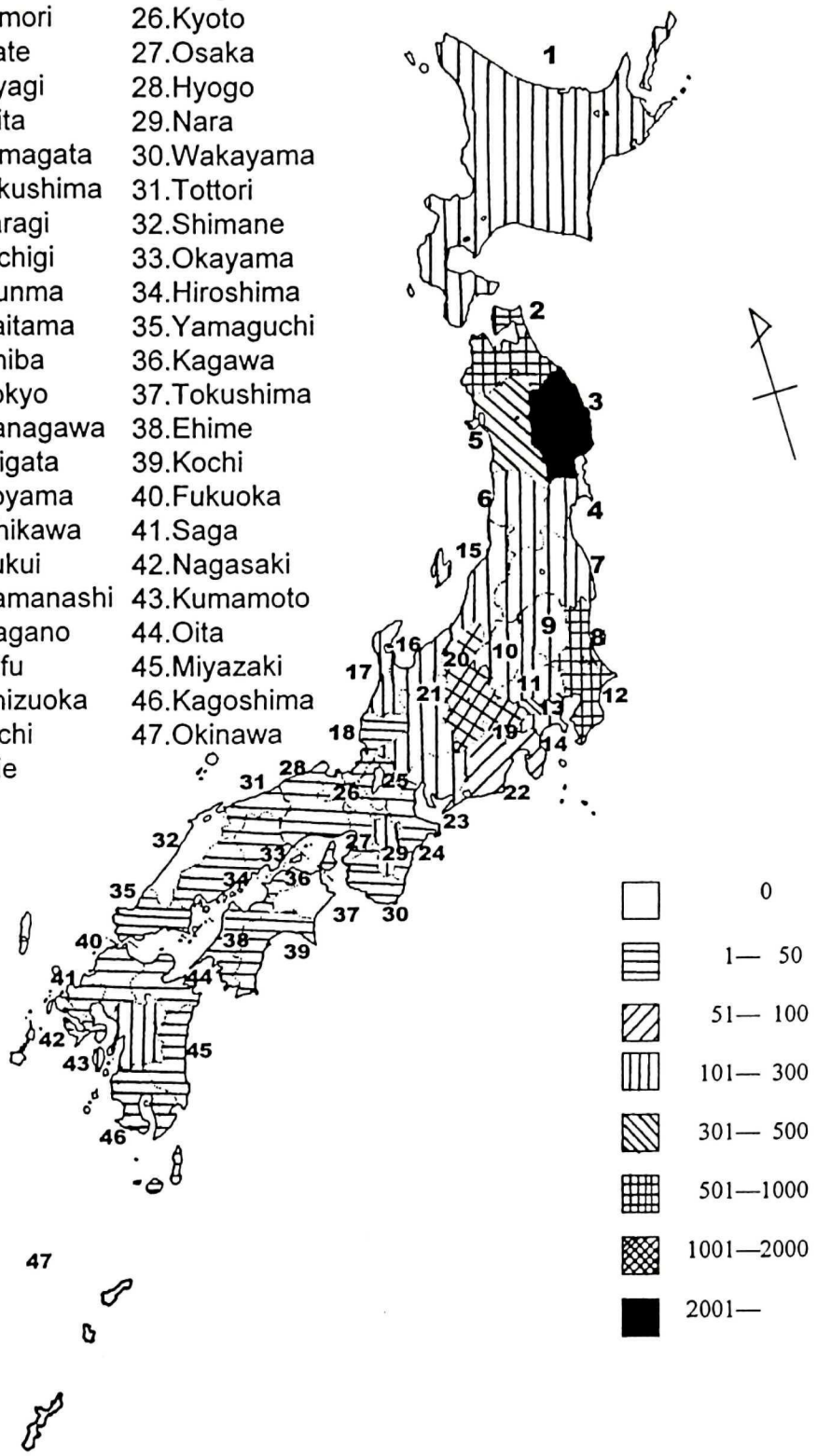


Table 1. Time-Space Distribution of Jomon Clay Figurines

Prefectures	Incipient	Initial	Early	Middle	Late	Final	Unknown/ Unentered	Total No.
1 Hokkaido	0	0	2	39	48	193	11	285
2 Aomori	0	1	2	105	207	306	12	629
3 Iwate	0	0	89	166	739	1,261	25	2,182
4 Miyagi	0	0	4	113	49	35	1	188
5 Akita	0	0	1	50	157	227	1	446
6 Yamagata	0	0	1	59	67	69	4	179
7 Fukishima	0	0	0	40	169	36	3	241
8 Ibaragi	0	12	1	10	636	260	16	803
9 Tochigi	0	0	0	0	99	22	0	106
10 Gunma	0	0	7	4	100	59	15	152
11 Saitama	0	1	1	15	81	120	6	217
12 Chiba	0	24	2	15	393	359	7	788
13 Tokyo	0	0	2	246	60	71	2	373
14 Kanagawa	0	0	0	58	38	11	2	108
15 Niigata	0	0	0	127	53	4	1	183
16 Toyama	0	4	5	112	50	37	0	180
17 Ishikawa	0	0	0	33	117	113	3	168
18 Fukui	0	0	0	2	4	0	0	6
19 Yamanashi	0	0	12	1,319	76	22	39	1,469
20 Nagano	0	1	1	812	256	96	1	1,169
21 Gifu	0	0	0	59	22	35	4	105
22 Shizuoka	0	0	0	18	16	10	9	53
23 Aichi	0	4	3	2	63	147	2	218
24 Mie	0	1	0	0	1	2	0	3
25 Shiga	0	0	0	0	2	5	0	6
26 Kyoto	0	0	0	1	4	2	0	5
27 Osaka	0	2	0	0	8	44	0	46
28 Hyogo	0	0	1	0	1	0	0	2
29 Nara	0	0	0	0	2	193	1	195
30 Wakayama	0	0	0	0	1	1	0	2
31 Tottori	0	0	0	0	1	0	0	1
32 Shimane	0	0	0	0	0	0	0	0
33 Okayama	0	0	0	0	6	3	0	6
34 Hiroshima	0	0	0	0	2	0	0	2
35 Yamaguchi	0	0	0	0	3	2	0	3
36 Kagawa	0	0	0	0	1	0	6	7
37 Tokushima	0	0	0	0	0	0	0	0
38 Ehime	0	0	0	0	0	3	0	3
39 Kochi	0	0	0	0	1	0	0	1
40 Fukuoka	0	0	0	0	17	13	7	24
41 Saga	0	0	0	0	0	3	0	3
42 Nagasaki	0	0	0	0	7	8	0	8
43 Kumamoto	0	0	0	0		108	0	108
44 Oita	0	0	0	0	7	0	0	7
45 Miyazaki	0	0	0	0	2	2	0	2
46 Kagoshima	0	0	0	0	1	3	0	3
47 Okinawa	0	0	0	0	0	0	0	0
Totals	0	50	134	3,405	3,675	3,774	178	10,683

Modified after National Museum of Japanese History (1992:484)

large numbers of figurines have been recovered, such as the Sannai Maruyama site in Aomori prefecture and the Shakado site in Yamanashi prefecture.

Relatively large-sized and free-standing figurines also appeared. Ueki (1990:56) pointed out two characteristics of "large" figurines: (1) a three-dimensional form, and (2) the capacity to stand on their own feet. These figurines appeared in the Middle Jomon and replaced flat forms. Ueki argues that the sides and back parts of the flat figurines were not carefully prepared. Since they could not stand by themselves, they would have been made to lean or were hung and presumably, therefore, viewed only from the front. By contrast, "large" figurines show careful work. They were made to stand on their feet, to be viewed from 360 degrees. To Ueki (1990:59), these differences suggest differences also in function: for example, "large" free-standing figurines may have been used for communal rituals; they were sometimes treated differently (see below).

In the Late Jomon, regional diversity increased. Harada (1997) suggested that a shift may have occurred in the manner of production from small-scale to mass-product at certain sites. It is in this context that figurines appeared in Kumamoto, Kyushu. During the Final Jomon, two distinctive types were widely produced: Mimizuku type in Kanto (central Honshu) and Shakoki type in Tohoku (northern Honshu). Clay figurines continued to be made throughout the Jomon and disappeared at the beginning of the Yayoi. There are some clay containers, dating to the Yayoi period, that are similar to Jomon clay figurines. Unlike Jomon figurines, these appear to have been containers for infant skeletal remains.

Three major points have been discussed in Jomon figurine studies:

(I) Jomon clay figurines may represent females

This idea has been emphasized since the beginning of clay figurine studies. Some figurines clearly show female features, such as breasts and prominent abdomens, but some are not so obvious. There are no figurines which clearly represent males (Kaneko 2001:16). Some figurines are not certain to be human representations at all.

Kobayashi T. (1977, 1996, 2000) suggested that clay figurines were representations of asexual spirits. He emphasized that not only women but men also have breasts, pointing to the existence of male representations with breasts in other parts of the world. While acknowledging the female features in the figurines, he does not see femaleness as the primary element of figurines. According to him, breasts on figurines might have served to distinguish the front from the back of the body.

The majority of archaeologists, however, agree that Jomon clay figurines represented adult human females. Since most early types of figurines show female features, Ono (1984:20, presented as Hamano 1990: 23) noted that Jomon clay figurines from the very beginning represented female images.

(II) Very few figurines recovered intact.

Figurines are usually recovered in fragments and can rarely be conjoined with each other. Still, some fragments recovered from separate locations in sites have been successfully conjoined. Exceedingly rare, they have been taken as evidence for the idea, advocated since the early stages of the figurine studies (since Tsuboi 1895), that Jomon clay figurines had been intentionally broken. If figurines were accidentally broken, then nearby pieces should be conjoined. Yet, compared with other artifacts made of clay, such

as pottery, tablets, and earrings, the rate of conjoined pieces of figurines is remarkably low.

Even at sites where a large number of figurine fragments have been recovered, the situation is the same. For example, at the Tateishi site in Iwate prefecture, 270 pieces of fragments were recovered, and the rate of conjoined pieces was only 15.9%. At the Shakado site in Yamanashi prefecture, 1,116 fragments were recovered, only 2.7% of them conjoined (Taniguchi 1990:64-65). Very rare instances occurred at the Shakado site, where two fragments recovered from separate locations on the site (approximately 230m away) were conjoined; at the Ohishihira site in Aomori prefecture and the Kamiyatsubara site in Tokyo, it was reported that fragments 100-150m apart fitted together. Based on these reports, Taniguchi (1990:66) concluded that clay figurines were intentionally broken. Nevertheless, in the beginning, clay figurines clearly were not supposed to be broken. According to Taniguchi (ibid.) and Harada (1995:78), the practice began with the free-standing type that appeared during the Middle Jomon.

A number of archaeologists agree with "the clay-figurine destruction hypothesis" and propose various ideas as to how the figures were broken. Kobayashi T. (1977), for example, indicated that figurines were not dashed or cut by sharp objects. They seem to have been wrenched off by hand. Based on the breakage patterns of Middle, Late, and Final Jomon figurines, he presented "the chocolate bar hypothesis" (1977), suggesting that they were made to be broken along distinct lines much like chocolate bars today. Because people believed that every part of a body has a meaning and function, according to Kobayashi, they were able to break off the parts they wanted.

Noto (1983), however, showed that it was structurally reasonable for parts to be broken in this manner, since the figures were made by joining parts, such as heads, arms,

and legs. Hamano (1990) also disagreed with the majority view advancing this hypothesis. Based on her analysis of the Akagi site in Saitama prefecture, she believed that the clay figurines were not intentionally broken at all, and she pointed to three considerations: the depositional contexts, the conjoin patterns, and the breakage pattern. In other words, (1) fragments of figurines were thrown away in the same way as other artifacts; no special treatment is observable. (2) Conjoined fragments were recovered nearby, with no pattern of rejection. (3) The missing parts of figurines were varied; there is no observable pattern of breakage (for example, how much or what parts they lacked before being thrown away). Therefore, she concluded, there is no indication of intentional breakage.

After examining the same depositional context as Hamano discussed, however, Fujimura H. (1991) took an opposite view—namely, that the figurines were indeed deliberately broken. In the absence of clear evidence for "the clay-figurine destruction hypothesis", archaeologists have offered different interpretations, depending on their perspectives (Kaneko 1997).

(III) Few figurines were recovered in association with special features

Although interpretations of some contexts present problems, depositional contexts are important when considering the functions and usages of figurines. In almost all cases, figurines were recovered as fragments from inside of dwellings and shell middens (or refuse deposits), along with other remains—such as pottery sherds, and broken stone tools.

There were some exceptions in the depositional context. Some figurines, dating to the Middle and Late Jomon periods, were recovered from the contexts that suggest intentional burial. Yet even these figurines were often incomplete. Only in very rare

cases, large and complete specimens were recovered from burial-like features. Such special treatments, however, have been rarely encountered in the recent excavations (Kaneko 2001:17).

3.1 Interpretations of Clay Figurines

Archaeologists have tried to explain the characteristics delineated above. In this section, I will review the earliest to the most recent interpretations, which fall roughly into two groups: (I) magic and (II) symbols of fertility and mother goddesses.

(I) Magic

Shirai (1886) was the first scholar to discuss this. He noted that figurines served as ornaments or amulets. Yawata (1959, summarized by Kaneko 2001:17) presented an ethnographic example, where people stroked part of a figurine and threw it into the river. Esaka (1960, summarized by Okuyama 1990:19) suggested that they broke parts of the figurine which corresponded to an injury they might have sustained. Based on ethnographic data, Yawata and Esaka argued that clay figurines were substitutes for sick or injured human beings. This interpretation does not explain why most figurines were female representations (Kaneko 2001:17). Women were not the only ones whose health was at risk.

(II) Symbols of fertility and mother goddesses.

The Jomon figurines as fertility symbols have been considered by various authors since Ohno (1910). One widely cited interpretation is that of Mizuno (1974), who reconstructed a system of figurine ritual practice. According to his analysis, every

figurine represents females in a reproductive state who fall under any of three aspects: (1) women who will be mothers, (2) women who are pregnant, and (3) women who nurse children. These aspects show a process whereby women who are meant to be mothers become pregnant, give birth, and finally take care of their children. He concluded that the ritual practice was based on an idea of transmigration; in other words, figurines played a role in the cycle of fertilization, death, and rebirth. In this practice, adult women depicted all these aspects in figurines, which they intentionally broke (killed) at the time of delivery. The fragments were then scattered all over the site, empowering everything with the power to birth, including human beings and plants. The scattered broken (killed) fragments were also believed to be revived as plants.

This interpretation, one of most influential among Jomon-figurine studies, supports the Middle Jomon cultivation hypothesis of Fujimori (1964). Although Mizuno has criticized previous "descriptive-classificatory" (Ikawa-Smith 2002:345) studies and analyzed the figurines themselves and their depositional contexts before reconstructing the figurine ritual, his own interpretation was filled with preconceptions. Hamano (1990:56) strongly criticized his scenario and interpretation for being too far removed from any observation of the figurines themselves. While his work is interesting, Mizuno failed to undertake archaeological verification of his idea (Kaneko 2001:23). Therefore, the question remains: Why did people break all three aspects of their figurines. If each aspect had different functions, they should have been treated differently. If people wished for birth/rebirth, why did they not break pregnant ones only?

Yoshida (2000) further believes that the Jomon figurine represented a mother goddess. Being a mythologist, he approached figurines based on myths in *Kojiki* and *Nihon Shoki* (both are Japanese chronicles recorded in eighth century) and folktales from

various parts of Asia. He found many similarities between goddesses in those myths and the old women of folklore who inhabited the mountains. Both produced various foods and a large number of children during life; after death, many plant foods and goods valuable to humans were produced from their dead, dismembered bodies (sometimes they were burned to death). Yoshida believes that the clay-figurine practice was based on those stories and suggests the following: (1) all figurines showing gender features represented females; (2) while the figurines were made precisely, every figurine has been found scattered in the manner that the goddesses and the old women were supposed to have died.

From an archaeological perspective, it is hard to accept Yoshida's story, as the archaeological evidence he used consisted of figurines from only the central Honshu region. He used these figurines to make claims with respect to all Jomon clay figurines. Not all Jomon clay figurines show female physical characteristics, as most of the figurines of the central Honshu in the Middle Jomon period do. Moreover, it is still questionable whether intentional breakage actually took place.

Watanabe H. (1997, 1998, 1999) tried to solve the mystery of the Jomon clay figurines through an ethnoarchaeological study, referring to a wide range of ethnographic examples of anthropomorphic artifacts and myths, including those of Ainu. "Jomon Clay Figurines and the Goddess Cult," his last work, consisted of three parts: (1) the morphological analysis of figurines, (2) the similarities with the family goddess of the Matagi hunters of northern Honshu, and (3) the origin of the Jomon figurines.

In the first part, he analyzed forms of anthropomorphic figurines from modern hunting-gathering societies around the world. His analysis of the functions of figurines is based on a distinction between dolls/toys and spiritual/deity figurines. Most spiritual/deity figurines showed supernatural features, especially in their facial

expressions, while dolls or toys did not (Watanabe H. 1997:869). He concluded that the Jomon figurines clearly fell into a category of representations of spirits or deities. After that, he analyzed sex in the Jomon figurines, which he believed were female representations. He focused especially on the breast and abdomen features (ibid. 886). Since the figurines lacked genitals, he argued, these features symbolized motherhood rather than womanhood. According to Watanabe, breasts represented nursing and abdomens pregnancy, both symbols of motherhood (ibid. 889). Hence his conclusion that the Jomon figurines were female spirits/deities—that is, mother goddesses symbolizing fertility or fecundity.

In the second part of his study, Watanabe H. (1998) pointed to similarities between the Jomon figurines and the family goddess/home spirit of the Matagi hunters of northern Honshu. He considered three factors: (1) the fertility goddess, (2) the similarity in the distribution, (3) the similarity in morphology. Moreover, he emphasized the continuity of these two traditions (ibid. 132-143).

In the last part, he turned to the genealogy of the Jomon figurines (Watanabe H. 1999). There, he argued for continuity with the Paleolithic figurines of Europe. Since most of European Paleolithic figurines do not show facial features, he believed that the Jomon figurines were derived from the figurines of Lake Baikal region in Paleolithic times. Therefore, Jomon clay figurines represented mother goddesses, symbolizing fertility or fecundity, and their origins are traceable to the Paleolithic of Eurasia. Second, Jomon tradition can be observed in the family goddess/home spirit practices of the Matagi hunters.

This work by Watanabe H. does not contain new information. It should be noted that his analysis on clay figurines was based on observations that Ohno (1910) and Torii

(1922) had made long ago (Ikawa-Smith 2001:348), and that since then, a great number of figurines have been recovered. Moreover, although Watanabe H. claimed that the Jomon figurines are derived from Lake Baikal figurines, many of the Siberian figurines do not represent motherhood. Some of them depict both elderly and pre-reproductive women.

All these interpretations emphasized maternity, fertility, and mother goddesses. As Fujimura J. (2000:87) noted, it is doubtful that people in societies based on hunting, gathering, and small-scale cultivation truly desired a large number of children, particularly since the figurines were not made in the Yayoi period, when people practiced full-scale agriculture and might have needed as many children as laborers (Ueno 1985:210). In the wake of the ethnographic evidence from seventeenth-century Iroquoian society, there has been no documented proof that having many children increased women's prestige. The evidence suggests that women spaced births far apart in order to have fewer children (Trigger 1990). Having a safe delivery may have been a greater concern than having many children (Makabe 1987), since losing a productive member of society led a greater impact on it.

3.2 Diversity of Uses and Functions

It should be noted that both interpretations discussed above search for a single function and then apply them to all the figurines throughout the Jomon period, which covered over ten thousand years. Harada (1995:219) believed his analysis of early figurines showed that Jomon figurines emerged in more than one region. Kaneko (2001:26) further noted that discontinuities in figurine production were observable in some regions. Contrary to the dominant interpretations, a number of archaeologists consider that uses and functions

of figurines were diversified (Hamano 1990: 71; Ikawa-Smith 2002: 348; Kaneko 2001; Nagamine 1986). As noted above, the Jomon period lasted over ten thousand years and the clay figurines show a great diversity in form depend on regions and time periods. The different depositional contexts mentioned above also suggest that the figurines were treated in different ways. The figurines may have served in a variety of ways to meet the local needs. Therefore, it is hardly expected that all figurines should have had a single function throughout the Jomon period.

More time-space focused studies are needed. In this respect, Kaneko's work (2001) on Shakoki (goggle-type) figurines is significant. Unlike other figurine studies, Kaneko's (ibid.) focused on Shakoki figurines produced in the northern part of Honshu, particularly in the Kamegaoka style zone of the Final Jomon. He discussed mainly larger-size Shakoki figurines with reference to subsistence (see below). He considered the figurines as objects of personal worship which were owned by females. These figurines were produced by male craftsmen for females who both owned and used them in various ways. Some figurines might have been broken while they were carried and then repaired and passed on to daughters (ibid.).

Commenting on the sudden increase of figurines in the end of Jomon period in Kyushu, Kobayashi T. (1993) suggested that, the phenomenon represented "a strengthening of Jomon tradition (ibid: 92)" against the new culture, including full-scale rice cultivation from outside the Japanese Archipelago. Matsumoto (2000), in her cognitive approach, noted that the artifacts from the Jomon/Yayoi transitional period in Kyushu revealed a tension between Jomon and Yayoi cultures. Even though the new AMS dates (see pages 2-3) suggest temporal overlap of the initial Yayoi and final Jomon, distributions of the Jomon-style artifacts and the Yayoi-style artifacts had separated. The

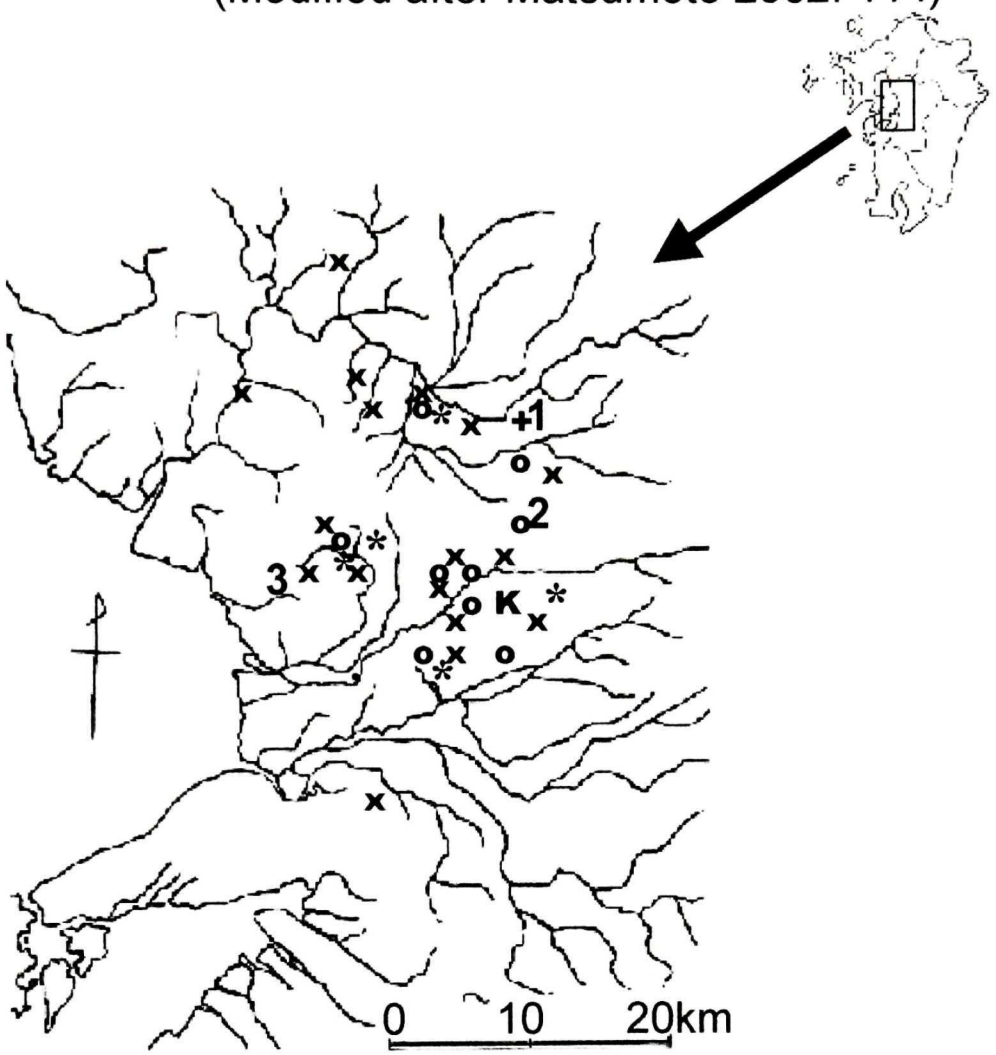
sites which produced Jomon-style artifacts, such as clay figurines and cross-shaped stone tools, appear to have rejected artifacts with Korean characteristics. According to Matsumoto, this indicated that Jomon cultures were at first incompatible with the new culture.

4. Research Question

As we saw in the previous section, more than 10,000 fragments of Jomon clay figurines have been recovered and they are highly diversified by regions and time periods. It is not possible to deal with all the different manifestations of figurines at one time and generalize their functions and significance. Therefore I will examine the figurines from a specific region. The clay figurines are mostly absent until the Late Jomon period in Kyushu (Table1). In Kumamoto prefecture a very large number of figurines are known from the brief transition from the Late to Final Jomon periods (Figure 3). Of all the sites in that region, Kaminabe is exceptional, with 122 figurine fragments recorded from this site alone. The second largest number, 55 fragments, came from the Mimanda site (north of the Kaminabe). In most of the other sites, only about ten figurine fragments were recovered.

I have focused on this intriguing phenomenon, which saw a dramatic increase in the number of clay figurines at the Kaminabe site within a short period. This increase may be related to a change in subsistence practice and to women's role in it. I will first present a description of the Kaminabe site and the Kaminabe figurines. Then, I will examine the evidence for small-scale cultivation, based on previous research and lithic assemblage from the Kaminabe and two neighboring sites, and women's contribution to the small-scale cultivation. Lastly, based on that discussion, I will discuss the significance of the Kaminabe clay figurines.

Figure 3. Distribution of Sites Recovered Figurines
in the Kumamoto Region
(Modified after Matsumoto 2002: 114)



K: Kaminabe
1: Mimanda
2: Wakudoishi
3: Tsuruhata

Number of Figurines
+ 55
* 9-17
X 3-7
O 1-2

5. The Kaminabe Site, Kumamoto Prefecture

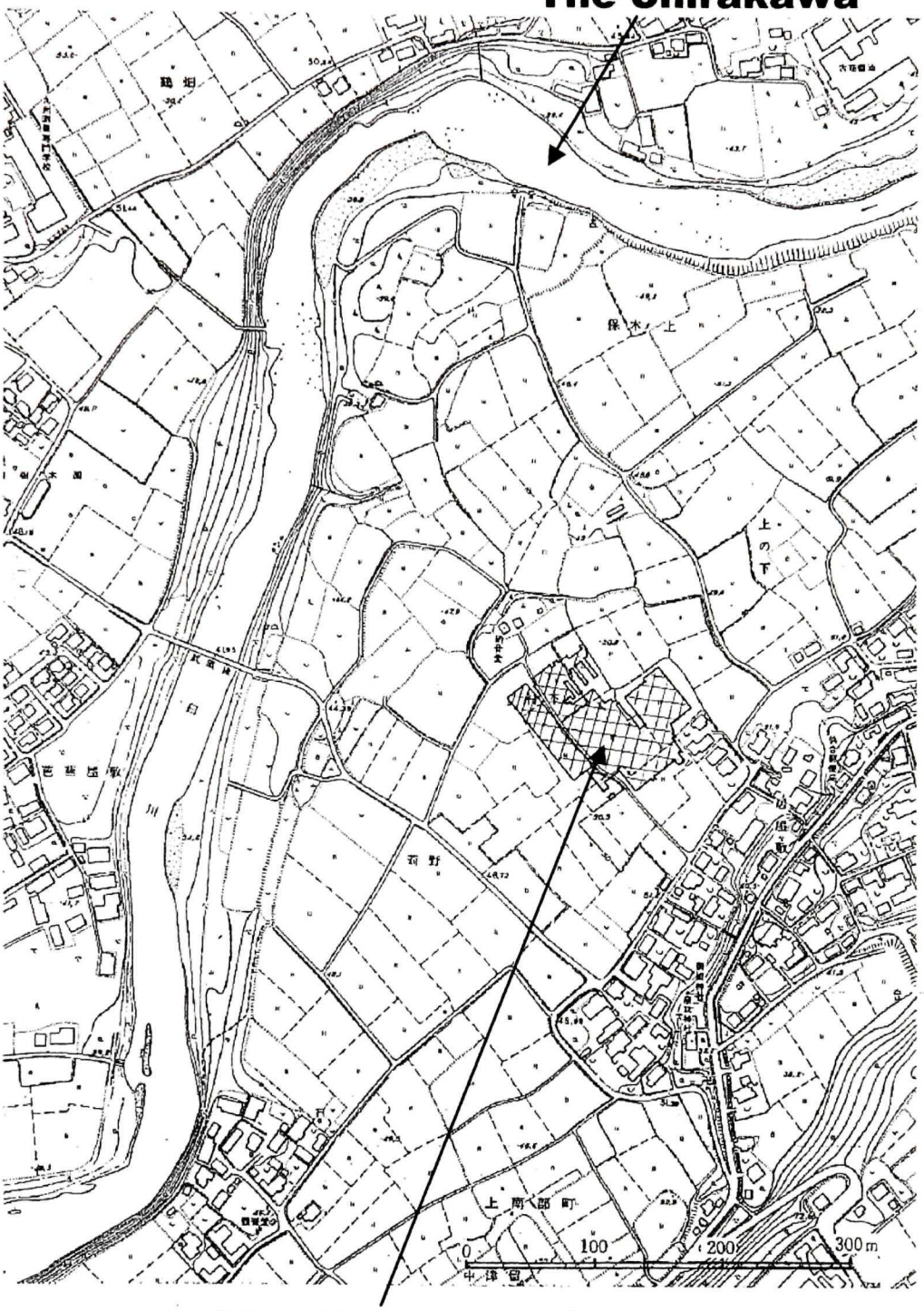
The Kaminabe site is located in Kaminabe-machi, Kumanoto City. To the east of Kumamoto City lies Mount Aso, an active volcano. The Shirakawa River flows out of its source in Mount Aso. The Kaminabe site is on the south shore of the river, which winds north where its terrace becomes wide (600 m) where the Kaminabe site is situated (Figure 4). It is located on almost the middle part of the river terrace. Its altitude is about 50 m asl. The Shirakawa flows into Ariake Sea at the west end of the city.

5.1 Site Description

The site was discovered by Tomita Koichi of the Kumamoto City Education Board during reconnaissance in 1978. After a test excavation, the Kumamoto City Education Board carried out two excavations of the Kaminabe site in 1978 and 1979. The description of the site below is based on the Kaminabe Site Excavation Report (Tomita 1981) and first-hand observation I conducted twice in 2002.

The site is approximately 10,000 km^2 and had been used as a paddy field; the layers were disturbed in some parts due to field maintenance. Here is a description of the layers. The first layer was 20-40 cm in thickness. The second was composed of black soil, 10-25 cm; small numbers of artifacts in the Kofun Period were recovered from this layer. The third was blackish brown, 40-50 cm; its upper part contained artifacts from the Late and Final Jomon Periods. It was difficult to distinguish the natural compounds of soils from soils which covered features or remains. The fourth layer was blackish brown to yellow loam, 30-50 cm; no artifacts were associated with this layer.

Figure 4. The Kaminabe Site (After Tomita 1981)



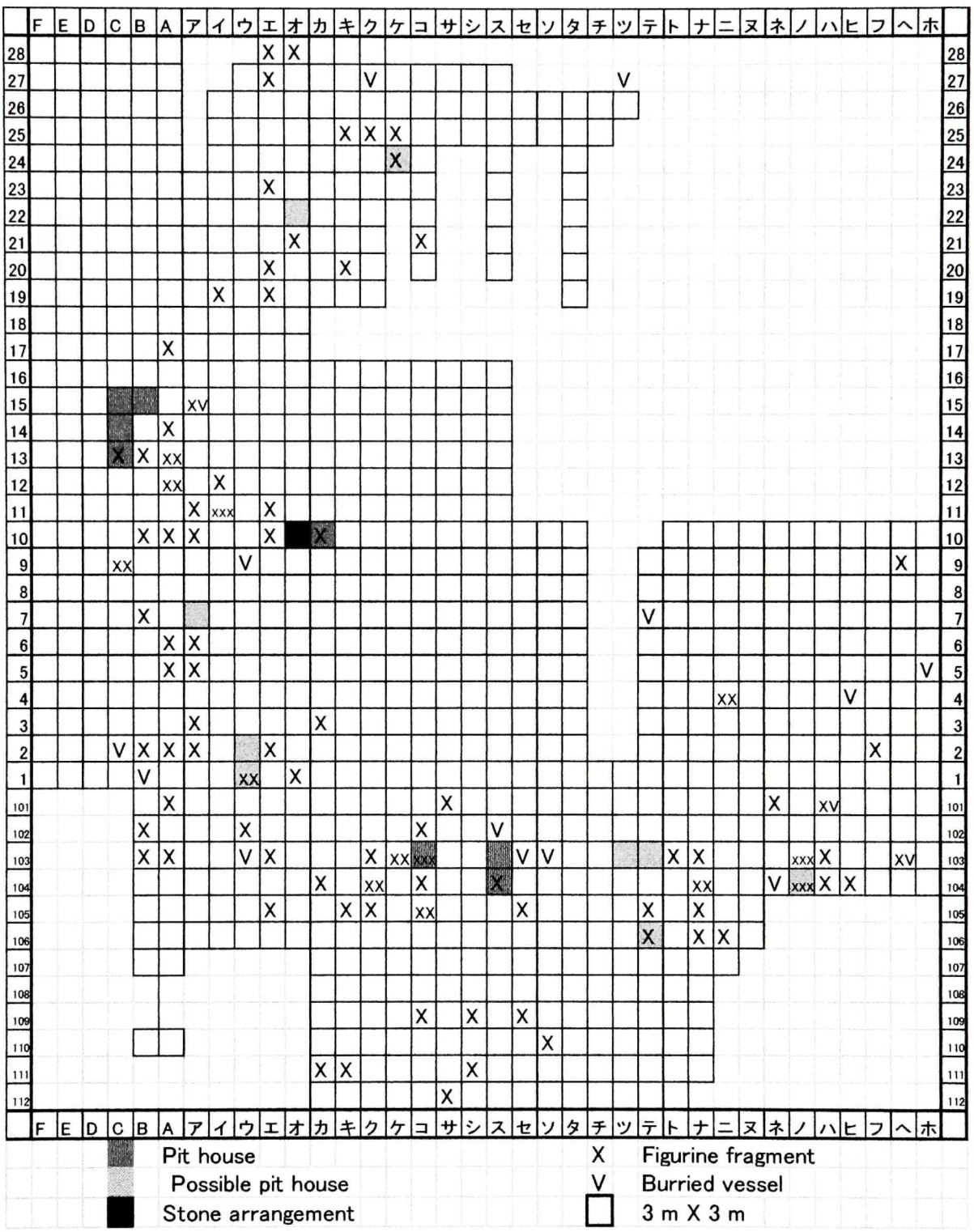
5.2 Features and Remains

Some dwellings and features dating to the Jomon and Kofun periods, together with a ditch from the modern period, were recovered. The site was occupied throughout the Jomon period, as artifacts from the Initial Jomon to the Final Jomon were recovered. However, the number of artifacts, especially pottery sherds, dating before the Late Jomon was quite small; on the other hand, enormous quantities of artifacts dating after the Late Jomon were found. The larger amount of artifacts would indicate a longer occupancy, increased population, and/or sedentary way of life. From the Late Jomon, some dwellings, buried pots, hearths, and stone arrangement were identified (Figure 5).

Dwellings:

Five dwellings and seven possible dwellings were found from the Jomon Period (Figure 5). The uncertainty resulting from the colors of the soils complicated the recognition of house pits. All dwellings appeared to be round pit houses. During this period, pit houses were typically either round or square. Every dwelling had a hearth. Some hearths were enclosed by stones. In the Kaminabe site, these pit houses were located in the west and south part of the site. The seven features which could be dwellings had hearths similar to the features in the five dwellings. Some hearths were enclosed by stones. Around the hearths, the ground surface was firm, but it was difficult to trace the extent of the house floor surface. The five house pits, along with the seven possible house pits, were arranged in the shape of a horseshoe, reminiscent of the settlement pattern in eastern Japan.

Figure 5. Site Plan of the Kaminabe Site (After Tomita 1982)



Stone arrangement:

A stone arrangement was recovered inside the horseshoe area (Figure 5): 13 stones lay inside an almost rounded pit, diameter 185 cm east-west, 165 cm north-south, and 30 cm deep. The diameter of these stones was 25-35 cm and their surfaces were round. Some of them were set up in the corners. The level was uneven because of differences in stone size. Outside of the pit, there were five stones at the same level. They could have been used for enclosing the pit (Tomita 1981). No artifact was associated with this feature. This feature seems to be related to ritual activities.

Buried vessels:

Sixteen pots were buried underground. Most had a diameter of approximately 50 cm. Some pottery was complete, others lacked the bottom part. Four out of sixteen pots were covered with pottery bowls like a lid; they were buried around the pottery concentration area. There were no artifacts associated with them. Since some of them were covered with bowls and they did not seem to have been opened since, Tomita (1981) suggested they were used for burials rather than as storage pots. Buried vessels are frequently observed in Kyushu in this period. It was reported that some human bones and teeth were found inside buried vessels at other sites in Kyushu (Ishikawa 2001). These buried vessels suggested that the site was occupied long time.

5.3 Artifacts

As mentioned above, numerous artifacts were recovered from this site. They consisted of lithics, ceramic vessels, figurines, other ceramic artifacts, and baked clay chunks (I will discuss the lithics and figurines in later sections). All artifacts were taken up under the

grids of 3 m squares—in other words, specific locations of each artifact was not recorded, and could not be traced by the site report. This is a distinct disadvantage for an attempt to establish distribution patterns and associations between artifacts. The artifacts appear to have been simply abandoned and dumped in the horseshoe shaped refuse area (Figure 5).

Ceramic vessels:

The total quantity of pottery recovered from the Late and Final Jomon Periods was 4,370 kg. They were classified into categories like shallow bowls, deep bowls, bowls, spouted vessels, small bowls, and "other pottery" supposedly used on special occasions. According to Tomita (1981), four pottery types were observed among this pottery, indicating duration of site occupancy covering the four ceramic types. These ceramic types are classified into Kokushoku Maken, which literally means black polished ware. The cord-marked patterns common to the Jomon vessels had disappeared. The fragments of pottery were distributed along the horseshoe shape, and some areas showed greater concentrations. There were few sherds on the floor surface of pit houses. Most were supposed to have been thrown away after abandonment. Later research shows that some of those ceramic sherds of Kaminabe, which was placed in the beginning of Final Jomon by ceramic typology, dated to *ca.* 2,800 BP by ^{14}C dating (Fujuwara 1995).

Other ceramic artifacts:

There was also a small number of artifacts considered to be ceremonial tools. Some of them were perforated clay artifacts, perforated discs, and beads (comma-shaped and tubular). Along with other artifacts, a large number of baked clay chunks for unknown uses were recovered. They were mostly small pieces, some of them with impressions of cloth.

6. Clay Figurines in the Kaminabe Site

As noted before, an exceptionally large number of figurines (112 fragments) have been recovered from this site, a few examples are shown in Figures 6-9. Compared to the elaborate figurines of other regions, the Kaminabe figurines are generally very simple in form. This is a common characteristic in figurines from sites in Kyushu, and as we saw, a trend observable in ceramic vessels as well. There are two types of the figurines: abstract and concrete, as reported by Tomita (1982). The abstract type does not show the limbs clearly and is flat. The concrete type, on the other hand, more accurately depicts parts of body, including the limbs. Most figurines are classified as the concrete type and only three fragments, including one almost complete figurine, are of the abstract type.

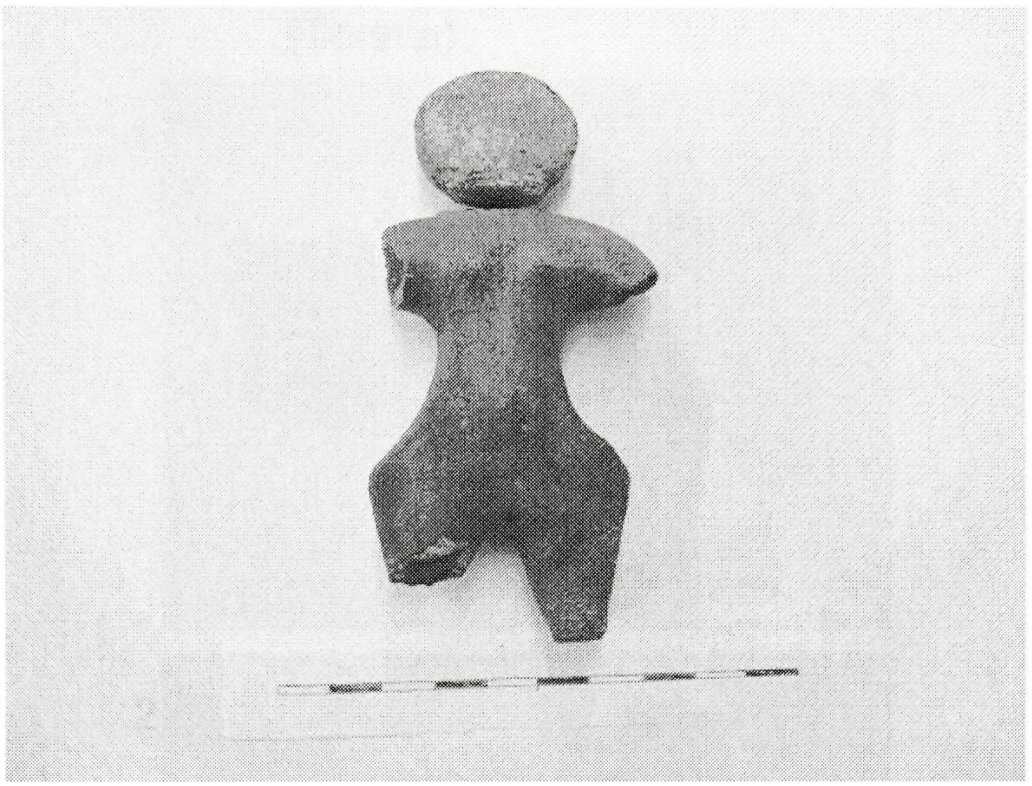
The number and frequency of formal attributes is shown below:

	Number of Fragments	Frequency
1. Head	19	(17%)
2. Torso	35	(30%)
3. Torso and arm (s)	3	(3%)
4. Torso and foot (feet)	3	(3%)
5. Arm	20	(18%)
6. Foot	27	(24%)
7. Almost complete	1	(1%)
8. Unknown	4	(4%)

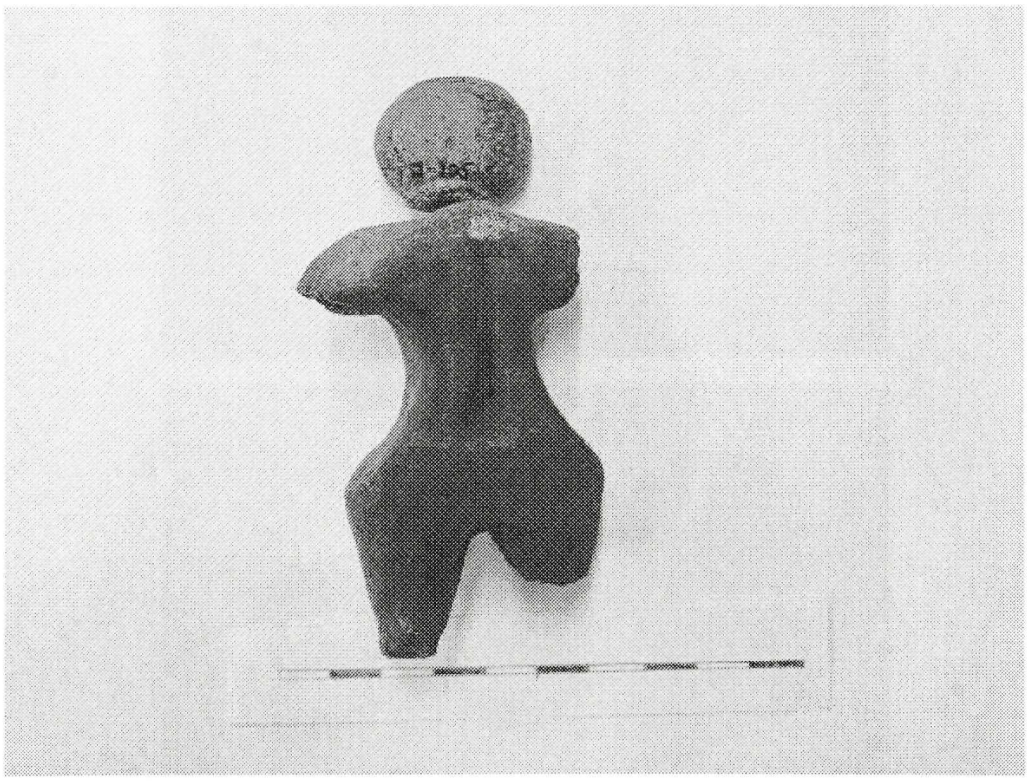
The torsos show both breasts and a protruding belly. On their back, they have a prominence under the neck (Figure 7-2, right); they also show one or two hollows. Some have a long hollow along their backbone (Figure 6-2), others two round hollows (Figure 7-3, middle and right); one is just under the prominence under the neck, the other is above the buttocks, which exaggerate the prominence of their back and buttocks.

Figure 6. Clay Figurine of the Kaminabe site 1

1



2



(cm)

Figure 7. Clay Figurines of the Kaminabe Site 2 (Torsos)

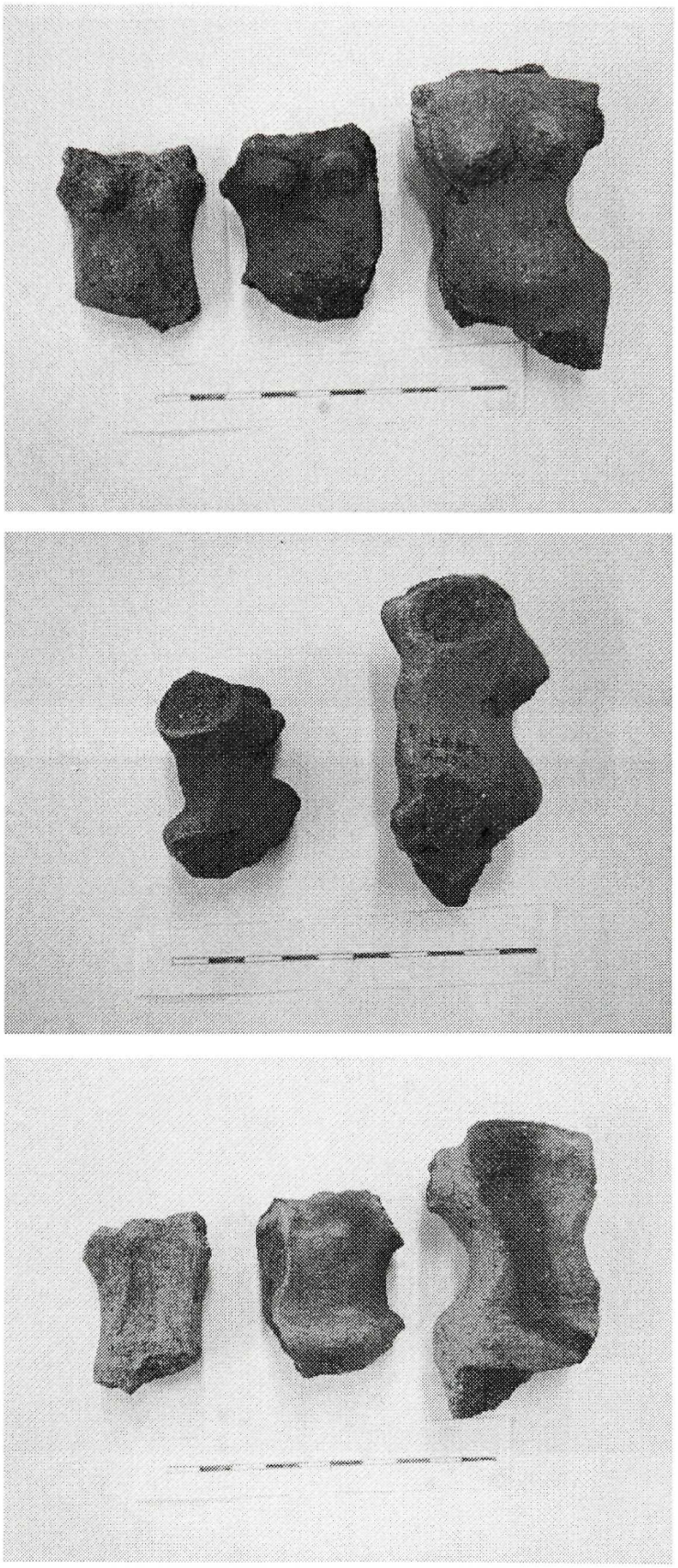
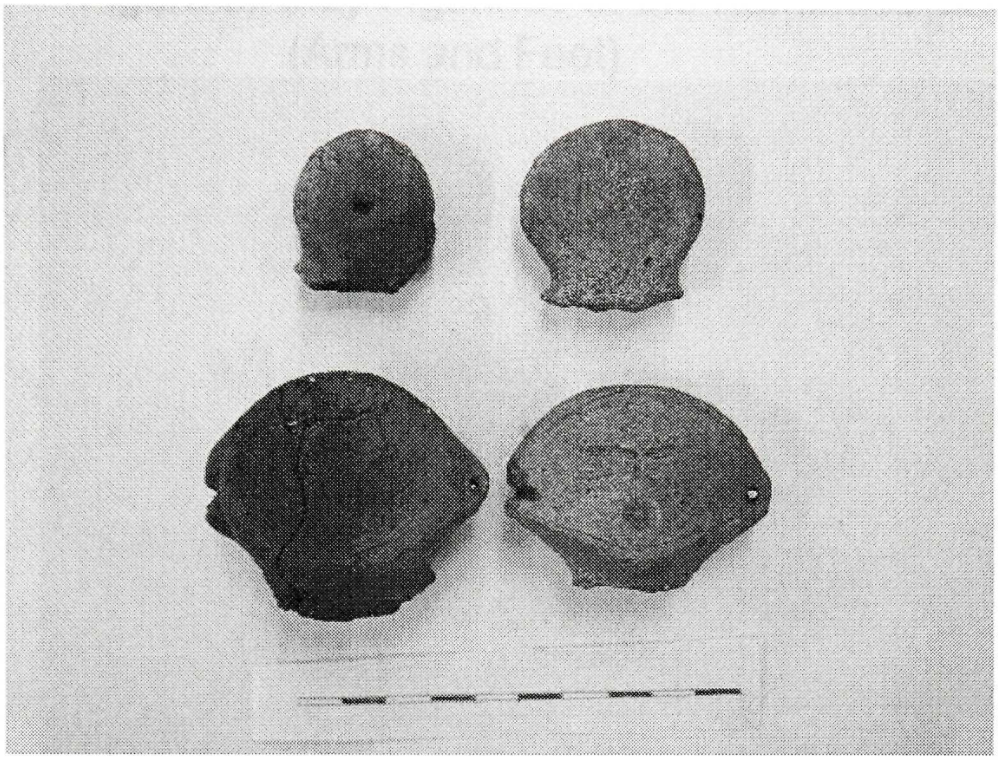


Figure 8. Clay Figurines of the Kaminabe Site 3
(Heads)

1

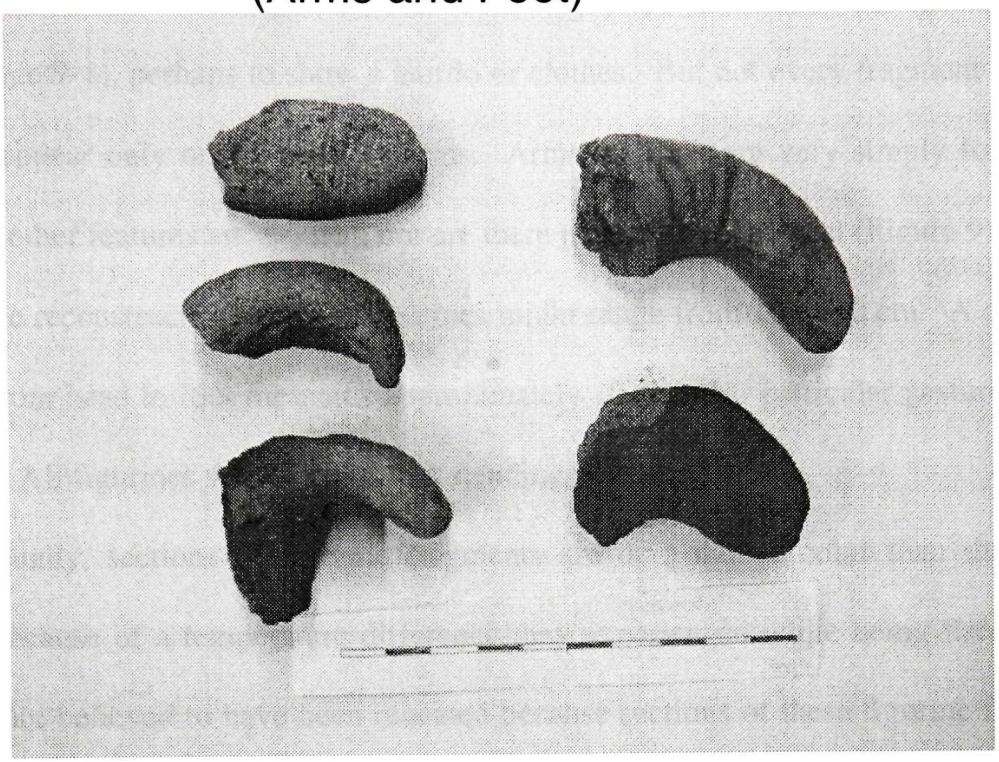


2

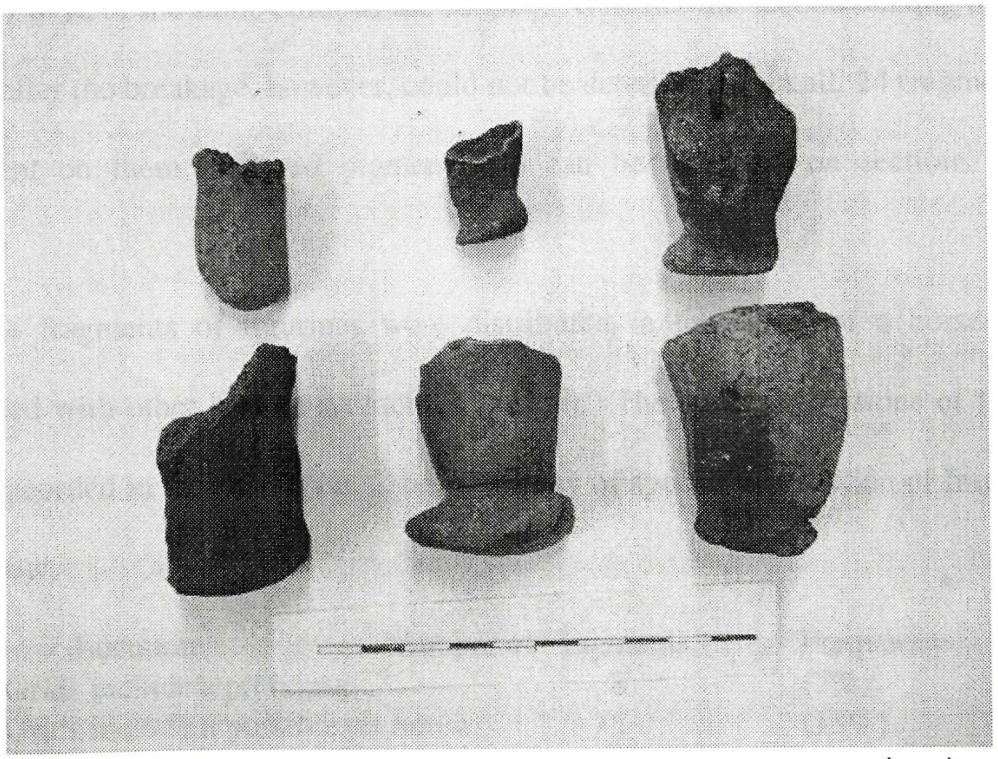
(cm)

Figure 9. Clay Figurines of the Kaminabe Site 4
(Arms and Feet)

1



2



(cm)

On their heads, some have expressions on their faces. Both eyes and a mouth, or either of them, are depicted; however, there are no noses (Figure 8-1). Some have a pierced hole on each ear (Figure 8-1). There are some patterns on the back of their heads; straight or curved lines are also depicted (Figure 8-2). Similar patterns are visible on their arms (Figure 9-1), perhaps to show a hairdo or clothes. But not every fragment has them and they appear only on the head or arms. Arms and feet are very simply formed; no fingers or other features are evident, nor are there patterns on their feet (Figure 9).

The reconstructed length of figurines might range from 10 to 20 cm. A conjoined figurine from head to foot measures approximately 10 cm. No particular gestures can be observed. All figurines were formed in a standing posture.

Usually, sections of ceramic fragments are of a darker color than that of the surface, because of a temperature difference they experienced while being fired. Some figurines are believed to have been reheated because sections of these figurine fragments (23 pieces) were of the same color as the surface. Whether the second heating took place during or after the breakage, however, could not be determined. In all, 24 fragments have red pigment on them, and red pigment also can be observed on sections of some fragments.

The fragments of figurines were distributed in the shape of a horseshoe and intermingled with other broken artifacts (Figure 5). The specific locations of fragments were not recorded in the site report. The frequency of special distribution of fragments is shown below:

Location	Number of Fragments	Frequency
1. Grids include a pit house	8	(7%)
2. Grids include a possible pit house	15	(13%)
3. Inside of a buried vessel	1	(1%)
4. Other grids	88	(79%)

None of the fragments was associated with the dwellings' floors. Eight pieces were recovered from the same grids of dwellings, fifteen from the same grids of possible dwellings. These fragments, however, were contained in dirt, which filled the houses after they were abandoned. It seems that they were thrown away after usage like pottery fragments, rather than intentionally buried or deposited. Although one fragment was found in a buried vessel, it seems that the fragment had fallen into the vessel with dirt when a lid of the vessel was fractured. In all, 88 other fragments were recovered from grids which have no association with dwellings or features.

No special treatment was observed in the depositional context of the possibly reheated figurines. They were found in the refuse like other figurine segments. Figurines with red pigment also seem to have been distributed randomly. Four out of 112 pieces were conjoined. Three of them were recovered from spots some distance away from one another: 27 m, 30 m, and 40 m.

Studying the clay of the figurines, Tomita (1982) discovered that it was different from that of the pottery. The clay of the figurines contained few grains of sand (only 7.4% of figurines contain them). Since sand was used as tempering material in the paste for ceramic vessels, he suggested that different clay was prepared for producing figurines.

Based on the observation of the specimens, the Kaminabe clay figurines represented females. Like others in Kyushu, the Kaminabe figurines show distinctive features in form which are absent in those of other regions. The prominence under the neck on their back (Figure 7-2) is present only in Kyushu during this period. The simple forms are also distinctive. Figurines might have been adopted and developed based on local cultures (Matsumoto 2000).

7. Subsistence in the Kumamoto Region During the Late and Final Jomon Periods

During the end of Late Jomon to the beginning of the Final Jomon, the number of sites greatly increased and large sites appeared in Kumamoto (e.g., Kagawa 1967). Subsistence changes in Kumamoto and the surrounding area in this period have been noted for some time now. Kobayashi H. (1939) and Kagawa (1967) have long advocated the idea that some cereal cultivation was practiced in this period.[2] Kotani (1981) has presented an English summary of Jomon sites which yielded cultivated plant remains.

Subsistence changes can be observed by changes in site locations and proportions of artifacts. During the Middle Jomon, sea level was high and the sea inundated the inland valleys. Most sites were located near the river mouths and formed large shell middens (Kimura 1975; Tomita 1990). From the beginning to the last trimester of the Late Jomon, a small number of sites were distributed along the foot of the mountains (Kimura ibid.). Then, during the time of the Kaminabe site, a number of sites were located on river terraces or plateaus with access to water. Those sites usually occurred in groups, with one or more larger sites and some smaller sites around them. These larger sites are called "core" sites (Tomita 1990), or "mother" sites (Kimura 1975); they were occupied for a long time and have yielded a large number of artifacts. Pottery fragments and stone tools were recovered from small sites, but no features were associated with them. Tomita (1996) suggested that small sites were built for temporary uses.

Akazawa and Maeyama (1986) discuss the lithic assemblages of the sites in Kyushu (includes Kumamoto) and western and northern Japan. Their analysis shows that the proportion of chipped stone axes was high and that of arrowheads low in Kyushu, compared to sites in other parts of Japan during this period. A few examples of chipped

stone axes are shown in Figure 10-11. This analysis is significant because the chipped stone axes are thought to be multiple-purpose tools used for digging and tree felling (Kagawa 1967), as well as for harvesting roots and bulbs of plants (Watanabe M. 1975). Therefore, in Jomon Kyushu, it is suggested that people depended on plant resources more than in western and northern Japan.

Yamasaki (1983) notes a clear change in the lithic and ceramic assemblages from the Late Jomon to the beginning of Yayoi in northern Kyushu. At the Kashiwada site in Fukuoka Prefecture (north of Kumamoto), which dates to the beginning of the Late Jomon, the proportion of chipped stone axes in the assemblage was only 6.7% as compared with arrowheads which comprised 75.5%. However, in a later period, the number of chipped stone axes increased greatly, while the number of arrowheads decreased. At the Amagi site in Kumamoto, which dates to the beginning of the Final Jomon, the proportion of chipped stone axes was 66.5%, while arrowheads accounted for less than 3%. This change is interpreted to a shift to greater dependence on plant resources. It is also observed that the proportion of shallow bowls increased at the end of Late and the beginning of Final Jomon periods. At the Amagi site, the frequency of shallow bowls was 49.9% of the pottery assemblage. This might also indicate changes in the method of food preparation (ibid.).

There are other kinds of stone stools which were supposed to have been used for harvesting plants: chipped stone knives (Figure 12) and chipped stone sickles (Takagi 1980). Both of them appeared at sites dating to the Late and the Final Jomon in the Kumamoto region. Chipped stone knives are relatively thin and light compared to chipped stone axes and they are palm-sized. They are supposed to have been used for plucking plants. Chipped stone sickles are supposed to have been attached to shafts; they

measure 6.9 to 15.8 cm in length (ibid: 101). Most sites where theses knives and sickles were recovered were located on river terraces and plateaus, suggesting the practice of dry field cultivation (ibid: 104). Large sites occurred in these locations during this period.

Yamada (1999) discussed subsistence in the Late and Final Jomon periods, mostly based on the analysis of plant remains. He noted that there is some, if not much, evidence to indicate that cereal cultivation had already begun during this period. At the Uenohara site in Kumamoto prefecture, carbonized rice and barley were recovered from the soil that filled a pit house. Pottery fragments with marks of rice husk were collected at the Wakudoishi site, Kumamoto (Figure 3) and Osayuki site, Fukuoka. Phytoliths of rice were observed from a hearth at the Wakudoishi site. Yamada believed that rice was grown on the plateau where the settlements were located (ibid.).

As noted above, the new AMS dates indicate that rice cultivation began in Kyushu five hundred years earlier than was previously thought and that the "incipient Yayoi" overlapped with the last phase of the Jomon period for several centuries. In view of this, it is most likely that small-scale cultivation was practiced in the Kumamoto region during the time the Kaminabe site occupied.

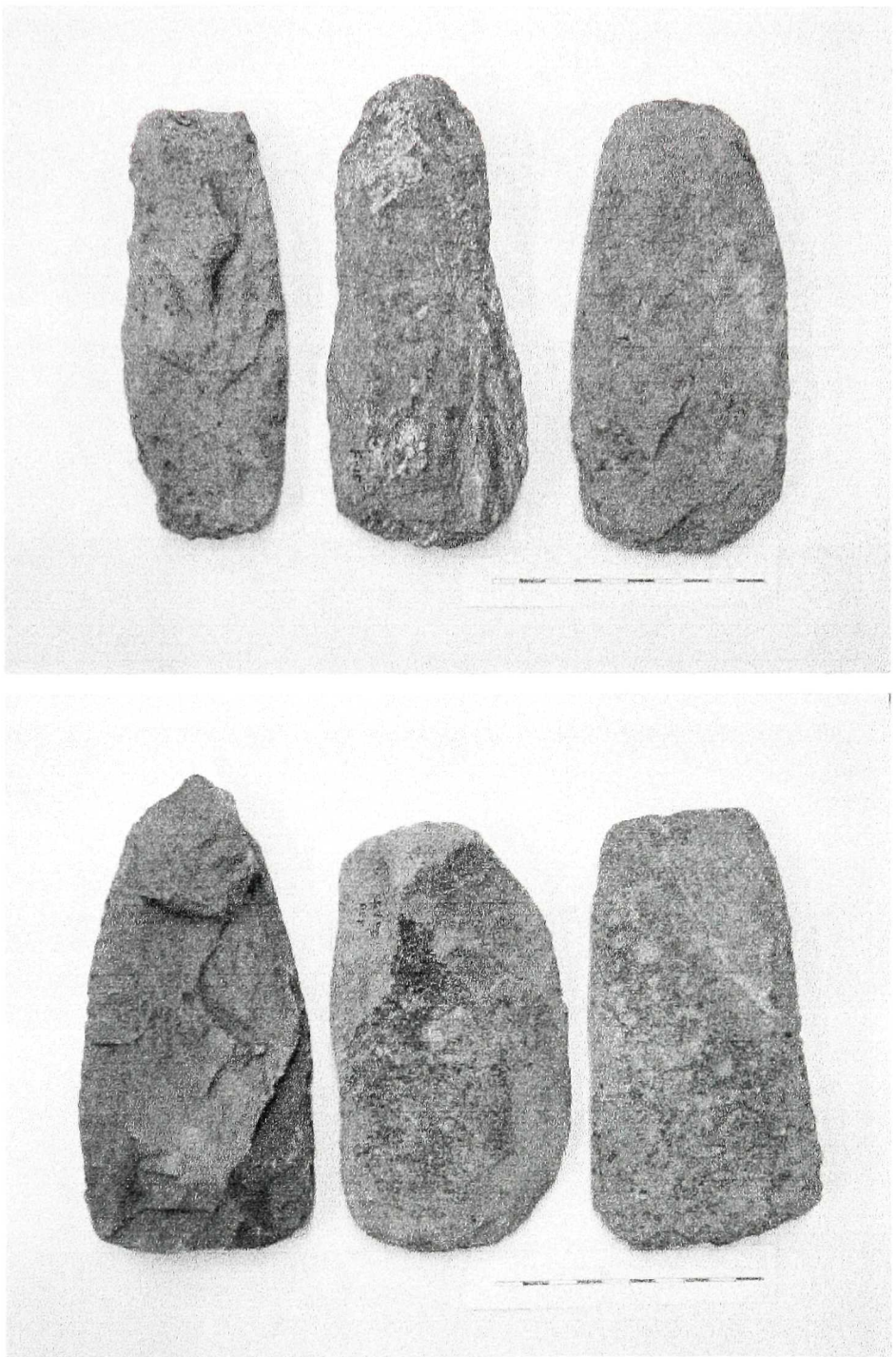
8. Subsistence Practices at the Kaminabe Site

In order to investigate the possibility of cultivation by the inhabitants of the Kaminabe site, I have examined a lithic assemblage recovered from Kaminabe. A total of 954 stone tools were found at the Kaminabe site. The stone tools were classified into nine groups according to function, and I calculated their frequency as follows:

1.	Hunting tools (arrowheads, spears)	3.4%
2.	Fishing tools (sinkers)	2.6%
3.	Digging tools (chipped "axes"[3])	38.8%
4.	Harvesting tools (chipped knives, chipped sickles)	2.8%
5.	Food preparation tools (grinding stones, pounding stones, etc)	6.8%
6.	Processing tools (scrapers, flakes, etc)	14.0%
7.	Wood working tools (polished and partly polished axes)	11.4%
8.	Ceremonial tools (stone clubs, beads)	4.7%
9.	Unknown tools (cross-shaped and disc-shaped tools)	14.9%

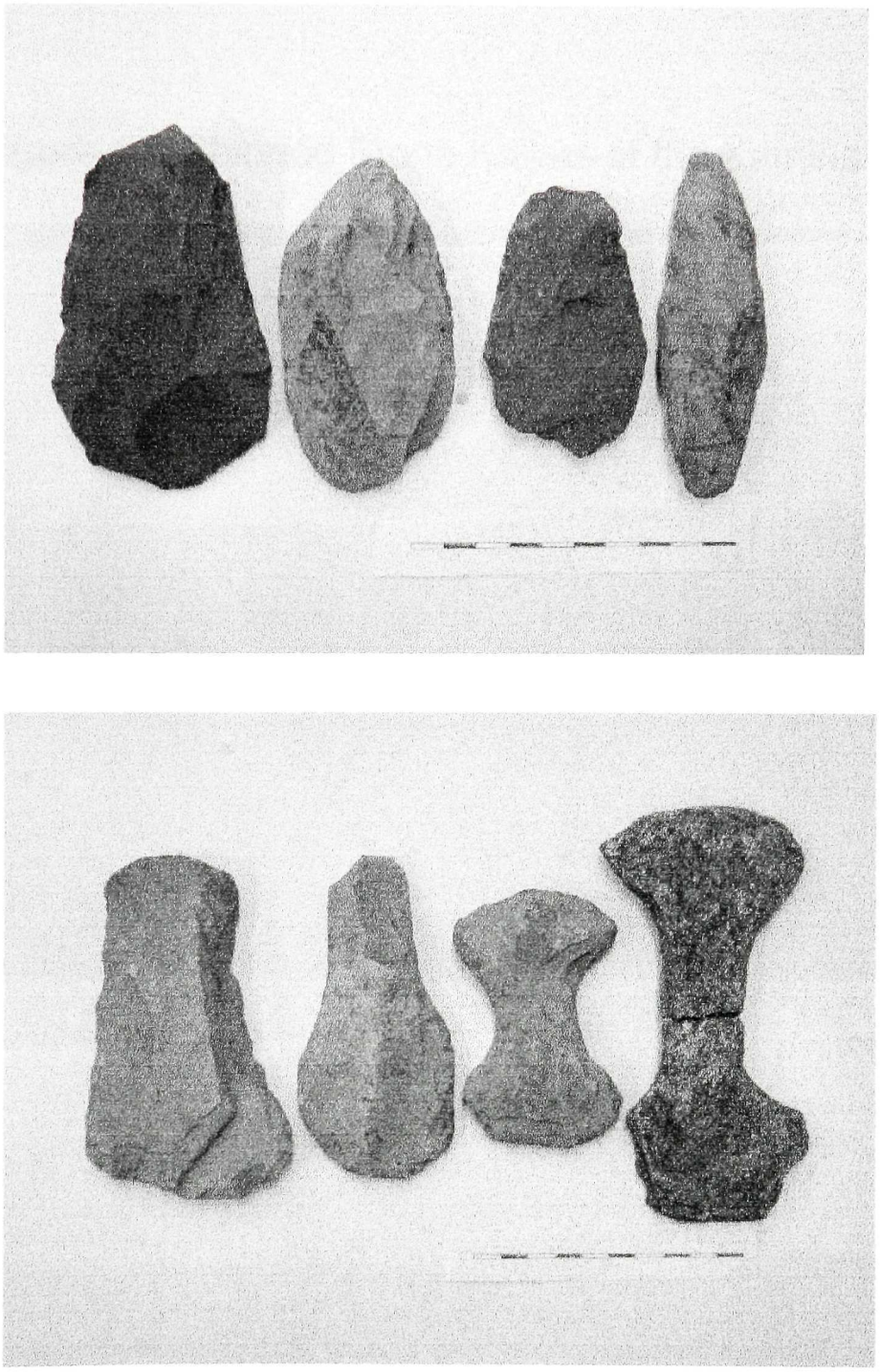
As in previous studies, the proportion of the hunting tools is low, at 3.4%; whereas that of the digging tools is remarkably high, at 38.8%. There are various sizes and shapes of chipped stone axes. A few examples of chipped stone axes from the Kaminabe site are shown Figure 10 and 11. Some bigger ones exceed 20 cm in length, some are shaped like hoes. The smaller ones are approximately 10 cm long. It was not easy to distinguish small chipped axes from chipped knives (harvesting tools) (Figure 12). I classified thinner and sharper edged ones as chipped stone knives, assuming that small chipped stone axes had the same functions as the knives. One chipped stone sickle was observed. Since chipped stone tools were recovered in fragments like other stone tools, there might have been more sickles. Although the function of the disc-shaped stone tools (14.6%) usually is unknown, it is suggested that the thinner of those tools might have been used for digging (Sakata 1998).

Figure 10. Chipped Stone Axes of the Kaminabe Site 1



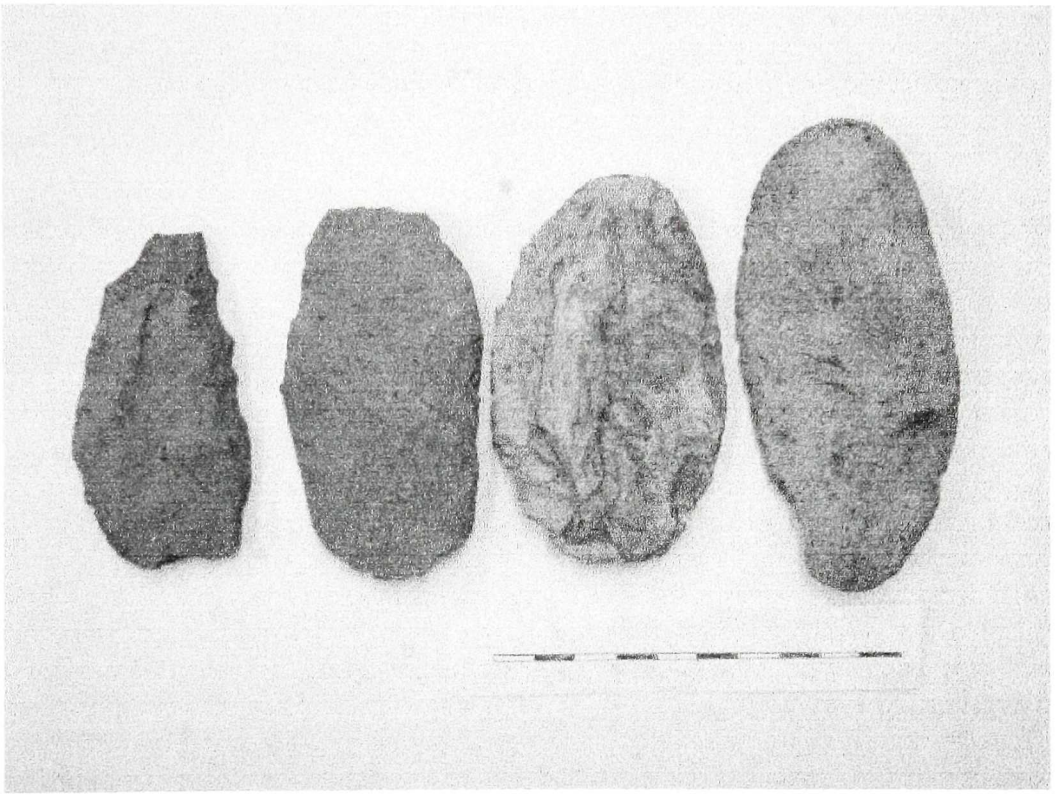
(cm)

Figure 11. Chipped Stone Axes of the Kaminabe Site 2



(cm)

Figure 12. Chipped Stone Knives of the Kaminabe Site



(cm)

In later research, several phytoliths of rice were found in one of the pottery sherds from this site (Fujiwara 1995). Although this is the only positive identification, it suggests that the subsistence practices here included the use of cultivated plants. It is unclear what other kinds of plants were being cultivated.

9. Subsistence Practices in the Surrounding Sites

In addition to the Kaminabe site, I also examined the lithic assemblage composition and botanical studies done on two other sites: the Wakudoishi and the Tsuruhata sites, located north of the Kaminabe site (Figure 3). Like the Kaminabe site, a large number of artifacts were recovered from the end of Late Jomon to the beginning of the Final Jomon. These two sites are well documented by their site reports. My purpose was to demonstrate the subsistence practices in the surrounding area.

The Wakudoishi site is located along a tributary of the Goushi River and it is on the Kikuchi Daichi (plateau). The excavated area of this site is approximately 8,000 m^2. Ten pit-houses were recognized in the site. Fifteen pieces of clay figurines and over 1,000 pieces of chipped stone axes were found. The site report specified that the thinner type of chipped stone axes, especially, which might have been used for harvesting, were recovered. But these implements were classified as digging tools in the report. Takagi (1980) reported a chipped stone sickle. The proportion of stone tool categories is shown below, where the number of stone tools is based on the site report (Komori 1994):

1. Hunting tools	11.2%
2. Fishing tools	0.6%
3. Digging tools	56.0%
4. Food-preparation tools	11.7%
5. Processing tools	18.3%
6. Wood working tools	1.2%
7. Ceremonial tools	0.8%
8. Unknown tools	0.05%

According to the analysis of plant remains, phytoliths of rice were recovered from a hearth in a pit house, and those of broomcorn millet from a pit in a pit-house. Some fragments of pottery with rice-husk marks were also found.

The Tsuruhata site is located on the Higo Daichi (plateau). Approximately 4,000 m^2 of the area were investigated. The size of the site was not as large as other core sites in this region. However, nineteen pit-houses dating to the Late and Final Jomon periods were identified. This is a large number, although they were not occupied at the same time. Three pieces of clay figurine and more than 100 of stone tools collected. However, the plant remains have not been analyzed. The proportion of stone tools by function is as follows (Sakata 1998):

1.	Hunting and fishing tools	19.6%
2.	Digging tools	31.0%
3.	Food preparation tools	20.8%
4.	Processing tools	5.3%
5.	Wood working tools	10.1%
6.	Ceremonial tools	0.6%
7.	Unknown tools	11.9%

Based on the above, the Wakudoishi and Tsuruhata sites demonstrated similar patterns to the Kaminabe site, suggesting that plant cultivation was practiced in the region during the end of the Late and the beginning of the Final Jomon periods.

10. Women's Contribution to Cultivation

Based on the assemblages of stone tools, plant remains, and the new AMS dates, small-scale cultivation seems to have been practiced at core sites in the Kumamoto region, including the Kaminabe site. Clay figurines were always recovered from core sites (Tomita 1990), suggesting that the sites in which they occurred had seen plant cultivation.

In most horticultural societies today, women perform the majority of garden labor (Watson and Kennedy 1991, Ehrenberg 1989). Women are also thought to have been responsible for plant resources in Jomon Japan (e.g., Kaneko 2001; Kobayashi T. 1985; Ogasawara 1990). Although there is no direct evidence, I will follow the model of women's probable contribution to the early stage of plant cultivation.

Hastorf (1998) offers a social-cultural perspective on the beginning of plant domestication, which has been studied predominantly from political and economic perspectives. She argued that it is not surprising that most staple crops were associated with women in foraging and horticultural societies, since women nurtured plants in the same manner they took care of their offspring (ibid: 777). Moreover, nurturing is not performed exclusively by one woman. A woman cooperates with other women in doing the work (ibid.). Watson and Kennedy (1991) also approached plant domestication from a social-cultural perspective and developed a framework accordingly. In their paper, they criticized the schema of sexual division of labor prevalent in previous studies:

men>hunt>animals>active
women>gather>plants>passive

Instead of a male/active, female/passive dichotomy, they adopted the following schema:

men>hunt>animals
women>gather>plants

This allowed them to investigate the origin and early development of plant cultivation and domestication in the Eastern Woodlands of North America with three lines of evidence: archaeological, ethnohistoric, and ethnographic from living cultures (ibid.). They concluded that women were likely to have domesticated wild plants that already existed there—such as sumpweed, sunflower, and chenopod—in view of their rich botanical knowledge; women were responsible primarily for plant resources. After the introduction of maize form Mesoamerica, they accepted, acclimated, and developed it (ibid.).

In Kaminabe and the surrounding area, plant cultivation was also likely started by women with extensive botanical knowledge. They probably worked on selected kinds of plant to increase their availability. As for extraneous plants like rice, they might have accepted and developed them, just as people did maize in the Eastern Woodlands of North America. During the time of the Kaminabe site, both the number and size of sites increased dramatically, suggesting an increase of stability in their life. Cultivation was presumably one of the factors that contributed to that stability.

Some archaeologists believe that as important tasks grow in the society, the status of people in charge of them emerges or rises (Brumfiel 1991, McCafferty and McCafferty 1991). Accordingly, as cultivated plants became one of the most important resources, probably staple foods, for the society, the Kaminabe women who controlled their production began to assume an important role in their society. The female clay figurines were made at the Kaminabe site where women contributed to plant food production.

The relationship between women, plant resources, and clay figurines is evident in other regions in Jomon Japan: central Honshu and northern end of Honshu. Fujimori

(1963) discussed the Middle Jomon cultivation hypothesis with respect to the mountainous area of central Honshu. According to Fujimori, there was an explicit shift in subsistence during the Middle Jomon. Sites which used to occur in valleys moved to the plateaus covered with volcanic ash, which were not suitable for hunting animals (ibid: 23). The proportion of the lithic assemblage also changed. The number of arrowheads decreased, whereas that of chipped-stone axes, stone mortars, and stone querns increased. This led him to argue that small-scale cultivation was practiced there during the Middle Jomon (ibid). The locations of the sites and the lithic assemblages in this region are quite similar to those of the Late and the Final Jomon in the Kumamoto region, including the Kaminabe site.

The central Honshu area is the second most concentrated for the numbers of clay figurines (National Museum of Japanese History 1992) (Figure 2 and Table 1). The total number of figurines recovered in Yamanashi prefecture during the Middle Jomon is 1,601 (Kushihara 1998), that of the Nagano prefecture is approximately 1,500 (Kobayashi Y. 1998).

The northern end of Honshu contains the heaviest concentration of figurines, especially from the Final Jomon sites, and a large number of figurines were recovered in Iwate prefecture, which produced the Shakoki (goggle) type (Figure 2 and Table 1). Kaneko (2001) discussed mainly the larger size of Shakoki figurines. He compared the sites where these figurines were found with those where they were not with reference to indications of subsistence practices. He concluded that the sites with the figurines depended more heavily on plant resources, while those without the figurines indicated greater dependence on animal and marine resources. At the sites with figurines, horse chestnuts were gathered and processed for storage purposes. It was women who

performed this labor and they might have played important roles in subsistence (and in society).

11. Concluding Remarks: Significance of the Kaminabe Figurines

In conclusion, I will discuss the significance of the Kaminabe clay figurines.

(1) Female representations

Based on their secondary sex characteristic, the Kaminabe figurines clearly represent adult females. The hollows emphasize the prominences of the back and buttocks; perhaps they were modeled on plump women. The plumpness might have been "highly desirable to generally thinner, less well-nourished women" (Ehrenberg 1989:73). Since there are no other distinctive features on the figurines, it seems that the female gender and plumpness are essential components of the image. It is not clear whether the protruding abdomens indicated pregnancy or plumpness. Lesure (2002:588) has argued that the protruding bellies indicated pregnancy, without specific arguments to support it, but it is possible that both plumpness and pregnancy could have been represented on the figurines.

(2) Use

Relatively large and free-standing figurines appeared during the Middle Jomon of central Honshu that seemed to have been used for communal rituals. Compared with those, the Kaminabe figurines were small, palm-sized, and less elaborate. This indicates that figurines might have been personal belongings rather than objects used for community level ceremonies.

It is possible that they were used for ceremonial purposes. Some fragments were heated again, as the sections show the same color as the surfaces. We can imagine a ritual where figurines or fragments of figurines were burned. But it is uncertain whether they were heated after they broke or they broke while being heating. Red pigment is

observed on broken sections of a few fragments, indicating that the figurines were not always thrown away when they broke. Broken figurines might have been kept.

It is unknown if the Kaminabe figurines were deliberately broken. Although few fragments were conjoined, the figurines may not necessarily have broken at the site. Size and portability become potentially meaningful (Dobres 1992). Since the figurines were small, their owners may have carried them around. People may have brought them when they went out to forage for plant foods and the figurines might have broke then, and the broken fragments were left outside of the site (Kaneko 2001:228).

(3) Individual's identity

The observation on the heads of figurines suggested that the figurines are not representations of specific persons, as most figurines lack one of the most distinctive features in the human body: facial features. With respect to the Upper Paleolithic female figurines, especially the Pavlovian-Kostenkian-Gravettian-style figurines, McDermott (1996) reasoned that they have simplified head and facial features because these features were invisible to the sculptors, who represented themselves. He interpreted female figurines as "self-portraits" of women in the Upper Paleolithic Period. Figurines represented self-awareness, and women produced these sculptures in their own image. According to McDermott, before the appearance of mirrors, human beings had only two visual information sources: one's own body and that of another human being. Therefore, if prehistoric women wanted to represent "self," he noted, observing themselves was the only available means. Consequently, the oldest images of the human body, literally, embody egocentric or autogenous (self-generated) visual information obtained from a self-viewing perspective.

This may be a unique interpretation, but face is one of the most distinctive features in the human body. If one wanted to represent a specific person, he or she might focus on characteristics which were different from other persons, including facial features. Although some Kaminabe specimens depict facial features, such as the eyes and mouth, the number is small and their features are quite similar to each other. These are also highly schematized rather than naturalistic.

One reason why some figurines may be representations of individual identity is that they were recovered from mortuary contexts as burial goods (Bailey 1994). In Jomon Japan, "ritual" goods, including clay figurines, were not usually associated with burials. The most common artifacts were beads and other ornaments; utility tools follow and are considered to represent the identities of buried persons (Kaneko 2001:210). In the Kaminabe case, the figurines were not associated with burials and they were usually found in the refuse deposit. This suggests that the figurines were not representations of individual identity.

(4) Social identity

There are figurines from other parts of the world which are thought to be representations of social identities. Clay figurines from Formative Mesoamerica show two different age groups: young females and old females (Joyce 2000; Lesure 1997, 1999, 2002). Younger ones are usually depicted in a standing posture and without clothing; older ones are depicted crouching or in seated posture and obese with elaborate clothing. These two kinds of figurines imply certain tension between these age groups (Joyce 2000; Lesure 1997, 1999, 2002).

An age difference was also observed among the Eurasian Upper Paleolithic figurines examined by Rice (1981). For this research, she examined five body attributions of the 188 female forms from the Eurasian Upper Paleolithic. The five body attributions were breasts, stomachs, hips, buttocks, and faces. These, in turn, were classified into three reproductive-related age groups: young (prereproductive), middle (reproductive), and old (postreproductive) females. Then, she compared this age category with a generalized age pyramid for contemporary hunter-gatherers. The age proportions fit closely. Using contemporary ethnographic data showing hunter-gatherer women with different statuses and role functions associated with the three reproduction-related age categories, she suggested that these Upper Paleolithic female forms represented women in different age categories (ibid.).

The age-related categories were also presented by Hodder (1982), based on his investigation of Baringo tribe in Africa. He observed that material symbols played an active part in tribal societies. Among tribes in the Baringo area, both males and females were strictly categorized into age-set groups. For example, the age of women were symbolized in many items of dress and ornaments. According to his observation of ear-flap decorations and the number of necklaces worn by women, there were three age-sets among women: "young", "middle-aged", and "old". These age-sets represented the main stages through which a woman passed, such as marriage and childbirth, and they indicated the roles which women were expected to play in society.

With respect to the Kaminabe case, no age differences were observed among the Kaminabe figurines. Moreover, there were no particular poses. This suggests that the figurines represented females in one age group: adult females. The clothing or hairdos depicted on figurines might have represented social identity (Soffer *et al.* 2000).

Although a few heads and arms of the Kaminabe specimens show patterns, they would be difficult to identify if they represented the ideology of the Kaminabe people. The most important components, as mentioned above, seem to be femaleness and plumpness.

(5) Who owned the figurines?

While very hard to prove, it is possible that adult women owned the figurines, as women's contribution to plant cultivation might have led women to possess figurines. Even so, not every adult woman necessarily possessed them. Late and Final Jomon people were hardly simple egalitarians. Their societies were probably at some intermediate stage between simple egalitarian and hierarchical, perhaps chiefdom or trans-egalitarian societies (Clarke and Blake 1994). We recognize this by observing the artifacts. A small number of stone and clay beads (comma-shaped and tubular), perforated clay discs and stone clubs, which were considered prestige goods were recovered from the Kaminabe site. From the Wakudoishi site (Figure 3), which lies adjacent to the Kaminabe site, a jade tubular bead was recovered. Sources of jade are quite limited in Japan. Analysis revealed that the jade was from Niigata prefecture, which is located in the middle of the main island (Honshu) facing the Sea of Japan (Warashina and Higashimura 1994). This evidence suggested that it was procured through long-distance trade and that such artifact would have been considered highly valuable, available only to a small number of people in the communities. It suggests that a system, which allows a limited number of community members to possess valuables, has already emerged at this time.

Although many fragments were recovered, the number of complete figurines would not have been insufficient for every woman in the Kaminabe site to own one, since

the site was occupied for a period that covered four ceramic vessel types, approximately two hundred years. At the surrounding sites, only a small number of figurines were recovered. This suggests that a limited number of people could own the figurines.

The social organization of seventeenth-century Iroquoian society is thought to have been based on hereditary chiefships. According to ethnographic evidence, "women enhanced their reputations through exceptional industry and skill in growing corn and as homemakers" (Trigger 1990:132-133). In Kaminabe society, women who possessed outstanding skills or knowledge in cultivation and who played an essential role, such that of a decision maker, might have been highly esteemed by the members of society. Perhaps these were the women who owned the clay figurines.

It is still unclear why an exceptional number of figurines were recovered from the Kaminabe site. The Kaminabe site is considered a core site of the Kumamoto region—in other words, a relatively large site with a long occupation (Tomita 1982, 1990). Since a relatively large number of artifacts considered to be ceremonial tools—stone clubs and cross-shaped stone tools—were recovered at Kaminabe, the Kaminabe site might have been a ritual center of the region (Tomita 1990) and the figurines were important elements in the Jomon ritual life.

In this thesis, I discussed the clay figurines of the Kaminabe site with particular reference to subsistence practices. I have suggested that female clay figurines were made in the Kaminabe site, where women played important roles in production of plant resources. Further research should allow us to test the model with assemblages with various combinations of variables – the presence and absence of clay figurines and indications of different subsistence practices.

Notes

1. The category of "ideothcnic" and/or "sociotechnic" presented by Binford (1962) is probably more familiar to the West, since Kobayashi's "second category tools" is rather similar to it (Ikawa-Smith 2002: 351).

2. Plant cultivation is thought to have been practiced since the Early Jomon. Cultivated plants, such as bottle gourd (*Lagenaria*), were recovered from the Torihama Midden that dated to the Early Jomon (Kokawa 1978). Phytoliths of rice (*Oryza stativa*) were recovered from the Early Jomon layer at the Asanebana Midden, Okayama Prefecture (Takahashi 2001). This indicates that it existed in the Japanese Archipelago at that time.

3. Although chipped stone axes are thought to have been used as hoes, I call them "axes" as they are traditionally so called.

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