Structures and Dynamics of Settlements in the First Half of Satsumon Culture

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ABSTRACT

Enormous progress was made in the 1970s and 1980s in archaeological research on settlements of the Satsumon culture (seventh to thirteenth centuries). That progress was facilitated by abundant survey data on pit dwelling sites—many of them remain not entirely buried even today—and accumulated data from excavations conducted to discover which dwellings came earlier or later or existed simultaneously; as well as established chronology of Satsumon pottery phases. [The pottery is so named from its "scratched patterns" (satsumon).] Attempts were made to elucidate the composition of settlement clusters on the basis of classification of settlements and subsistence and living patterns. Considered from today's vantage point, however, there were a number of problems. The object of analysis, for example, tended to be settlement sites in the eastern and northern parts of Hokkaido dating back to the second half of the Satsumon culture (early tenth to twelfth or thirteenth centuries), and there was no attempt to factor in trade and other interactions with other regions in explaining structures of settlement clusters.

This study uses the chronology of Satsumon pottery as the guideline to analyse settlements and settlement clusters in central and northern Hokkaido that date from the first half of the Satsumon culture (late seventh century to the beginning of the tenth century). Collecting data on settlement sites from that period, I found those sites could be divided into two types: one type consisted of a few pit dwellings in settlements that continued for one or two subperiods before disappearing; the other type consisted of many more pit dwellings, the largest settlements having more than 20 dwellings, and they continued to exist over four or five subperiods. I call the former Type I settlements, and the latter Type II. Besides their size, Type II settlements have other shared characteristics, notably their location on important traffic routes and having large quantities of artifacts originating in Honshu, indicating the possibility that Type II might have served as hubs for interaction with the ancient society of Honshu's northeast region. This study hypothesises that the basic structure of settlements in the first half of the Satsumon culture consisted of Type I settlements created expressly for everyday living, and nearby a core settlement (Type II) that served as a centre for exchange and other activities in addition to being an everyday living space.

Based on that hypothesis, the study goes on to examine the temporal and spatial dynamics of settlements. The major findings are that during Phase I of the Satsumon pottery chronology (the late seventh century to early eighth century) this settlement structure is found only in the southern part of Ishikari lowland and that, during Phase II (the mid-eighth century to early tenth century), the structure is also found in the northwestern part of Ishikari lowland and along the Sea of Japan side of central Hokkaido. The study interprets this spread to be due to an increase in opportunities for trade and contact with the ancient society of Honshu's north-eastern region that arose with the establishment of regional trading systems centred on Akita Castle.

The foregoing understanding of settlements in the first half of the Satsumon culture period will be

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useful for future research on settlements that underwent great changes in the second half of the period.

KEYWORDS: Satsumon culture, Hokkaido, settlements

The Satsumon culture is an archaeological culture that spread over Hokkaido through a time span that paralleled the Nara and Heian periods. The existence of pit dwellings from that time—even today numerous remains are not entirely buried but are visible in a recessed state—has been known since the latter nineteenth century and many surveys and excavations have been conducted. Interest in settlement sites grew as research progressed, and excellent studies began to appear in the 1970s. Among the pioneering achievements in the field are Fujimoto Tsuyoshi (1972) and Utagawa Hiroshi (1972). They developed discourses on Satsumon settlements using data obtained from research and excavations aimed at clarifying the chronological order of dwellings, which they did by comparing dwellings located adjacent to each other, looking at their floor surfaces and the sedimentary conditions of the excavation. Especially, Fujimoto's exploration of the synchronicity or sequential relations of pit dwellings, guided by Satsumon pottery chronology, represents a huge leap forward. This was groundbreaking work; for the first time Fujimoto built a pottery chronology to use in the analysis of settlements that came to be incorporated into research on the Satsumon culture. After further investigation and analysis of a number of sites, his research came to fruition in 1982 with the publication of his *Satsumon bunka* (Satsumon Culture). There he classifies settlements on the basis of size and geographical location and considers subsistence and living styles in order to posit relationships among them (Fujimoto 1982).

Fujimoto's series of settlement studies was later challenged by the minutely detailed critical scrutiny of Ōi Haruo (1984). Ōi argued that there was no such thing as "pottery types," and, therefore, Fujimoto's use of pottery types as the analytical tool to determine the chronology of pit dwellings was problematic. Instead of proposing an alternative method for period identification, however, Ōi also used pottery chronology to propose timelines in his own analysis, thus seriously contradicting his original argument. His critique of Fujimoto's approach was not sufficiently convincing and did not lead to constructive discussion.

In the 1990s and after, research on the Satsumon culture focusing on interregional exchange and trade grew to become the mainstream of this field due partly to progress in collaborative work with philological history and partly to abundant new research findings and excavation results from Satsumon-period sites in north-eastern Honshu. Work on the location and distribution of Satsumon sites in connection with interregional exchange and

trade made great headway (Ushiro 1999; Tsukamoto 2003; Segawa 2005; Sawai 2007, 2008, 2010). That development had major significance: it made us realise that research on settlements up to that time lacked the perspective of interregional exchange and trade, and it brought home how necessary that perspective was in studying Satsumon settlements. Meanwhile, thorough analytical research highlighting temporal relationships among individual settlements and among groups of settlements petered out, and the research issues dealt with in the 1980s and earlier have since remained on the back burner. Ōi (2004), for his part, tackled the subject with scrupulous care but maintained the former pottery-based period identification, leaving the abovementioned contradiction unresolved.

In recent years, archaeologists have been giving a second look at the sources and methodology Ōi used to justify his rejection of the pottery types chronology. It is clearer now where the problems were (Kumaki 2018), and Fujimoto's method of analysing settlements has been validated. This will be a turning point for research on Satsumon-period settlements moving forward. However, even though some basic premises of Ōi's argument remain problematic, many of his interpretations, such as his ideas on settlement structure by region, are intriguing and worth our attention.

Thus, with the availability of more materials and data, key research findings on Satsumon culture settlements that had been actively put forward by the 1980s are now regarded as considerably important. It is high time they were brought to bear on current mainstream research about interregional exchange and trade.

It should be noted, however, that settlement research in the 1980s and earlier was targeted at settlements from the second half of the Satsumon culture. Data on settlement sites from the first half of the culture were very limited in those days, and many of the details are obscure (Fujimoto 1982). Since the mid-1980s the number of excavations of settlement sites from the first half of the culture in central Hokkaido has increased, and so the data imbalance is no longer an issue. When I myself began building a chronology of Satsumon pottery, I was fully aware of the development of studies of Satsumon-period settlements (Sakakida 2016); while some parts of my chronology are still rough, I believe it nonetheless provides a sufficient base for analysis of the settlements. My purpose in this study, therefore, is to describe the structure and dynamics of settlements in the first half of the Satsumon culture using pottery chronology as an analytic tool. In so doing I hope to pave the way for the expansion and continuation of pre-mid-1980s settlement research.

The first half of the Satsumon culture roughly corresponds to the period spanning the first half of Phase I through the second half of Phase II in my pottery chronology, or the late seventh century to the beginning of the tenth century, before the deposition of the Baitoushan-Tomakomai tephra (Sakakida 2016). This study deals primarily with settlement sites from that period, but it also looks at settlement sites from Phase III (the early to mid-tenth century) so that we may look ahead and see connections between the two.

The settlements studied here are in regions where there are many investigated sites—the southern and north-western parts of Ishikari lowland, the Sea of Japan side of central and northern Hokkaido, the Kamikawa basin, and the Iburi-Hidaka area (Figure 1).[1)]

I. Overview by Phase of Settlements in First Half of Satsumon Period

Phase I (Late Seventh Century to Early Eighth Century)

In the southern part of Ishikari lowland, settlement sites are located on terraces along the main stream and tributaries of the Chitose river and the Yūbari river, and on the Maoi hill, among other areas. There are settlements each composed of a few pit dwellings at the Marukoyama site (Tamura 1994), the Kiusu 9 site (Miura *et al.* 2008), the Kiusu 5 site (Suemitsu & Hirota 2011), the Osatsu 2 site (Miura *et al.* 1995; Toyota *et al.* 2002), the Kashiwagigawa 11 site (Uwaya 1990), the Moizari 4 site (Matsutani 1997), and the Iwanai site (Utagawa 1997; see Figure 2). There is also a large high-density settlement consisting of more than 20 pit dwellings at the Suehiro site (Chitose City Board of Education 1981; Ōtani and Tamura 1982; Tamura 1985; Takahashi 1996; see Figure 3, top).

In the north-western part of Ishikari lowland, settlement sites are found in the Toyohira river alluvial fan, the Kotoni river alluvial fan, and the floodplains of Old Kotoni river, Old Ishikari river, and Toyohira river. There are very few settlements in the downstream and mouth areas of rivers; instead, they tend to be found in much greater numbers in the middle

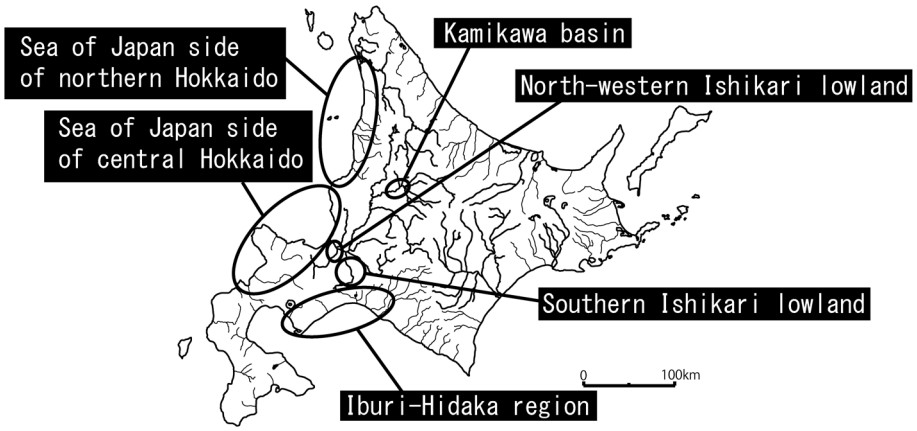
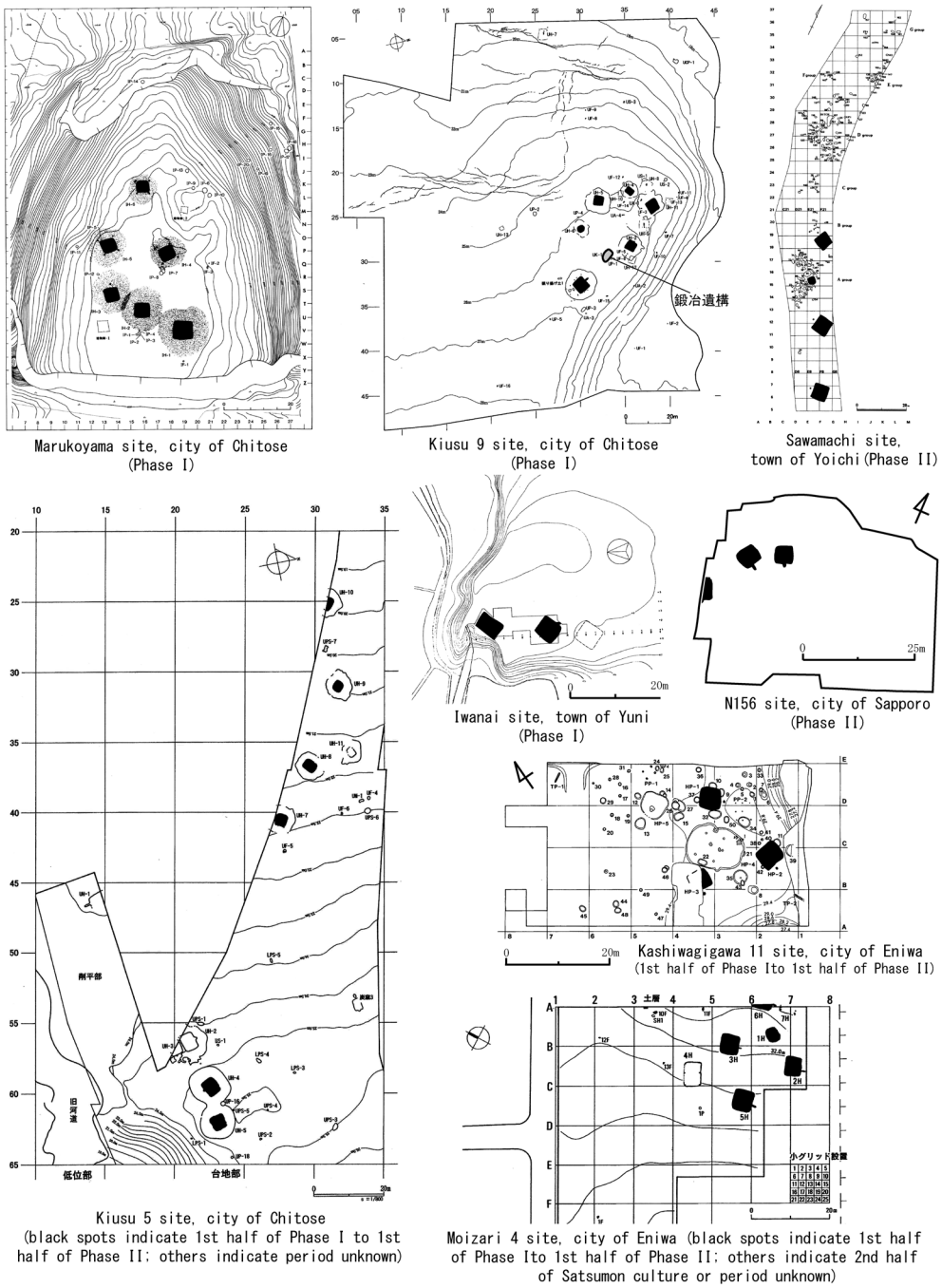


Figure 1. Locations and names of the regions with sites mentioned in this paper.

[1)] Compared with the central and northern parts of Hokkaido, research on the southern part has problems including: 1) less accuracy of pottery chronology (Sakakida 2016, pp. 257–276) and 2) the whole picture of settlements is not clear yet. The settlement sites of southern Hokkaido, therefore, are not included in this study; they are referred to when necessary.



Marukoyama site, city of Chitose (Phase I)

Kiusu 9 site, city of Chitose (Phase I)

Sawamachi site, town of Yoichi (Phase II)

Iwanai site, town of Yuni (Phase I)

N156 site, city of Sapporo (Phase II)

Kashiwagigawa 11 site, city of Eniwa (1st half of Phase I to 1st half of Phase II)

Kiusu 5 site, city of Chitose (black spots indicate 1st half of Phase I to 1st half of Phase II; others indicate period unknown)

Moizari 4 site, city of Eniwa (black spots indicate 1st half of Phase I to 1st half of Phase II; others indicate 2nd half of Satsumon culture or period unknown)

Figure 2. Examples of settlement sites from the first half of Satsumon culture.

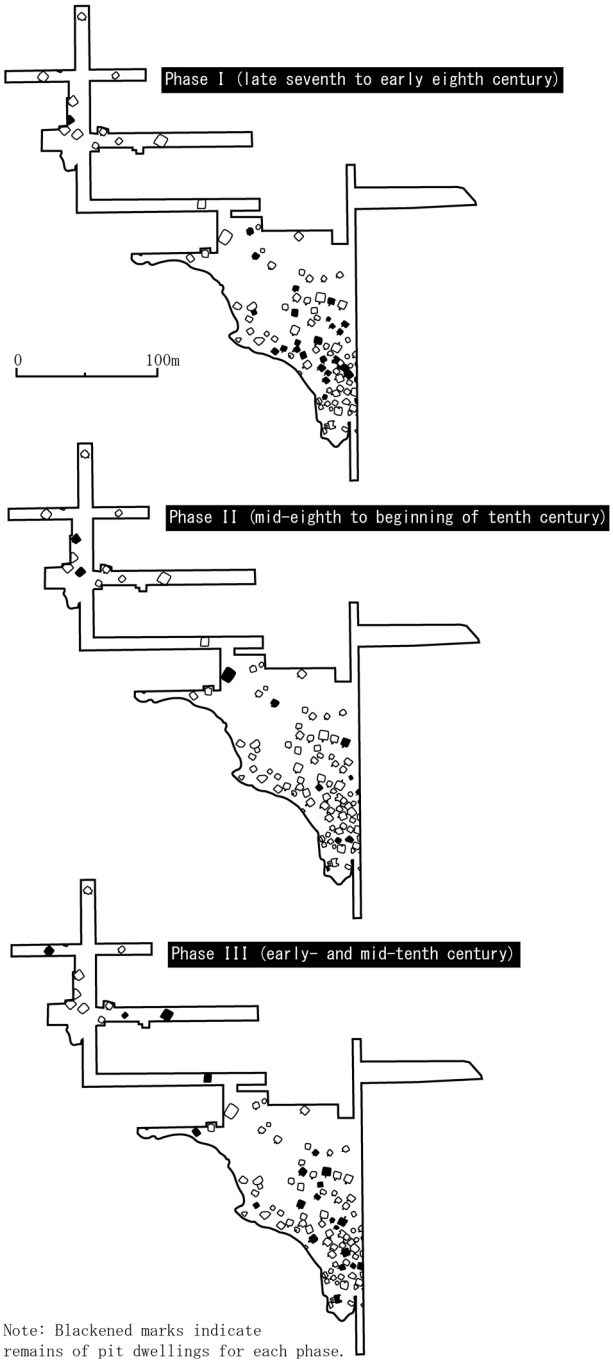


Figure 3. Settlement changes at Suehiro site, Chitose.

and upstream reaches of rivers and the top of alluvial fans. In these areas, pit dwellings are not densely clustered; rather, small settlement sites of a few dwellings each are scattered over the terrain (Figure 4, top). At the K528 site, which is on the lower reaches of a river,

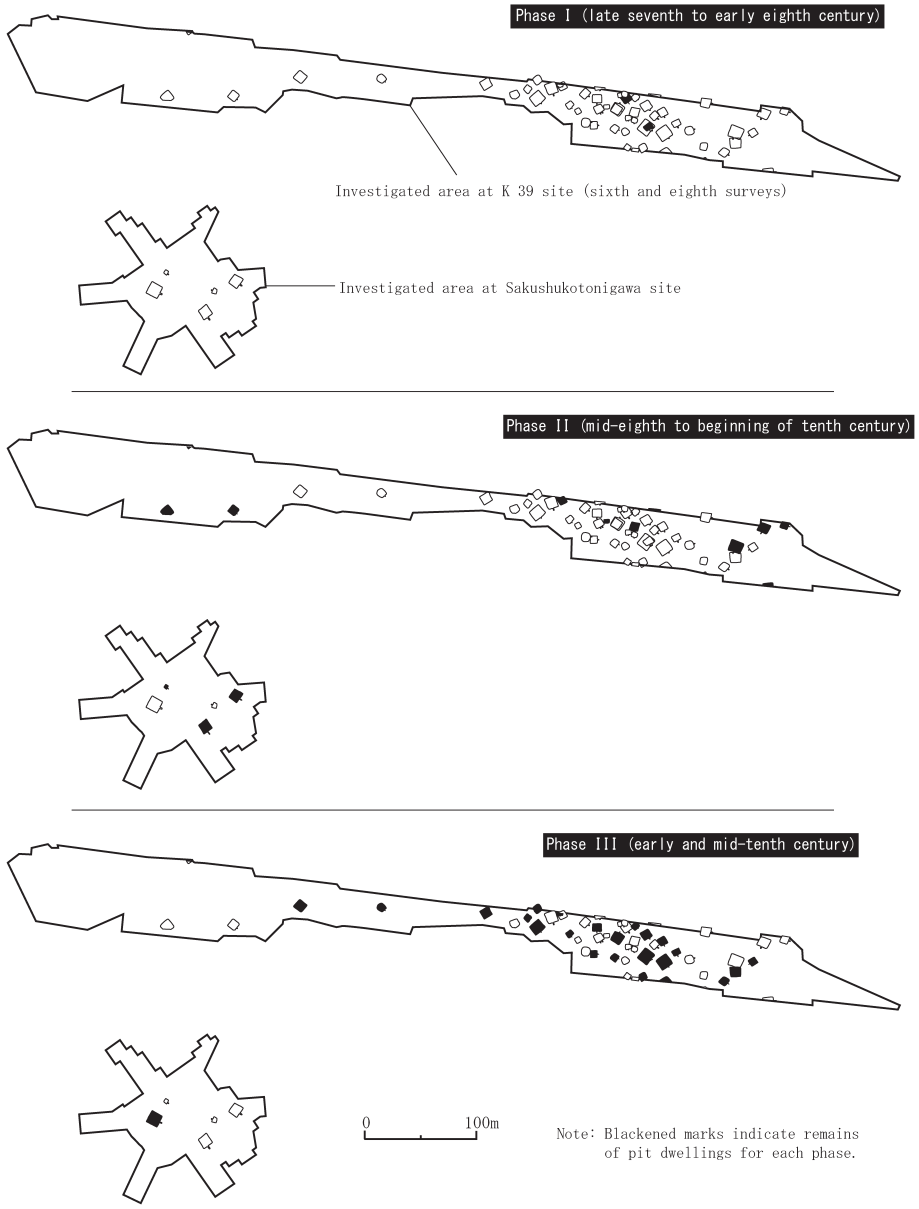


Figure 4. Settlement changes at K39 site (sixth and eighth surveys) and Sakushukotonigawa site.

flat land house remains have been found (Nozuki 2008).

On the Sea of Japan side of central Hokkaido, there are settlement sites on the terraces along the western coast of the Shakotan peninsula and on the terraces and sand dunes along the western coast of the Ishikari bay. They include the Ōkawa site (Okada & Miya 2000; Inui 2001b, 2002), Sawamachi site (Miya 1989), Chibutashinai site (Otaru City Board of Education 1992), Herokaruusu site (Tabe 1997), and others. These settlements were small in scale, each with a few dwellings, as is the case in the north-western part of Ishikari lowland (Figure 2 and Figure 5, top). Settlements have not been found along the eastern coast of Ishikari bay, but fireplace remains from Phase I were uncovered at the Okajima cave ruins (Ōba & Ishikawa 1961), indicating that the area was not unpopulated.

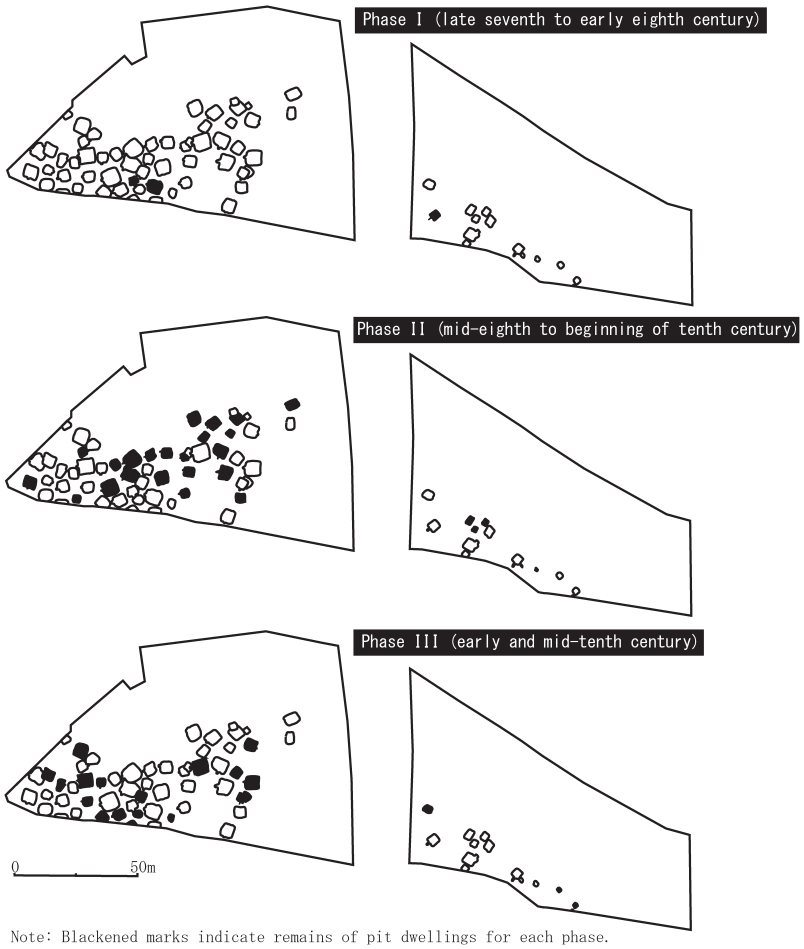


Figure 5. Settlement changes at Ōkawa site.

The area around Iburi and Hidaka has yielded no pit dwelling remains. But the discovery of burnt clay and earthenware/gravels in concentrated amounts at the Ocharasenai site (Amakata 2013) indicates that the land here was utilised.

In northern Hokkaido, no settlements have yet been found in the area along the Sea of Japan. In the Kamikawa basin there are many remains of outdoor structures most likely from the Phase I period, at the Chikabumichō 5 and 6 sites (Shin-Arai Joint Venture 2012) and the Midorimachi 4 site (Asahikawa City Board of Education 1985). These sites yielded fairly large quantities of Hokudai 3-type *subtype-2*. Although the pottery pieces can be considered to have been made sometime between the first half of Phase I and the second half of Phase II, it is hard to give them more specific dates. It is very possible, however, that further progress in research on pottery classification may identify more precisely when individual structures were built.

In southern Hokkaido, settlements of one to a few pit dwellings have been confirmed here and there on terraces facing the Tsugaru strait, Hakodate bay, and the western coast of Funka bay (Uchiura bay).

Phase II (Mid-Eighth Century to Beginning of Tenth Century)

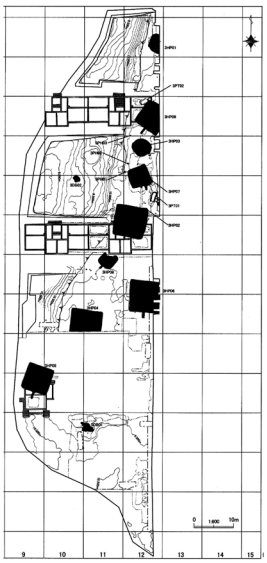
In the southern part of Ishikari lowland more than ten pit dwellings have been confirmed at the Suehiro site (Figure 3, middle). The density is slightly lower, but there is a strong possibility that there are more pit dwellings outside the area investigated. Their period identification is difficult, but if all the likely candidates are counted, presumably more than twenty pit dwellings existed as they did in Phase I. Settlements composed of a few pit dwellings in Phase I remained the same at the Osatsu 2 site, the Kashiwagigawa 11 site, and the Moizari 4 site (Figure 2). New settlements similar in size began appearing at the Mamachi site (Ishikawa *et al.* 1971; Taneichi 1983; Naganuma 1987), the Yukanboshi C15 site (Miura & Suzuki 2000), and the Nishishimamatsu 5 site (Dohi 2006). The settlement at the Iwanai site along the Yūbari river, on the other hand, had vanished; and it is not known what became of it.

Some settlements in other regions underwent significant structural changes. On the Sea of Japan side of central Hokkaido, for example, the Ōkawa site settlement grew to nearly 20 pit dwellings, more densely placed than earlier and somewhat similar to the Suehiro site (Figure 5, middle). Meanwhile, in nearby sites such as Sawamachi, Chibutashinai, and Ranshima Mochiyazawa (Otaru City Board of Education 1991), as well as at the Herokaruusu site on the western coast of Shakotan peninsula, settlements consisting of one to a few pit dwellings remained as they had been previously (Figure 2). New settlements also appeared at the Higashiyama 1 site (Nobechi *et al.* 2004), the Shubutogawa-ugan 6 site (Uchiyama 1985), and other places. On the eastern coast of Ishikari bay, too, new settlements appeared at the mouth of the Ishikari river, including the Wakkaoi C site

(Yokoyama & Ishibashi 1975).

As if connected to that development on the Sea of Japan side of central Hokkaido, an increasing number of pit dwellings were found in the north-western part of Ishikari lowland as well. At several places along the Old Kotoni river, for example, the number of pit dwellings grew to more than 20, placed more densely together. Those places are the area investigated by the sixth survey at the K39 site (Fujii 2001), the area of the eighth survey on the same site (Ishii 2000), the Sakushukotoni river site (Hokkaido University Archaeological Research Centre 1986), and the adjacent area investigated by the third survey at the K435 site (Tanaka 2019; see Figure 4, middle; Figure 6; this cluster of places is tentatively called "the K39 sixth survey settlement cluster"). A similar settlement has been confirmed at the H519 site along the Old Ishikari river, too (Ishii 2006). In the search for settlement sites, the lower reaches of rivers and sand dunes along sea coasts have begun to be actively investigated. As a result, new settlements of a few pit dwellings have been found at the K460 site (Ueno 1980), K445 site (Kashiwagi 2004), K446 site (Ueno 1979; Tanaka 2015), and the K528 site, all located at the lower reaches of the Old Kotoni river, as well as at the N156 site on the Momijiyama sand dunes (Figure 2).

In the Iburi-Hidaka region, the remains of one to a few pit dwellings were found at the



Period: The second half of Phase II
to the first half of Phase III
For positional relations with the investigated
area of the sixth survey of the K39 site, see Figure 9.

Figure 6. K435 site settlement, the area investigated in the third survey.

Kyōwa 2 site (Tomakomai City Archaeological Survey Center 1987) and the Onikishibe 2 Site (Amakata 2011). The number of pit dwellings is very small in this region, but remains of many outdoor structures have been found at the Onikishibe 2 site and the Kamihoronai Moi site (Inui & Ono 2007; Ono 2009).

In northern Hokkaido, settlements of a few pit dwellings have been newly discovered (Figure 7, top) at the Takasago site (Mineyama & Miyazuka 1983; Miyazuka 1983) and Kagawa Sansen site (Tomamae Town Board of Education 1987, 1988), both on the coastal area of the Sea of Japan, and also at the Chikabumichō 6 site and the Nishikimachi 5 site (Segawa 1984, 1985, 1988) on the Kamikawa basin (Figure 7, top). In southern Hokkaido, the remains of pit dwellings on the coastal area of the Tsugaru strait and the western coast of Funka bay might possibly date from this Phase II, but with very few pottery shards discovered from pit dwelling floors, it is difficult to confirm.

Figure 7. Settlement changes at the Takasago site.

Phase III (Early to Mid-Tenth Century)

In the southern part of Ishikari lowland, more than 20 pit dwellings from Phase III are confirmed at the Suehiro site (Figure 3, bottom). It is very likely that pit dwellings spread beyond the investigated area, and if all of them, including those whose dates are hard to confirm, are counted in, the total number at the site would have exceeded 30. Settlements of just a few pit dwellings remained about the same as in Phase II at the Osatsu 2 site, the Nishishimamatsu 5 site, the Moizari 8 site (Mori 2004), and the Nakashimamatsu 6 and 7 sites (Matsuya & Uwaya 1988). No pit dwellings or other structures from Phase III are confirmed along the Yūbari river or the Maoi hill; we lack detailed information on Phase III settlements there.

On the Sea of Japan side of central Hokkaido, nearly 20 pit dwellings existed close together at the Ōkawa site (Figure 5, bottom). Settlements of a few pit dwellings remained about the same as in Phase II at the Chibutashinai site and the Shubutogawa-ugan 6 site. A new settlement appeared at the Horikappu 1 site (Hokkaido Cultural Properties Research Institute 1992; Murakami 2005). At the Ishikari river mouth on the eastern coast of Ishikari bay, a settlement was maintained from the previous period, and a new settlement came into being at the Tsuchiue site (Utagawa 1965).

In the north-western part of Ishikari lowland, more than 20 pit dwellings were found close together at each of the settlements included in the "K39 sixth survey settlement cluster" (Figure 4, bottom; Figure 6). While some settlements with only a few pit dwellings remained as before at their original sites, some settlements appeared at the K36 site (Ueno & Haga 1987; Akiyama 1997), the K440 site (Ishii 2002), and the K441 site (Haga 1989; Ueno 1989; Akiyama 2017).

In the Iburi-Hidaka region, the Ponma site has the remains of a pit dwelling that likely dates from this Phase III (Aono & Nagaya 2014). As in the preceding phase, the number of pit dwellings is extremely small in this region, but at the upper reaches of the Azuma river, at the Kamihoronai Moi site, for example, there are many remains of outdoor structures, suggesting an increase in active utilization of land. In the coastal area of Funka bay, there are shell middens at the Usu Oyakotsu site (Mineyama 1984) and the Usu 4 site (Aono & Mitani 2009).[2)]

In northern Hokkaido there were high-density settlements of nearly 30 pit dwellings each on the coastal area of the Sea of Japan—the Takasago site, the Kagawa Sansen site (Tomamae Town Board of Education 1988), and the Kagawa 6 site across from the Kagawa Sansen site on the other side of the Kotanbetsu river (Figure 7, bottom). Further north along the Sea of Japan coast is the Teshio Kawaguchi site (Ōba &Yamazaki 1971;

[2)] Of the shell middens along the coast of Funka bay that are reported to belong to the Satsumon culture, no pottery has been unearthed in most of them, making it impossible to tell precisely when these middens were formed. The oldest of the shell middens whose period is identifiable is Phase III.

Kaidō 1975; Kumaki *et al.* 1978)—located at the Teshio river mouth—where there are the remains of a huge settlement of more than 100 pit dwellings. Pottery artifacts from Phase III were recovered from partially investigated pit dwellings. The existence of a few hundred pit dwellings in the Kamui Kotan 1 site in the vicinity of the Kamikawa basin has been known since before World War II. While the whole picture of artifacts unearthed there is not clear, some pottery artifacts illustrated in survey reports come from Phase III (Takabatake 1894; Saitō 1972). Opposite that site across the Ishikari river is the Higashi Osamunai site with pit dwellings (Fukagawa City Board of Education 1997, 2011), suggesting the possibility that a large-scale settlement arose in Phase III. Small settlements of a few pit dwellings appear for the first time in Phase III at Point 2 of the Takasago site (Fukushi 1985); the Higashi Hirosato site (Oniyanagi *et al.* 1989); the Osamunai 6-chōme-fukin site (Kasai 1999); the Asahimachi 1 site (Segawa 1995; Segawa & Tomoda 1996); and the Teuri site No. 4 situated on a remote island (Ōba & Seki 1963; Seki & Kaidō 1968, 1969), among others.

As for southern Hokkaido, a high-density settlement of more than 30 pit dwellings seems possibly to have developed at the Satsumae site (Kubo *et al.* 1984). But it is difficult to use pottery to distinguish between that settlement and the structural remains that date to the first half of the following Phase IV (the late tenth century onwards) and later (Sakakida 2016). The scale of that settlement in Phase III remains unclear.

II. Settlement Types in the First Half of Satsumon Culture

Classification of Settlements

Settlement sites from the first half of the Satsumon culture, as we have seen, can be classified into two types based on number of pit dwellings, their density, and the length of site's duration.

Type I Settlements

Settlements consisting of a few pit dwellings and lasting only for one or two subperiods are referred to as Type I. Among sites representative of this type are Marukoyama, Kiusu 9, and Kiusu 5 sites in the city of Chitose; Kashiwagigawa 11 and Moizari 4 sites in the city of Eniwa; Iwanai site in the town of Yuni; N156 site in the city of Sapporo; Sawamachi site in the town of Yoichi; and the Herokaruusu site in the village of Tomari (Figure 2).

Type II Settlements

Type II settlements lasted for four or five subperiods, and their pit dwellings have been uncovered continuously. The number of pit dwellings per subperiod exceeded 20, at the maximum, and some dwellings overlapped subperiods. The most representative

settlements are the Suehiro site in Chitose, the "K39 sixth survey settlement cluster" in Sapporo, and the Ōkawa site in Yoichi (Figures 3–6).

Of course, there were some settlements with only a small number of dwellings in a given subperiod even if they lasted for a long time, while others had a low density despite having a large number of dwellings. It is difficult, therefore, to make a strict distinction between Types I and II. Various factors were presumably involved, such as differences in the size of the area excavated and in environments surrounding settlements. Further research is needed to ensure a more accurate classification of settlements. That being acknowledged, this study regards Types I and II as the basic "bipolar" types of settlements in the first half of the Satsumon culture.

Examination of Type II Settlements

To find clues that help elucidate settlement structures and their dynamics, this study pays attention to features shared by Type II settlements apart from settlement size, focusing especially on the following two:

Common Feature 1: Location as Key in Becoming Transport Junction

Type II settlements were conveniently located at points that connected Type I settlements, Type I settlements and a neighbouring region, and neighbouring regions. The following are some specific examples.

The Ōkawa site lies on a sand dune at the Yoichi river mouth on the southwestern coast of Ishikari bay (see map, Figure 8). Sailing northward from the Oshima peninsula along the Sea of Japan coast, Ōkawa is the first relatively open area of land after passing Cape Kamui at the tip of the Shakotan peninsula. This is known to be a dangerous part of the maritime route. Ōkawa is the gateway to the Sea of Japan side of northern Hokkaido by way of Ishikari bay, the Ishikari river mouth, and Cape Ofuyu.[3)] The Yoichi and Ishikari rivers afford access to inland areas.

The alluvial fan spreading over the northern part of Sapporo once had many abundant pools of groundwater from the Toyohira river, which were the source of the many streams, large and small, that flowed northward, repeatedly diverging and converging in a mesh pattern (Figure 9). Among them were the Sakushukotoni and Seronpetsu rivers originating from the largest of the spring pools. They then met the Keneushipetsu river that flowed northward from the southwest. The three became one waterway, whose name became the Shinoro river. The Shinoro ran northward and joined the Ishikari river (Haga 1975). The majority of Satsumon period settlement sites that have been investigated in the city of

[3)] It has been found that in the Kofun period and the medieval era, too, the Yoichi bay area, where the Ōkawa site is located, flourished as a centre of trade along the Sea of Japan (Yoshioka 2001; Hidaka 2003; Sekine 2014).

Sapporo are situated along those waterways. Moving southward along the Shinoro river, the confluence of the Keneushipetsu and Sakushukotoni rivers joins the Sakushukotoni and moves eastward a little before meeting the Seronpetsu. Near that confluence lies the "K39 sixth survey settlement cluster." That is to say, the cluster is located at a point that connects with the Shinoro river on the downstream side, and, on the upstream side, a group of rivers branching into many tributaries. It is also notable that if going downstream on the Shirono leads to the rivers of the Ishikari river system and from there all the way to the coastal area of the Sea of Japan at the mouth of the Ishikari river (Figure 8).

The Suehiro site is on a terrace along the main channel of the Chitose river. This is where the Chitose river, after branching off from the main channel of the Ishikari river and flowing southward, begins changing course from southwest to west (Figure 8). The site lies at the southern edge of the Ishikari lowland. Several kilometers south-eastward from there is a low-altitude watershed beyond which are the Bibi and Yūfutsu rivers that flow out into the Pacific Ocean. The watershed functions as a connection point between the Chitose river leading to the Sea of Japan and the Bibi river leading to the Pacific Ocean. It is significant that the Suehiro site is located nearby.

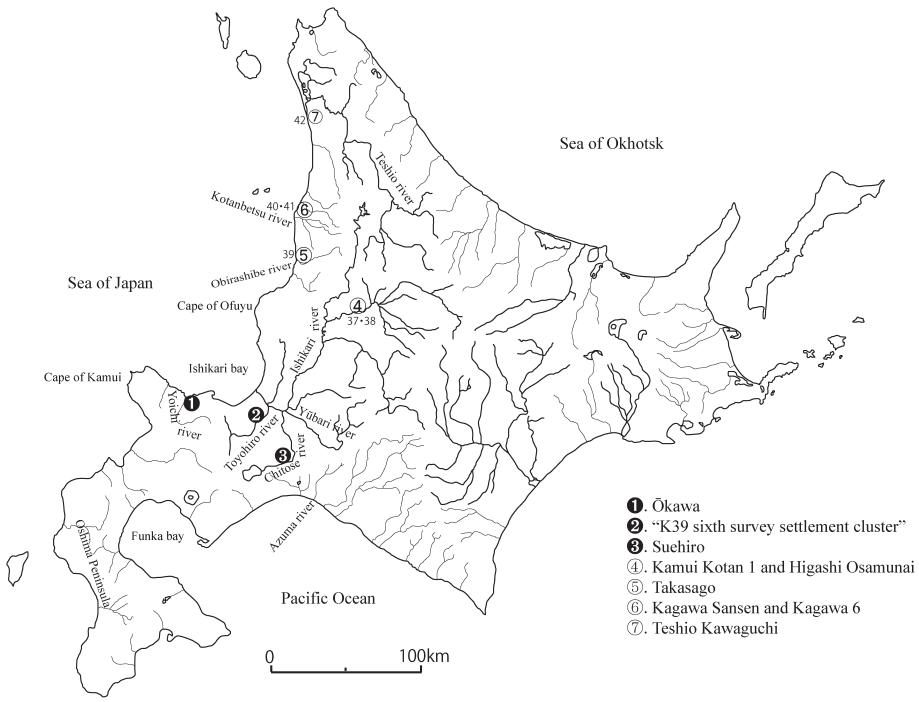


Figure 8. Type II settlements and related sites and places in central Hokkaido.

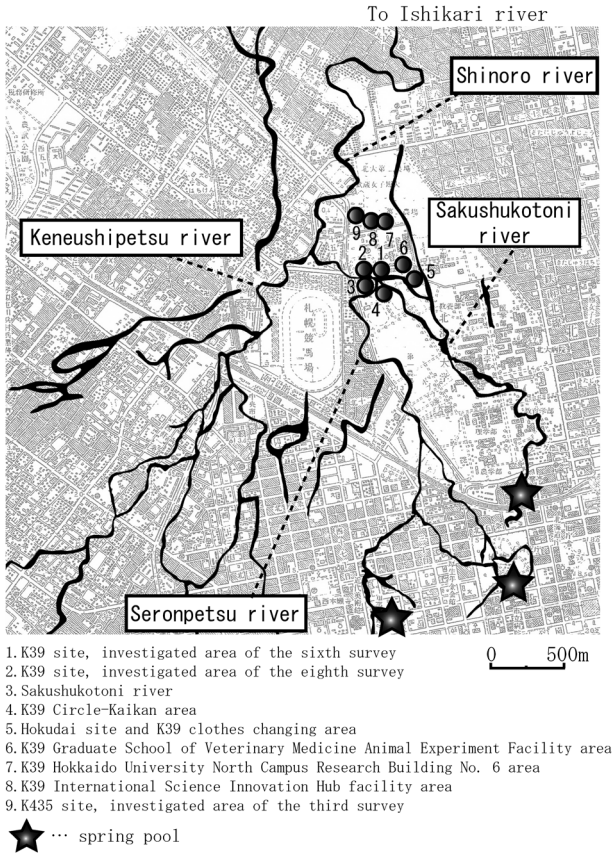


Figure 9. Rivers in relation to "K39 sixth survey settlement cluster"

Common Feature 2: Abundance of Relics of Honshu Origin

"Relics of Honshu origin" refers generally to both natural and manmade relics produced in Honshu, such as Sue ware, wheel-thrown Haji ware, and rice. There is a strong possibility that barley and wheat were also brought in from Honshu (Sakakida 2020), so this paper includes them among relics originating in Honshu.

In Type I settlements, every few pit dwellings yielded less than five Sue and/or wheel-thrown Haji pottery remains (Yamamoto 1997), or no such pottery artifacts were discovered at all. Rice or barley/wheat was found in less than 10 per cent of dwellings; when they were found, there were only several grains—at most 170 grains. As for Type II settlements, on the other hand, for example, at the Ōkawa site, more than 250 remains of wheel-thrown Haji and Sue ware vessels along with over 10 000 grains of rice were recovered (Okada & Miya 2000; Inui 2000, 2001a, 2001b). The Suehiro site has yielded more than 140 remains of wheel-thrown Haji and Sue ware pots (Chitose City Board of

Education 1981; Ōtani & Tamura 1982; Tamura 1985; Takahashi 1996). The excavated area of the Sakushukotonigawa site (Hokkaido University Archaeological Research Centre 1986; Yoshizaki & Tsubakizaka 1990), which is part of the "K39 sixth survey settlement cluster," was less than 6 000 square meters (Figure 4) and it yielded more than 60 artifacts of wheel-thrown Haji ware vessels—not including Sue ware—and more than 26 000 wheat/barley grains, which is an unusually high density (Yamamoto 1997; Sakakida & Takase 2019; Sakakida 2020).

Another feature of Type II settlements is that they contained artifacts that were not found in Type I settlements, including Haji pottery inscribed with sumi ink at the Ōkawa site, and Haji pottery with engraved inscription at the Ōkawa and Sakushukotonigawa sites. The Suehiro site did not produce such artifacts, but it should be noted that the Bibi 8 site, from which sumi-inscribed Haji pottery and over 100 wheel-thrown Haji and Sue pottery artifacts were recovered (Yamamoto 1997), is located on the upper reaches of the Bibi river, and is close to the Suehiro site by way of the important watershed mentioned in the preceding section, Common Feature 1.

What is indicated by these features is the presence of trade activities with social groups in the north-eastern region of Honshu carried on using river and ocean transport. It is presumed, in other words, that Type II settlements were equipped to function as local trade hubs. Suzuki Yasutami (1996) early on proposed that the Suehiro and Ōkawa sites each had functions of a "trading centre." In this study, which also examined these and other settlement sites, I come to the same conclusion. Suzuki had great foresight. I also consider it necessary to note that the structure of pit dwellings at the Suehiro and Ōkawa sites and artifacts (especially Satsumon pottery)—other than those of Honshu origin—recovered from these sites are basically the same as those at Type I settlements. This strongly suggests that the primary role of Type II settlements was to be daily living spaces, just like Type I. Type II settlements basically functioned as places for everyday life, and, depending on circumstances, had the flexibility to also function as venues for trade and other social activities.[4)]

[4)] Here let me touch on iron implements, which are crucial to any discussion of trade relations with the northeastern area of Honshu. According to data provided by Sasada Tomotaka (Sasada 2013, pp. 108–110), there is not much difference between Type I and Type II settlements in the rate of recovery of iron implements from pit dwellings. Blacksmithing-related items and structures were found at the settlement sites of both types (Figure 2; Sasada 2013, p. 28). These seem to undercut my proposition that Type II settlements doubled as places of trade. But the quantities of iron implements recovered from dwelling sites must be broadly assessed, taking into consideration the possibility that those implements were re-used or taken away from abandoned dwellings (Tsude 1969; Amano 1983); the forms of ownership of iron implements in the society or group, blacksmiths' moves and their place in society (Segawa 1989; Sasada 2013), and so forth. Amano Tetsuya's discussion (1983) on the forms of ownership of iron implements in the Satsumon culture was outstanding, but he has not done any follow-up study utilizing new, relevant data that have increased four- or five-fold since then (Sasada 2013). As a task for the future, bearing those points in mind, I would like to study and appraise the relationship between the structures and interactions of settlements and the quantities of iron implements recovered from them.

III. Settlement Structures and Dynamics in the First Half of Satsumon Culture

Structures and Dynamics: An Interpretation

Given the characteristics of Type II settlements presented above, a hypothesis can be formulated regarding settlement structure in the first half of the Satsumon culture. That is, a group of settlements consisted basically of settlements where people went about their everyday lives, while close by there was a core settlement (Type II) that, besides being a place of daily living, also served as a centre for trade and other activities. Starting from that proposition, I will attempt to elucidate the structures and dynamics of settlements by period, drawing also on propositions put forward by previous studies.

Phase I (Late Seventh Century to Early Eighth Century)

In the southern part of the Ishikari lowland, a group of Type I settlements took shape scattered around the (Type II) Suehiro settlement site (Figure 10). This group most likely functioned as a unit, not only as a distribution network of goods acquired from the north-eastern society of Honshu but also as a space where all kinds of information about livelihood were shared, and resources received from various places were exchanged. A relevant hypothesis was formulated some time ago by Ōi Haruo (1984). Ōi pointed out, first, that most of the settlement sites along the Chitose river system were distributed along its tributaries while the Suehiro site was located along the principal river and had a many pit dwellings. Thus, Ōi argued, the Suehiro site was "exceptional." Second, he postulated that the settlements along the Chitose river's tributaries were mutually exclusive "local groups" (*chiiki shūdan*)—discrete socio-political units—with separate salmon/trout spawning beds as their fishing territories with the Suehiro site supervising the local groups. This farsighted postulation advanced by Ōi in the early 1980s overlaps substantially with my present study.[5)]

Such a structure in a group of settlements is not found in the north-western part of the Ishikari lowland or the Sea of Japan side of central Hokkaido (Figures 11 and 12). The question is whether or not Type I settlement sites scattered over these two regions were functionally part of the group of settlements centred around the Suehiro site in the southern part of Ishikari lowland. It should be noted here that there is a regional difference between the north-western and the southern parts of the Ishikari lowland seen in pottery type and lineage as well as in the functional differentiation of the fireplace regarding cooking minor grains (Sakakida 2016, 2020). These regional differences depended on the degree

[5)] Further research on several fronts is needed to determine the specific details of how settlement clusters were held together, or the characteristics of "local groups" and their territorial space.

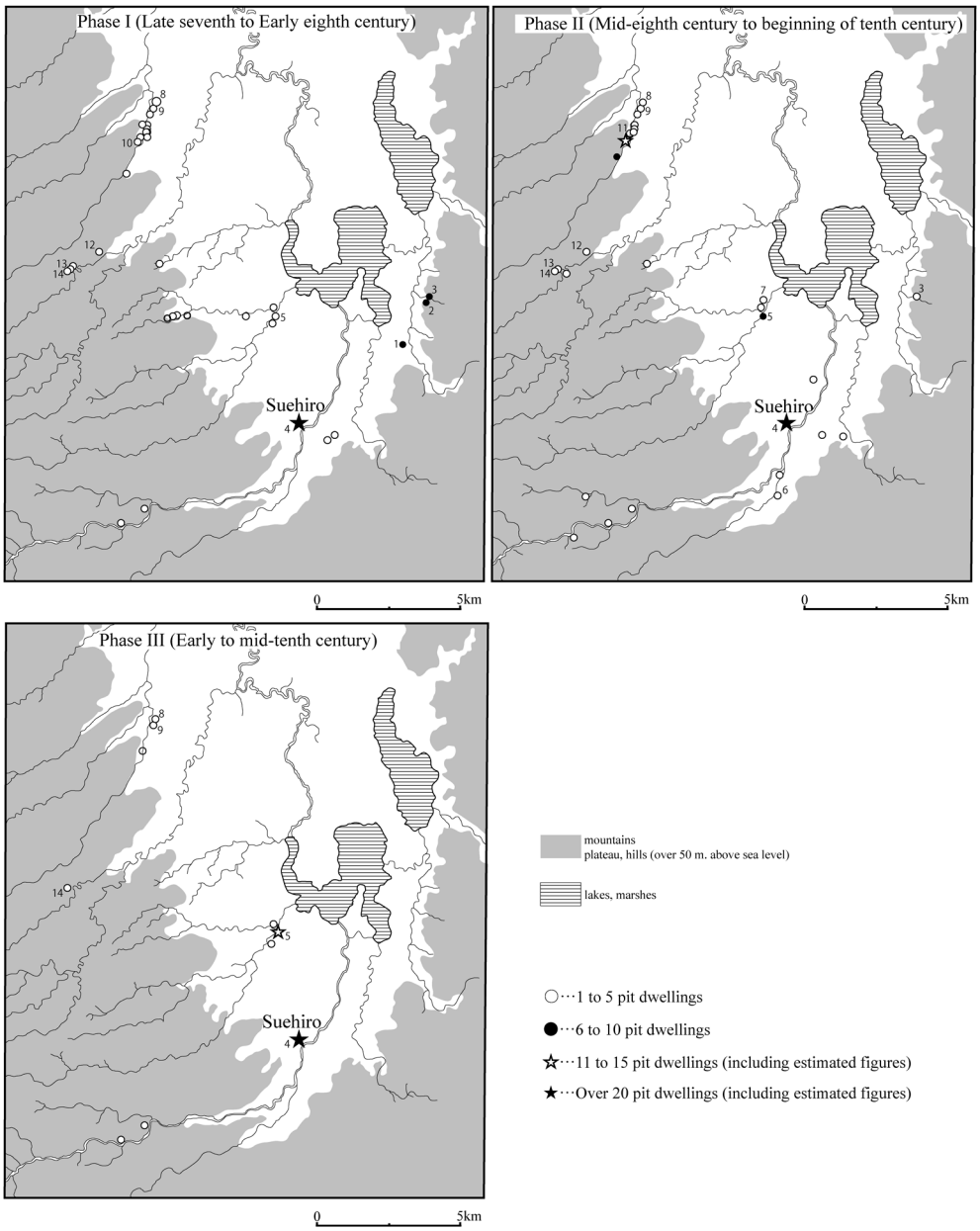


Figure 10. Dynamics of southern Ishikari lowland settlements in the first half of Satsumon culture.

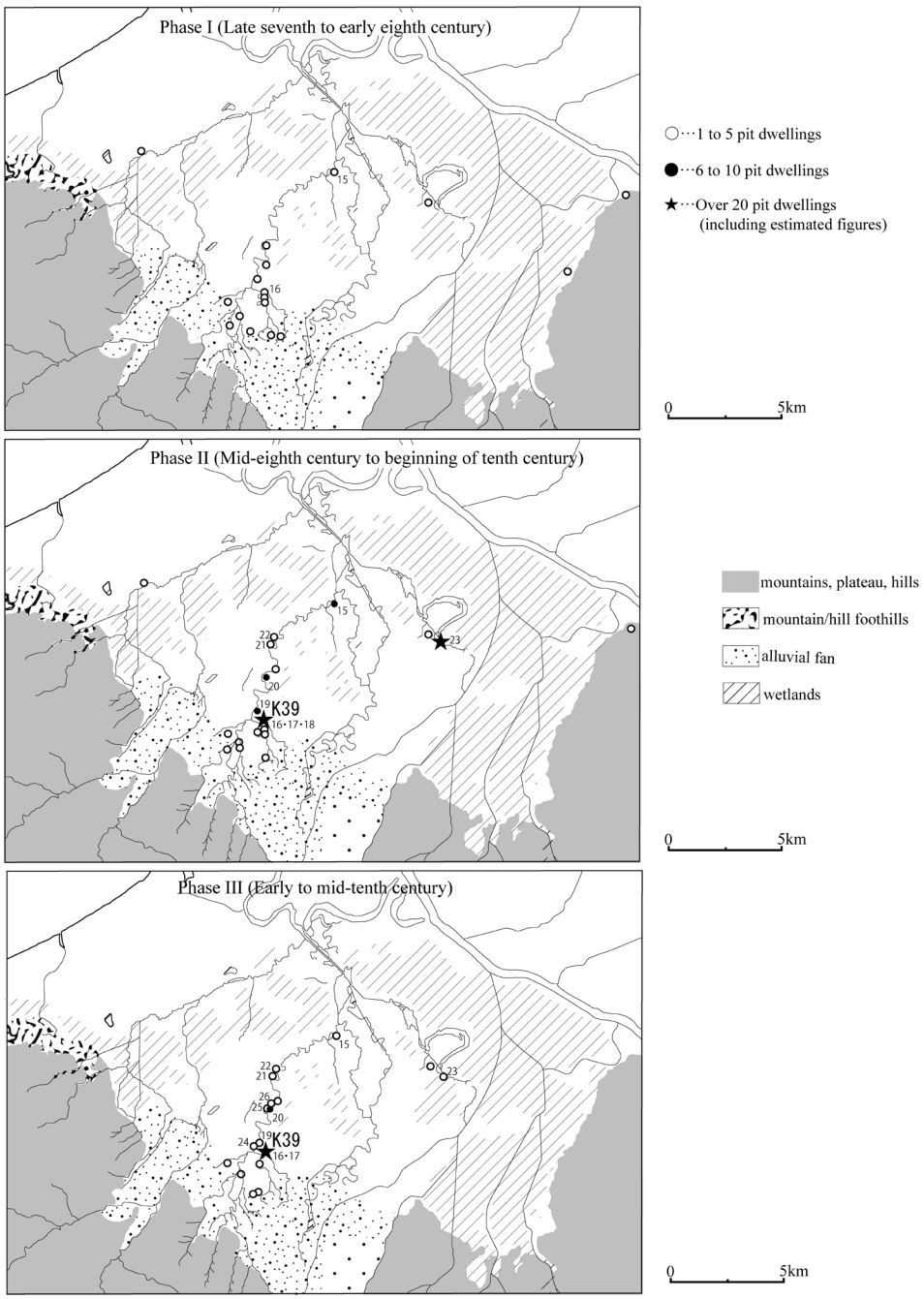


Figure 11. Dynamics of north-western Ishikari lowland settlements in the first half of Satsumon culture.

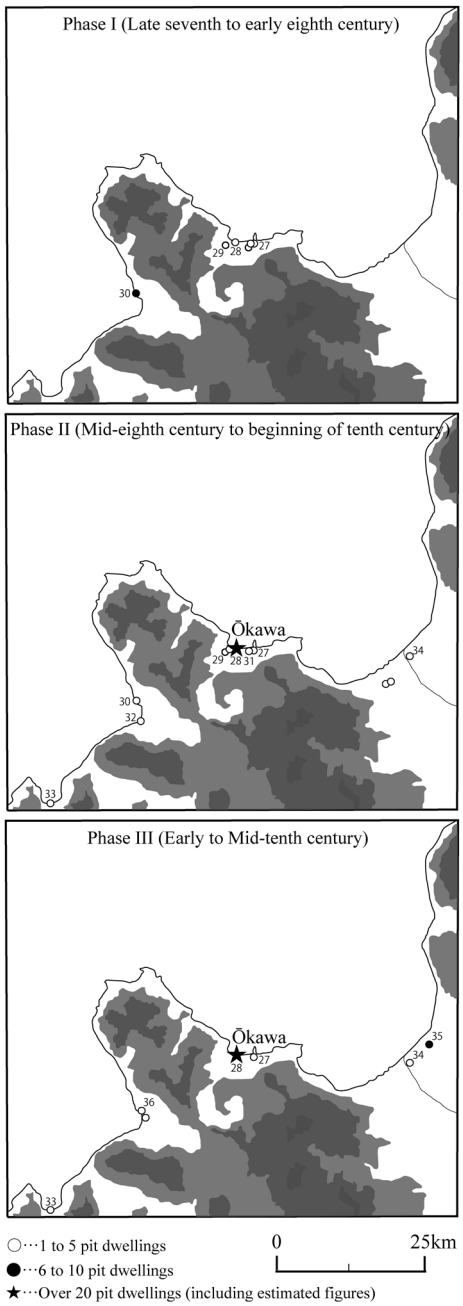


Figure 12. Dynamics of settlements on the Sea of Japan side of central Hokkaido in the first half of Satsumon culture.

of influence from the culture of north-eastern Honshu, and the strength of local traditions toward the end of Post-Jomon culture. They suggest that a society with a significant degree of independence existed in the two regions. In this Phase I period, therefore, a group composed of Type I settlements alone was the norm in both the north-western part of the Ishikari lowland and the Sea of Japan side of central Hokkaido, and those groups were most likely independent of the settlement groups in the southern part of the Ishikari lowland. Yet their shared pottery type and lineage indicate that the two regions had close ties (Sakakida 2016). That their pottery, an item of everyday life, had such common features is sufficient evidence to presume daily interactions among the pottery makers and denizens of the two regions.

In the eastern coast area of Ishikari bay on the Sea of Japan side of central Hokkaido, as well as in the Iburi-Hidaka area in southern Hokkaido and the Kitakamigawa basin in northern Hokkaido, there are some places that have no pit dwelling sites. In the Kamikawa basin, as noted earlier, fairly large quantities of Hokudai 3-type 2 pottery, together with many outdoor firepits, suggest the possibility that the people who occupied these places did not use pit dwellings. This possibility should be kept in mind for future reference. I will not go into this matter further since little progress has been made in the subdivision of Hokudai 3-type 2 pottery, which makes period identification difficult.

Phase II (Mid-Eighth Century to Beginning of Tenth Century)

In southern Ishikari lowland, an aggregated group of Type I settlement sites scattered over the area around the Suehiro site (Type II) as their core continued to be evident in Phase II (Figure 10). Meanwhile, two newly-emerged aggregated groups of Type I settlement sites came into being. One of them had sites distributed here and there in north-western Ishikari lowland centred on the "K39 sixth survey settlement cluster" (Type II). The other had scattered settlements in the Sea of Japan side of central Hokkaido, centred on the Ōkawa site (Type II) (Figures 11 and 12). During this Phase II, a wide expanse of central Hokkaido was home to many clusters of residential settlements, each with a core settlement nearby that doubled as a hub of trade or other activity (Figure 8).

It might seem at first glance that this type of settlement structure spread from southern Ishikari lowland to north-western Ishikari lowland and Sea of Japan-side central Hokkaido, but, actually the influence of individual cultural elements spread from north to south. To take pottery type, for example, in Phase I pots (*kame*) in the style of Haji ware of north-eastern Honshu were distributed plentifully in the north-western Ishikari lowland, and now in Phase II, their numbers increased in the southern Ishikari lowland (Sakakida 2016, pp. 105–106, 303–304). The impact of the functional differentiation of fireplace regarding minor-grain cooking also spread from the north-western part to the southern part of the Ishikari lowland (Sakakida 2020). From these and other examples, it can be concluded

that the newly-emerged aggregated groups in the north-western Ishikari lowland and Sea of Japan side of central Hokkaido each took shape from the previous period's settlement groups, which consisted only of Type I settlements, and along with them, because of peculiar social factors, a central Type II settlement emerged, as in the case of southern Ishikari lowland.

One of the most likely factors influencing these developments is that a trade system centring around the fortified settlement of Akita Castle was established in the northern part of north-eastern Honshu in this Phase II period (Minoshima 2001). As if in response, human activities grew much more vigorous in the Sea of Japan coastal area of Honshu, attested by the rise of new settlements in the Tsugaru and Aomori plains areas (Ube 2010). Sue ware vessels produced at kilns in the vicinity of Akita Castle were brought in large quantities to central Hokkaido (Ube 2011; Suzuki 2016). People living in north-eastern Ishikari lowland and the Sea of Japan side of central Hokkaido undoubtedly felt the need for Type II settlements that acted as trade centres, channels through which Honshu-made products could be brought in.

The invigoration of trade is also thought to have led to the rapid increase in use of low-lying areas, such as the lower reaches and mouths of rivers and coastal sand dunes, for dwellings. Perhaps that was natural. If trading at Type II settlements was dependent on transport by river and sea, the location of those settlements in low-lying areas ensured a route through which to safely and smoothly deliver goods and people from communities in north-eastern Honshu to Type II settlements in various parts of Hokkaido. Meanwhile, low-lying riverside areas were subject to the danger of flooding caused by heavy rain or melting snow. Developing a living style that could cope with that danger—by such measures as seasonal, short-term migration—became necessary when building and maintaining Type II settlements (Fujimoto 1982). It can be said, in other words, that the new aggregated groups of settlements in the north-western Ishikari lowland and Sea of Japan side of central Hokkaido appeared in low-lying areas—despite the need to incorporate flood-avoidance measures into their lifestyle—in order to ensure the safe and smooth conduct of trade with the north-eastern region of Honshu.[6)]

Even in the southern Ishikari lowland, where the settlement group centring on the Suehiro site was maintained from the previous period, Sue ware vessels made in Dewa province on the Sea of Japan coast side of northern Honshu were shipped in (Ube 2011; Suzuki 2016), indicating that more people were now living in low-lying areas where trade was a social requirement. In addition, as noted earlier, the influence of unconventional

[6)] Occupying low-lying areas was probably linked to the emergence of more land suitable for living as a result of changed river activities. At the H519 site, a thick layer of river flood sediments lies immediately below the layer containing relics from the Satsumon culture period, and pit dwellings and other structures were built on the natural embankments that developed after the river activity subsided.

pottery types and the use of hearths for minor-grain cooking spread from the north-western part to the southern part of Ishikari lowland. Such inter-regional interactions in daily life took place not only among Type I settlements scattered over a large area but also, very likely, through the mediation of Type II settlements. Also in the southern Ishikari lowland, Type I settlements tended to be either reduced in size or abandoned altogether, in the case of the Maoi hill to the east and along the Yūbari river even farther to the east (Figure 10). To explain this phenomenon, we can say that with more lively trade activity than before, the tributaries of the Chitose river system became even more important as pipelines connecting Type II and Type I settlements, and that areas too far removed from exchange locales were no longer suitable as settlement locations.

In areas without pit dwellings in the previous period, Type I settlements were now established (Figure 7, top). Where did occupants of these settlements come from? There are several possibilities, including, first, that groups of people who did not use pit dwellings, which had been in existence since Phase I, began living in pit dwellings; second, that groups of people in the southern and north-western parts of Ishikari lowland and the Sea of Japan side of central Hokkaido moved in and settled in heretofore uninhabited places, camp sites, and elsewhere and began living in pit dwellings. As of now, the data are too limited to draw conclusions, but be that as it may, the establishment in Phase II of such Type I settlements must have been related to the abundance of structural remains dating from the following Phase III.

What about the situation in southern Hokkaido? In Phase I, settlement sites that can be identified as Type I are scattered in the southern and eastern parts of the Oshima peninsula. Their distribution is skewed toward the Pacific Ocean side, indicating interactions—via the Pacific coast route—between the southern part of Ishikari lowland and the northern part of the Pacific coast region of north-eastern Honshu (Yagi 2010). For Phase II, the situation is unclear: Pacific-side settlements decreased in number while settlement sites have not been found on the Sea of Japan side of the peninsula. Type II settlements were not formed in either Phase I or II, showing a different development trajectory from that seen in central Hokkaido.

Structures of Settlement Groups in Phase III (Early to Mid-Tenth Century)

Focusing mainly on the characteristics of Type II settlements, we have discussed the structures and dynamics of settlements in the first half of the Satsumon culture period. Were these structures maintained and carried into the second half of the period? Let us look at that question by examining the settlement structures in Phase III.

The settlement structures were maintained from the previous period in the southern and north-western parts of the Ishikari lowland and the Sea of Japan side of central Hokkaido (Figures 10, 11, and 12). Meanwhile, the northern part of north-eastern Honshu saw epochal changes in various kinds of manual industry, characterised by vigorous

growth in production activity and an impressive expansion of settlements (Saitō 2019). Presumably the trade centre function of a Type II settlement became even more important than before—which undoubtedly explains why the previous settlement structure was maintained. But, the southern part of the Ishikari lowland also showed a new change: many Type I settlements that had been scattered over a wide area were abandoned, or gathered together at specific places (Figure 10).

In the Sea of Japan coastal area of northern Hokkaido and the area around the Kamikawa basin there appeared newly created settlements made up of dozens to a few hundred pit dwellings (Figure 7, lower; Figure 13). Segawa Takurō (2005) advanced an intriguing hypothesis about settlement structures in northern Hokkaido. He postulated, first, that Kamikawa basin settlements located near streams where salmon would swim up and spawn, caught salmon and traded them for iron, a necessity for life there, and second, that settlements on the Sea of Japan coast of northern Hokkaido were "distribution villages" that functioned as "river-mouth ports" to ship out the salmon caught by people in Kamikawa basin settlements. Indeed, as he pointed out, pottery items in settlements of the Sea of Japan coast of northern Hokkaido and the Kamikawa basin are very similar to each other in form, shape, and pattern. The two regions must have had a relatively close relationship. If, therefore, one sees the Sea of Japan coastal settlements as Type II settlements that doubled as trade centres and the Kamikawa basin settlements as Type I, clearly this view overlaps significantly with my own hypothesis discussed above.

Regarding the Takasago site and the Kagawa Sansen and Kagawa 6 sites, all of them on the Sea of Japan coast (Figure 8), Segawa (2005) confirmed from a document written toward the end of the Edo period (1603–1867) that neither the Obirashibe river running close to the Takasago site nor the Kotanbetsu river close to the Kagawa sites were salmon spawning streams. He asserted that those settlement sites were not formed for salmon fishing. His description of Sea of Japan coastal settlements as "distribution villages" was made on the basis of the low fishing productivity of the Obirashibe river. However, his

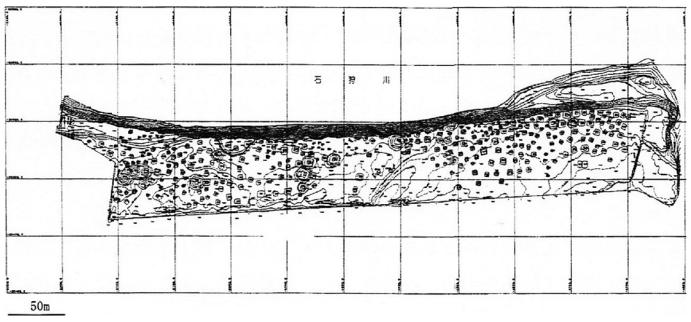


Figure 13. Settlement at Kamui Kotan 1 site (excerpt from Segawa 2005).

source, *Tōyama Muragaki nishi-Ezo nikki* (Diary of West Ezo by Tōyama Kagemichi and Muragaki Sadayuki), records that in the areas around the Obirashibe and the Kotanbetsu rivers there were two fishing grounds for salmon, Ushiya and Uenbetsu, and four for trout, Ushiya, Oonishika, Memotomari, and Shaumentomari (Takakura 1982, pp. 405–407). Another late-nineteenth-century document mentions salmon fishing at Uibira (Nakayama 1944, p. 96). Of course, some may argue against an attempt to assume the fishing environment of the Satsumon culture directly from late nineteenth-century records. And yet, it is hard to imagine that the areas around the Takasago and Kagawa sites had low fishing productivity in the Satsumon period. At the Takasago site and the Kagawa Sansen and Kagawa 6 sites, remains of fish and animals probably caught in nearby rivers and seas have been discovered. Faunal remains including those of herring, salmon, dace, and marine mammals have been recovered from the sites of hearths inside pit dwellings at the Takasago site, and those such as of unidentified fish and marine mammals have been recovered from the sites of pit-dwelling floors and hearths at the Kagawa Sansen and Kagawa 6 sites (Mineyama *et al.* 1982; Nishimoto 1987, 1988). We can therefore consider both these settlement sites to have been primarily a dwelling space that supported subsistence. As discussed earlier in connection with the Ōkawa site, I assume that the primary function of Type II settlements was as a dwelling place, adaptable when needed to trading and other functions depending on demand and opportunity. If the Takasago and Kagawa sites are categorised as Type II as in the first half of the Satsumon culture period, we can say that their location in both cases was the result of being well suited to the coexistence of daily living and trade activities.

It should be noted, meanwhile, that major changes occurred in the structure of settlements of this period. In northern Hokkaido there appeared settlements that were far larger in scale than the preceding ones of Type II. They include the Kamui Kotan 1 site, the Higashi Osamunai site, and the Teshio Kawaguchi site (Figure 13). Relics indicating active trade activities have not been discovered at these sites, however, so the factors behind the settlement enlargement were most likely related to subsistence and lifestyle.[7)] That is to say, there is the possibility that at some time during Phase III in the northern part of Hokkaido a new settlement structure developed which was not an adaptation of the model from the first half of the Satsumon culture period. If that supposition is valid, the interpretation noted earlier of the settlement structure at the Kamikawa basin and the Sea of Japan coast may need to be reconsidered. The sceptical view (Sasada 2013) doubting the

7) Segawa (2005), for example, postulates that the intensive hunting of salmon moving upstream in the main course of the Ishikari river in large schools and the securing of sufficient numbers of hunters were key factors behind the emergence of large-scale settlements such as at the Kamui Kotan 1 site. Ōi (1984, 2004), who believes it is difficult to assume large catches of salmon on the main Ishikari river in the period in question, suggested mass-migration from the Ishikari lowland due to changes in subsistence modes.

presence of vigorous trade activities (mainly in iron) in northern Hokkaido, also, raises the question of whether the settlement structure and dynamics in the region can be explained in the same way as for the first half of the Satsumon period.

Another important change is the emergence of sites and regions that seem to have specialised in some form of manufacturing. The Satsumae site in southern Hokkaido, which is considered to have been a settlement engaged in manufacturing iron and supplying it to other regions in Hokkaido, possibly came into being during this period (Amano 2007; Sasada 2013). In the Iburi-Hidaka region, more numerous traces were found of hunting and fishing activities. For example, there are concentrations of deer and other animal bones at sites in the upper reaches of the Azuma river, and shell middens were formed along the coastal area of Funka bay. Minoshima (2011) sees those developments as early signs that what Segawa (2005) refers to as "lifestyle suited for trade" was emerging. But it was along the Pacific coastal route connecting with the central and eastern parts of Hokkaido that the trade in iron implements is assumed to have become active (Sasada 2013). So, in the end, it is difficult to use iron manufacturing and trade to explain the settlement enlargement in northern Hokkaido. Inasmuch as even the date when the Satsumae site was established is not clear and the accuracy of the period identification of structural remains is still very questionable (Sakakida 2016), I will not, at this time, attempt to discuss the iron trade in southern Hokkaido for this period.

We have seen that changes in Phase III (the early to mid-tenth century) show a clearly different development from the first half of the Satsumon period (late seventh century to the beginning of the tenth century). In fact, the Tobinitai culture, too, which spread in eastern Hokkaido parallel to the Satsumon in the same period, grew in number of sites and its cultural sphere expanded (Figure 14; Muramoto & Sakakida 2018), indicating more vigorous community activities taking place there. And, when we consider the relationships among pottery types, it is difficult to suppose that the Tobinitai developments had nothing to do with the Satsumon culture (Sakakida 2016, pp. 247–253, 306–309). Settlements made up of more than 100 pit dwellings each, as discussed here, correspond to Fujimoto Tsuyoshi (1982)'s *daishūraku* ("large settlements") and Ōi Haruo (1984)'s *daikibo-shūraku* ("large-scale settlements"). They have been found widely dispersed in the succeeding first half of Phase IV (the late tenth century onwards) at the Sea of Okhotsk coast of northern and eastern Hokkaido and the Pacific coast of eastern Hokkaido.[8)] There is an extremely

[8)] Ōi (1984) contends that the Suehiro site of more than 100 pit dwellings can be compared to "large settlements" in the northern and eastern parts of Hokkaido. But the Suehiro site is the remains of a settlement that continued to be used from the beginning of the Satsumon culture, and "more than 100 pit dwellings" is the result of pit dwellings accumulated over a long period of time. Further research is needed to see if it is possible to treat a settlement (the Suehiro site) whose size was formed over several hundred years the same way as we treat "large settlements" of a few hundred dwellings built over comparatively short periods starting in the first half of Phase IV in northern and eastern Hokkaido.

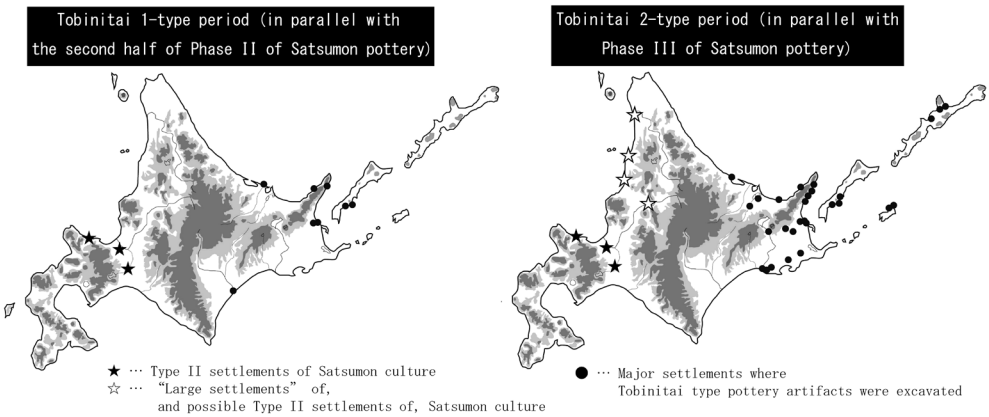


Figure 14. How sites of Tobinitai culture spread. (Note: Based on Sakakida 2016).

strong possibility that the explosion in the number of archaeological sites (Sawai 2007, etc.) and the emergence of numerous "large settlements" (Fujimoto) occurred as a result of various changes that took place across Hokkaido during Phase III. In the interest of further expanding the discourse on settlements from the 1980s and earlier, I want to stress once more the importance of exploring the settlement structure, the relations among settlement groups, and the utilization of land in the Phase III period.

IV. Future Issues—Summary

The basic structure of a settlement cluster in the first half of the Satsumon culture period (late seventh century to the beginning of the tenth century) consisted of small and medium-size settlements that functioned as everyday living spaces with a larger settlement in the vicinity that served as a centre of trade or other activity in addition to being a place for everyday life. This settlement structure is found only in the southern part of Ishikari lowland during Phase I of pottery chronology (late seventh to early eighth centuries). In Phase II (mid-eighth century to beginning of tenth century), however, responding to an intensification of various activities and increase in trade and interaction opportunities in the north-eastern region of Honshu, a similar settlement structure emerged in the north-western part of the Ishikari lowland and also in the Sea of Japan side of central Hokkaido. As trading and other activities continued expanding in that part of Honshu, this settlement structure was maintained in central Hokkaido even in Phase III (early to mid-tenth century). Meanwhile, some regions of Hokkaido saw greatly enlarged settlements and diversified use of land, suggesting the possibility that a settlement structure and inter-settlement community relations took shape that differed from those in the first half of the

Satsumon culture period.

Finally, I wish to point out two issues for future consideration. First, it is necessary to define the extent of individual settlement sites more exactly and bring greater precision to the classification of settlements. For example, we can confirm separately registered settlement sites situated successively along the Kashiwagi river and the Old Kotoni river, in the southern part and the north-western part of the Ishikari lowland, respectively (Figures 10 and 11). This paper counted the number of pit dwellings by considering one site as one settlement for the sake of convenience. But this approach might risk underestimating the number of dwellings thought to have been dispersed among several settlements, when those dwellings might actually have belonged to one single settlement. Thus, there is room for improvement in clarifying the distinction between Types I and II.

The second issue for future consideration is settlement sites that have yet to be discovered. In the southern part of Ishikari lowland, especially, where excavation areas for most sites are small, it is possible that settlements comparable to the Suehiro site exist and remain undiscovered. One of them could be the Osatsu 2 site, given its high density of pit dwellings, its continuous existence, and its location.

Further research is needed to fully assess settlements, groups of settlements, and their territorial extent for each period. Much remains unknown in this regard, which is why this paper does not go into the characteristics of individual settlement constituents, such as "local groups" (Ōi 1984).

I am aware that the results of my analysis in this paper shed light on only some aspects of settlements that date from the first half of the Satsumon culture. Trading activities could not have been the only factor that determined the location and size of settlements. The perspective of subsistence and living style must also be taken into account, and that makes it necessary to understand relations between the natural environment and human habitation; relations between settlements of different types and how their relative positions efficiently facilitated obtaining and producing food and other livelihood resources; and how social distance and relations between neighbouring regions affected the extent of settlements. Discussions on settlements from that perspective were promoted in the 1980s and earlier. From the perspective of socio-economic activities—other than trading—it is also necessary to consider division of labour and interactions within and among settlements (Segawa 1989); the group composition and social organization that enabled such division of labour and settlement interactions; and, in addition, political and economic relations with surrounding East Asian states. Understanding the structure and dynamics of settlements in the broader context of the relationship between the settlement system and its determinant, or socio-ecological system, will integrate, in the true sense, research on settlements conducted until the 1980s and research done since the 1990s. This approach is also essential to research on the settlements of the Satsumon culture.

This study is only the starting point of forging new directions in research on Satsumon culture settlements, and the path ahead is long and challenging. But I hope my work will play a useful role in bringing together the research approaches to Satsumon settlement sites that were disconnected before and after the 1990s, and suggesting directions for future study.

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