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A study on pottery from Southern Kamchatka in T. M. Dikova and N. N. Dikov collections

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Abstract: T. M. Dikova and N. N. Dikov collections, currently conserved in the North-Eastern Interdisciplinary Research Institute (NEISRI), Far Eastern Branch, Russian Academy of Sciences, are the largest collections of archaeological materials from the Kamchatka Peninsula. Although ceramic specimens in these collections definitely play a significant role in our approach to study the early history of the Kuril Ainu, only a small number of potsherd in them have been published so far. In this study, we present a total picture of the pottery from Southern Kamchatka housed in these collections and demonstrate that a hypothesis on temporal change in the distribution of Naiji pottery can be supported.

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Keywords: Kamchatka, Kuril Islands, Kuril Ainu, Naiji pottery

1. Introduction

The Kuril Ainu, users of the Kuril dialect of Ainu, were indigenous people of the Northern Kuril Islands. In the end of the 17th century they appeared as “Kurile” in Russian historical documents, and their customs and activities were documented in both Russia and Japan from the 18th century. From the 19th century, they were bombarded with border changes between Russia and Japan, and their population sharply decreased soon after their forced migration from the Northern Kurils to Southern Kurils in 1884 by the Japanese government. Because of such a tragic history, there is currently no flame keeper of the culture (Murasaki 1963). Although the history of the Kuril Ainu from the 18th century can be demonstrated by written records, their history before the end of the 17th century has not yet been thoroughly revealed. Archaeologically, the Nalychevo Culture proposed by N. N. Dikov (1979) is expected to provide significant clues for the early history of the Kuril Ainu because its distribution area covers the Northern Kurils and Southern Kamchatka. It is composed of fishing and hunting implements similar to those found in Hokkaido and various goods, such as coins, porcelain fragments, and various iron/brass tools,

manufactured in the Japanese Islands (e.g., Utagawa 1989). In Russia, however, this archaeological culture has been assigned to a part of the “Old Itel’men Culture,” and previous researches have been negative to study it for revealing history of the Kuril Ainu. On the contrary, although historical documents and ethnographic descriptions from Japan after the 18th century indicate that they only lived in the Central and Northern Kurils, archaeologists, historians, and some linguists predicted the Kuril Ainu’s occupation in the Kamchatka Peninsula before the 18th century (Murayama 1968, 1987, Kikuchi 1989, 1990, Maeda 1989, Yamaura 1989). However, discussions about this problem have not developed because of a shortage of archaeological information, with the exception of some studies on the diffusion process of hunting/fishing tools and fortress sites (e.g., Suzuki 1965, Kato 1979, 1980, Ushiro 2000, 2001). Thus, their early history is still completely unknown.

In this study, we examine the early life of the Kuril Ainu based on the observation of the artifacts collected by Dikova and Dikov, that constitute the largest archaeological collection from Kamchatka. This study particular focuses on temporal changes in the area occupied by the Kuril Ainu and its ancestral group through an examination of their characteristic pottery that had inner lugs for hanging by rope. It is known as Naiji pottery and was locally produced as a simulant of the Japanese iron pan.

2. Research background and hypothesis

Naiji pottery is distributed over a wide area from Eastern Japan to Southern Kamchatka. Additionally, numerous specimens have been unearthed in Sakhalin. In these regions, Naiji pottery was likely produced to compensate for a deficiency in iron pans. In the Northern Kurils and the Kamchatka Peninsula, this pottery is one universal element of the Nalychevo Culture (or Nalychevo period) that has been roughly dated to the latter half of the second millennium CE (Dikova 1983, Ponomarenko 1985, 1993, 2000) (Figure 1). Naiji pottery is a more precise indicator for tracing the history of the Kurile (the predecessor of the Kuril Ainu that date between the mid-15th to the 17th centuries)/Kuril Ainu (the documented ethnic group after the beginning of the 18th century) than other artifacts because its age is easy to determine, and spatial comparisons are distinctive.

Recent field investigations in Kamchatka have established a chronological system of this pottery (Takase 2013a). According to this system, Naiji pottery from the Northern Kurils and Kamchatka can be classified into four types: types Ia, Ib, II, and III (Figure 2). Type Ia is characterized by a shallow and wide groove on the inner rim, an elevated band on the exterior rim, relatively small inner lugs (less than 5.0 cm in length), and small lug holes. There are no ornaments or projections on the rim. Generally, pottery of this type was elaborately made and has a relatively thin wall. In contrast, the type II clay pan was made using a coarser technique. It has a thicker wall and large inner lugs (more than 5.0 cm in length) with relatively large holes. There is no shallow and wide groove on the inner surface and, occasionally, projections on the rim and ornaments on the exterior surface can be seen. Type Ib has characteristics of both types Ia and II in a potsherd. Type III is characterized by a vertically tilted body wall, but this type consists of only one specimen from Shumshu Island.

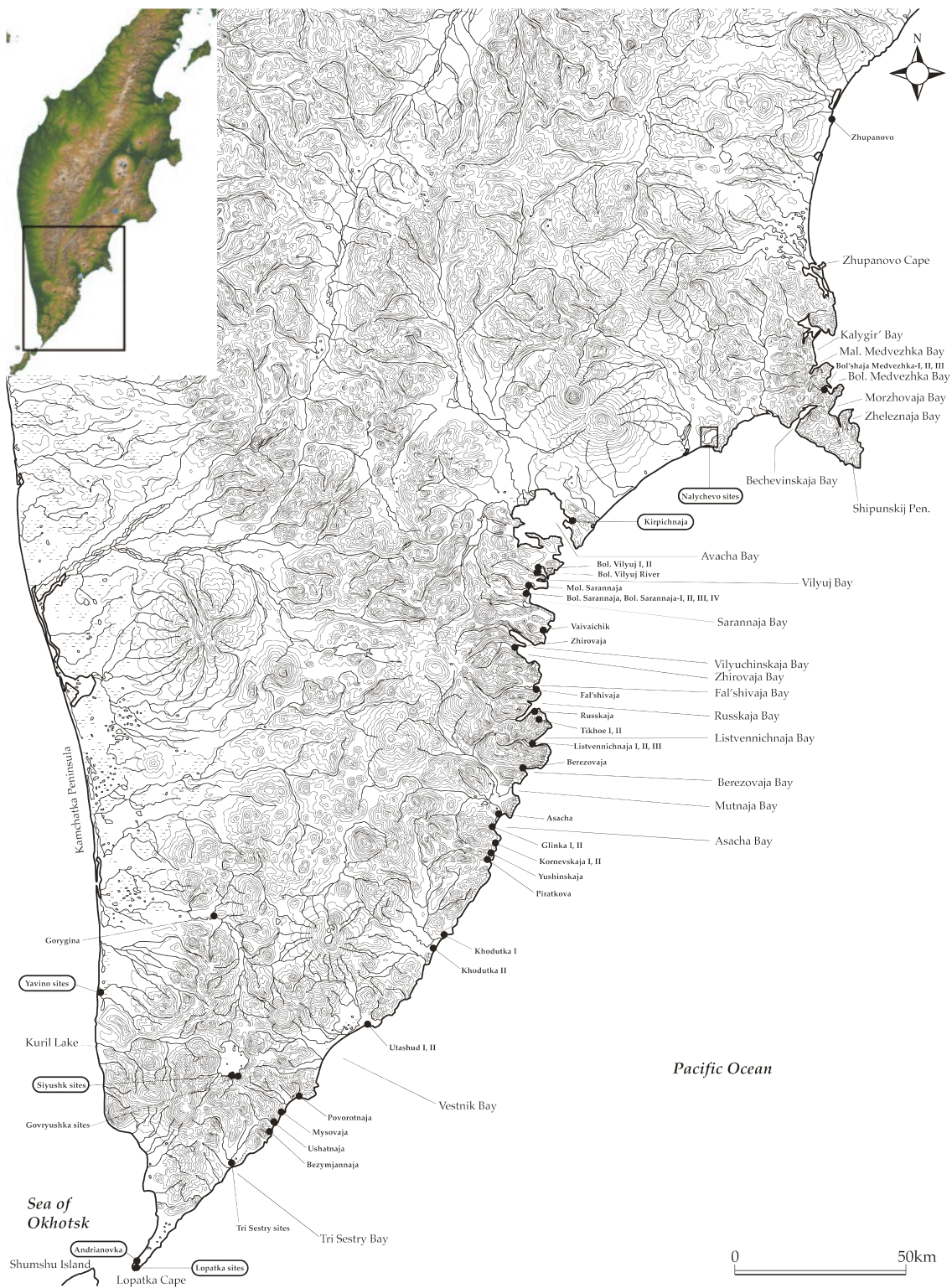


Figure 1 Map showing the location of archaeological sites of the Nalychevo Culture

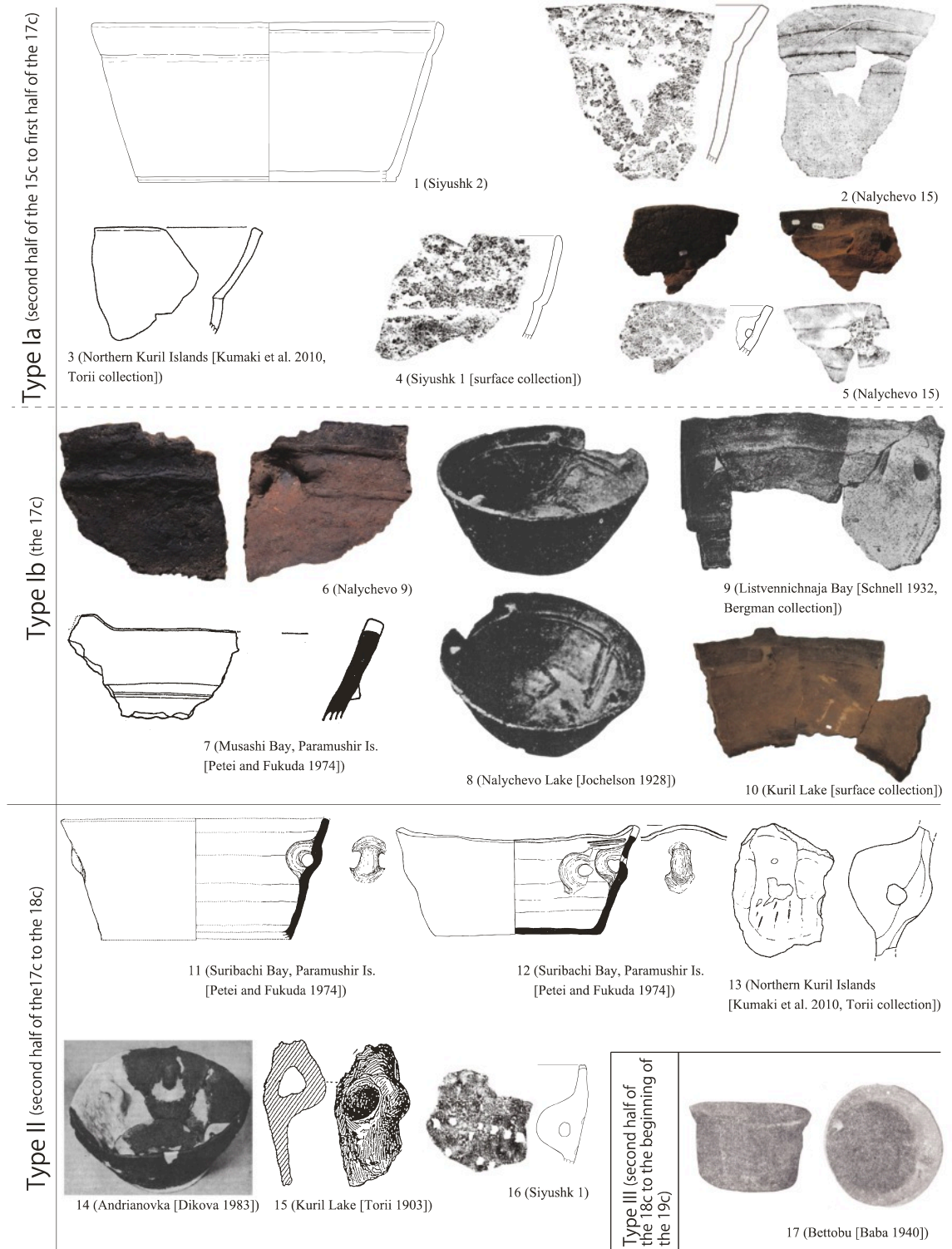


Figure 2 Chronology of Naiji pottery in the Northern Kurils and the Kamchatka Peninsula (Takase 2013a, reprinted with minor alteration)

On the basis of radiocarbon dating, Type Ia is assigned to a period from the mid-15th to the mid-17th centuries, while type II is dated from the mid-17th to the 18th centuries. Although there is still no reliable radiocarbon date for type Ib, it is estimated to be dated to the 17th century since it is an intermediate type between types Ia and II. Although there is also no radiocarbon date for type III, the body shape was influenced by Russian iron pans, indicating that it is newer than type II; thus it is temporarily dated after the mid-18th century.

In Southern Kamchatka, there is no evidence of pottery throughout its prehistory. There is also no tradition of pottery production among the Itel'men, an indigenous people in Southern Kamchatka. Therefore, Naiji pottery is the first and last pottery in this region. Furthermore, the archaeological culture dating just before the occurrence of Naiji pottery is still unknown. We presume that this area was a no man's land or had an extremely low population density from the KSI ash fall (ca. 1800 BP) to the first half of the 15th century (Takase 2015). The population density in the Central and Northern Kurils was also very low between the 13th and the 15th centuries (e.g., Fitzhugh *et al.* 2002, Amano *et al.* 2007, Tezuka 2007, 2010, Phillips 2011). Although Epi-Jomon Culture (Osaka 2010) and Okhotsk Culture pottery (Baba 1934, 1936, 1937a, 1937b, 1937c, 1937d, 1938, 1939, 1940, Ushiro 1996) are distributed in this region¹⁾, human occupation was definitely intermittent rather than continuous. Therefore, Naiji pottery users suddenly appeared in the Northern Kurils and Kamchatka during a period between the 15th and 17th centuries. In addition, this pottery did not originate from the Kamchatka Peninsula, but from an area where Naiji iron pans and Naiji pottery were distributed. Hence, there is no doubt that the bearers of the Nalychevo Culture migrated from the south. They are likely to overlap considerably with the Kurile/Kuril Ainu; thus, Naiji pottery can be one effective indicator to trace their occupation area.

Advances in pottery chronology enabled us to examine temporal changes in the distribution area of Naiji pottery, which suggested that the Kurile occupied not only the Northern Kurils but also a wide area of Southern Kamchatka in the older stage (the mid-15th to the mid-17th centuries). In contrast, their territory rapidly shrank in the newer stage (the mid-17th to the 18th centuries) (Figure 3). Takase (2015) estimated that this reduction in their occupied area was caused by changes in subsistence (inner factor) and the Russian invasion into Kamchatka (external factor). According to examinations of Naiji pottery reported so far, types Ia and Ib have a wide distribution from the Lopatka Cape to the northern coast of the Shipniskij Peninsula as well as the Northern Kurils. In the newer stage, however, type II can be found in the Northern Kurils and Southern Kamchatka from the Lopatka Cape to Vestnik Bay.

This distribution trend of Naiji pottery had been studied by piecing together fragmentary information that did not include Dikova and Dikov collections. As mentioned above, however, they constitute the largest archaeological collections in Kamchatka. If we examine the pottery from these collections, we will expect to see types Ia and Ib Naiji pottery from a wide area of Southern Kamchatka, while type II (and type III, if it exists) will only be seen from the southern tip of the peninsula. In this study, we verify this prediction through the examination of Naiji pottery in the collections.

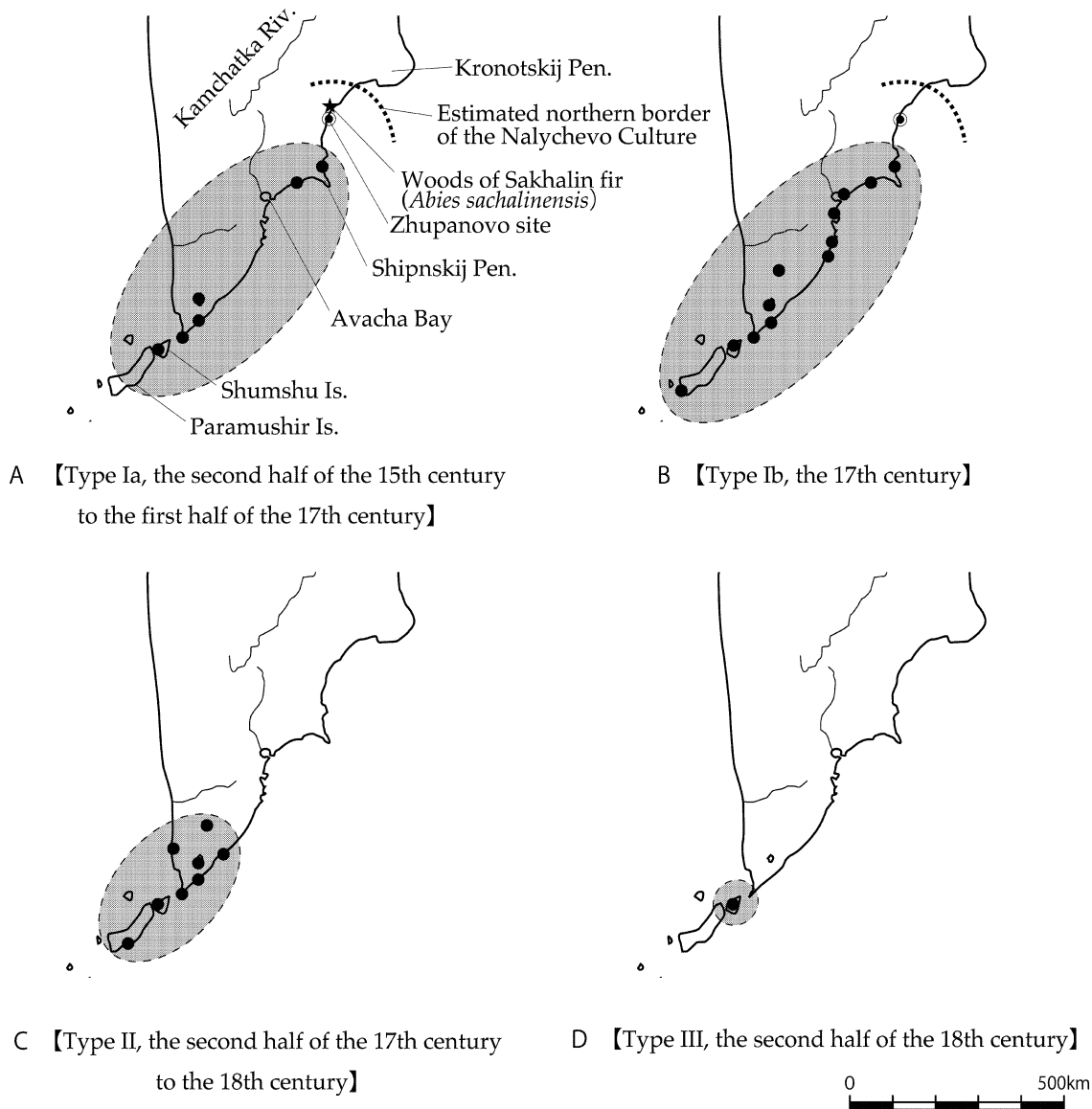


Figure 3 Temporal change in the distribution area of Naji pottery

3. Materials and methods

Artifacts from Southern Kamchatka collected by Dikova and Dikov are currently conserved in the North-Eastern Interdisciplinary Scientific Research Institute (NEISRI), Far East Branch Russian Academy of Sciences, Magadan, Russia. They were collected by large-scale intensive excavations of well-preserved archaeological sites in Southern and Central Kamchatka, mainly in 1960s and 1970s. Archaeological materials in these collections are stored in more than 550 wooden boxes; the standard size of a box is 48 x 39 x 7.5 cm. The majority of the specimens are stone tools and a considerable portion of lithic materials is from the Ushki sites (Dikov 1977,

1979). The remainder consists of pottery, bone/antler tools, animal bones, wooden and metal tools, grass objects, and charcoals for radiocarbon dating. We checked the materials in every box and picked out all of the pottery from Southern Kamchatka. The total number of boxes containing pottery was twenty-six.

These collections include clay vessels excavated from eight sites in Southern Kamchatka, although there are three fragments of which the site is unknown in them (Table 1)²⁾. The total number of potsherd is 1,687, showing that these are the largest pottery collections in Kamchatka. It should be noted that even A. K. Ponomarenko collection preserved in the Kamchatka Regional Unified Museum includes only 89 pottery fragments (Takase 2015), and the number of ceramic pieces in the collections of W. Jochelson (State Historical Museum, Moscow) and S. Bergman (The Museum of Far Eastern Antiquities, Stockholm) are also much lower than those of Dikova and Dikov collections.

First, we took pictures of all the boxes that contained pottery and counted the number of ceramic fragments by selecting materials with distinctive typological characteristics. After taking photographs of the selected ceramic fragments, we drew each specimen using an ink rubbing technique. Specimen labels were not removed before drawing; thus, some pottery labels are visible on a rubbed copy in some figures. We could see refitting traces (i.e., an adhesive agent and plaster) on some ceramic fragments, but only two clay vessels have been reconstructed to a whole shape and are displayed in the archaeological exhibition hall in NEISRI. On the basis of our pottery figures, we can examine the typological features in the next chapter.

4. Typological pottery remarks

(1) Yavino 2 site (Figure 4)

The Yavino sites are situated in the mouth of the Yavino River on the west coast of the Kamchatka Peninsula. This site cluster is located on a sand dune in the left bank of the river, and it was classified into nine sub-sites by Dikova (1983): Yavino 1 to 9 sites. Among them, pottery from four sites could be seen in the collection. Dikova (1983: 103) mentioned that Naiji pottery was found at the Yavino 3 and 4 sites, and she regarded it as “Neo-Ainu pottery” that was used by the Kurile of the *Aruchkin* settlement, as documented by Krashennikov (1755: 38).

Table 1 Number of ceramic fragments in Dikova and Dikov collections

Site	Number of ceramic fragments	Number of illustrated ceramic fragments	%
Lopatka I	177	11	6.2
Andrianovka (Mesto Vysadki)	1256	50	4.0
Siyushk 1 (& 2)	26	5	19.2
Yavino 2	1	1	100.0
Yavino 3	70	5	7.1
Yavino 4	91	18	19.8
Yavino 7	11	1	9.1
Kirpichnaja	52	3	5.8
Unknown	3	1	33.3
Total	1687	91	5.4

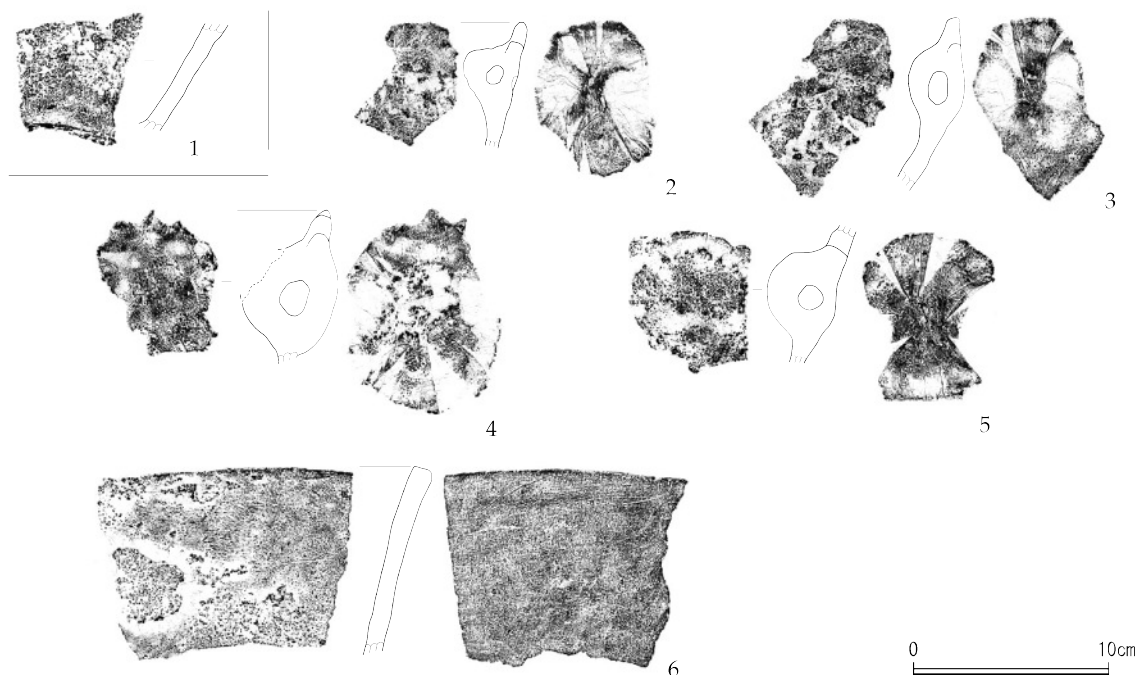


Figure 4 Pottery from the Yavino 2 (1) and 3 (2-6) sites

In the collection, there is a single fragment from the lower body of a clay vessel from the Yavino 2 site (Figure 4.1). The exterior surface is plain and it is covered by a charred substance, while no charred material has adhered to the inner surface, which is well smoothed. In Southern Kamchatka and the Northern Kurils, it is common to see thick charred material covering the exterior surface of pottery. Conversely, the charred substance is not usually adhered on the inner and bottom exterior surfaces of pottery from these regions.

(2) Yavino 3 site (Figure 4)

There are 70 pottery fragments from the Yavino 3 site of which five are illustrated in this study (Figure 4.2-6). All rim fragments with an inner lug have a small projection on the rim (Figure 4.2-5). It is notable that a fragment shown in Figure 4.2 has a small inner lug (4.0 cm in length) compared with that of other specimens. In addition, a large embossment-like elevation on the exterior surface can be observed opposite the inner lug among the latter materials. There are also differences in the cross sections of the inner lugs; the smaller one has a triangular-like cross section (Figure 4.2), while the other specimens have inner lugs with a circular-shaped cross section (Figure 4.3-5). The remaining rim fragment has a plain surface; there is no projection on the rim and no wide and shallow groove on the inner surface (Figure 4.6).

(3) Yavino 4 site (Figure 5)

Eighteen fragments of 91 ceramic pieces from the Yavino 4 site are shown in Figure 5. The rim fragments are roughly divided into two groups. The first group contains potsherds with a shallow and wide groove on the inner rim, an elevated band along the exterior rim, a plain surface

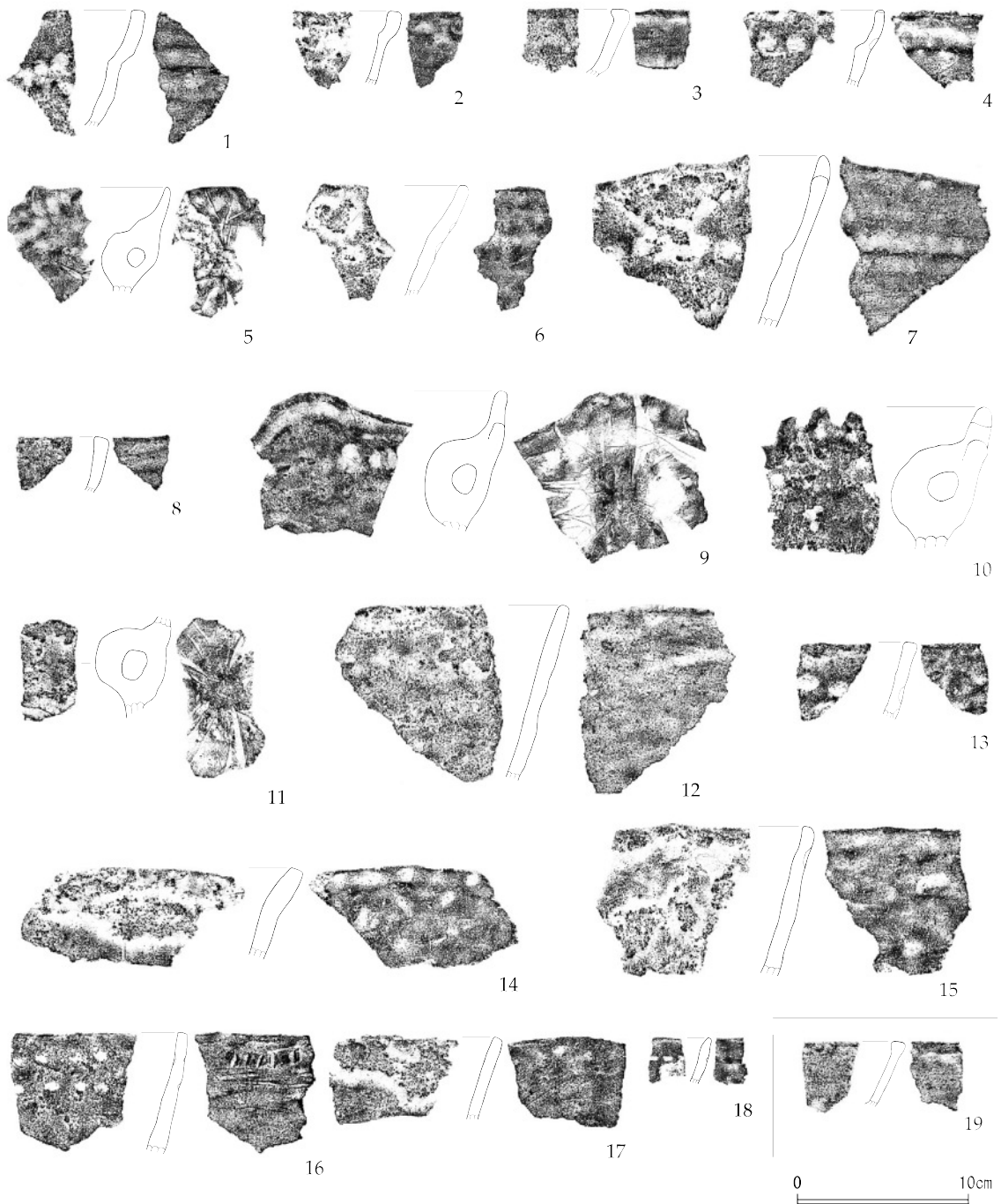


Figure 5 Pottery from the Yavino 4 (1-18) and 7 (19) sites

without ornament, a relatively small inner lug (less than 5.0 cm in length), and an elaborate smoothing of both surfaces (Figure 5.1-5). The second group contains fragments with a projection on the rim, a large inner lug (more than 5.0 cm in length), incised ornaments, and a coarser smoothing of both surfaces (Figure 5.9-17). Some individual fragments have both characteristics

from these two groups (Figure 5.6-8). A rectangular incision is an uncommon ornament in Southern Kamchatka and the Northern Kurils pottery (Figure 5.18), but they are likely to be a variant of fingernail-like impression ornaments frequently used in this region, as shown in Figure 5.16.

(4) Yavino 7 site (Figure 5)

Only one rim fragment from 11 pieces from the Yavino 7 site is pictured in Figure 5.19. This piece of pottery is elaborately made; the thickness of the wall is relatively thin, and we can see a fine-featured wide and shallow groove on the inner surface. Note that a tip of the rim projects inward and a cross section demonstrates that the lower tip also curves slightly inward.

(5) Andrianovka site (Figures 6-10)

In Dikova collection, a considerable number of artifacts are marked as “MV,” which means the *Mesto Vysadki* site, the former name of the Andrianovka site used during 1970s (Dikova 1983: 192). The number of pottery fragments from this site is 1,256. This is the largest number of all sites in this collection. Fifty fragments are illustrated in Figures 6-10. Potsherds shown in Figures 6 and 7 have a shallow and wide groove in the inner surface of the rim. In particular, six fragments have been made with great care, and they have a very thin wall and small inner lug (Figure 6.1-6). In contrast, other fragments have a relatively thick wall, a projection on the rim, and a larger lug, even though a wide and shallow groove on the inner rim can be seen (Figures 6.7-14 and 7.1-7). The remaining specimens have no wide and shallow groove on the inner rim. They are characterized by a thick wall, a relatively large inner lug, a projection on the rim, and a large embossment-like elevation on the exterior surface (Figures 7.8-12 and all fragments shown in Figures 8-10). They are the dominant pottery group from this site.

(6) Lopatka I site (Figures 11 and 12)

This site is situated in the very tip of the Lopatka Cape. We found 177 fragments of pottery, of which 11 pieces have been illustrated. Note that some pieces have an extremely thin wall, an elaborately made groove on the inner rim, and a small inner lug (Figure 11.1-8). Furthermore, a characteristic pottery with a round-bottom (Figure 11.9) and a rare pottery fragment that has an inner lug attached to the top of the rim was also seen (Figure 11.10). Finally, a potsherd illustrated in Figure 12.1 is noteworthy; it is a shallow clay vessel of which the shape in plan view is probably square or rectangular. In addition, the inner lug is very wide and is attached horizontally, although the hole for passing a cord through is comparatively small. It has a very thick wall and the exterior surface is covered by charred material as other fragments. It is also notable that gravel, and not sand, are tempered into the clay.

(7) Siyushk sites (Siyushk 1 and 2 sites) (Figure 12)

There were 26 pottery fragments from the Siyushk sites of the southern coast of Kuril Lake. This site cluster consisted of four sites (Siyushk 1 to 4) (Dikova 1983, Takase 2013a). Clay vessels from these sites were stored in a single wooden box, and the site name was marked on some artifacts so as to recognize their provenance. However, there are also some artifacts without



Figure 6 Pottery from the Andrianovka site [1]

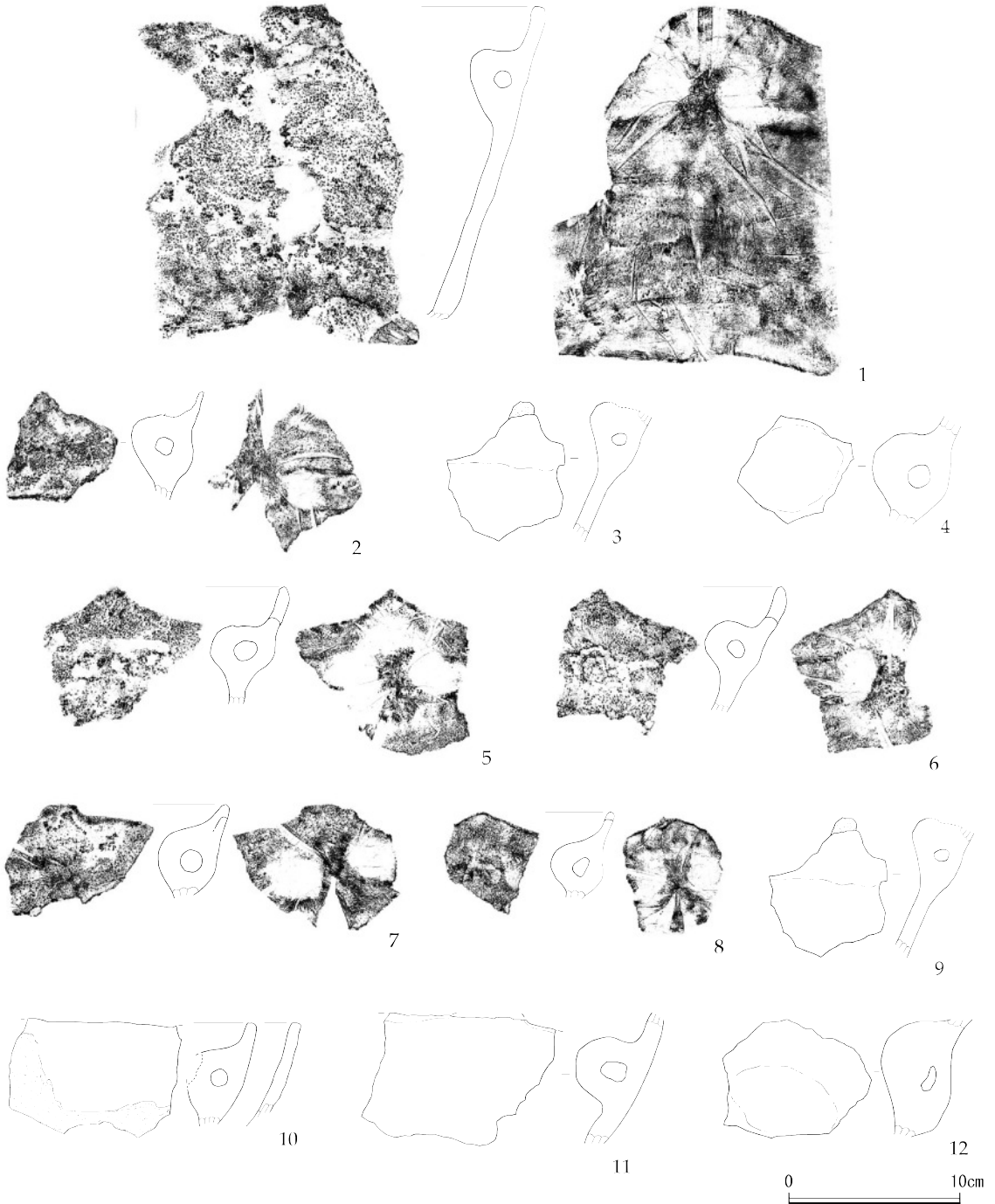


Figure 7 Pottery from the Andrianovka site [2]

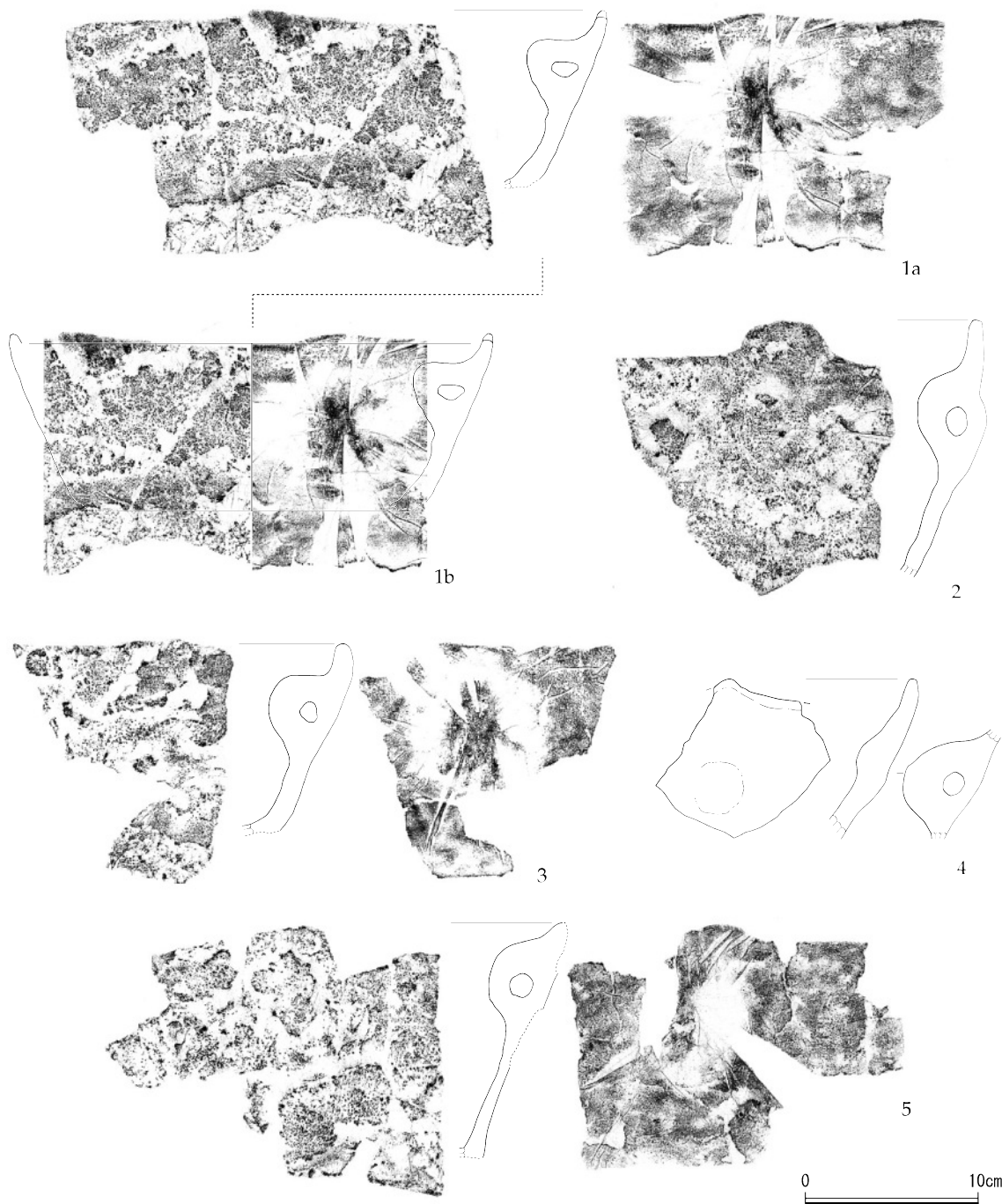


Figure 8 Pottery from the Andrianovka site [3]

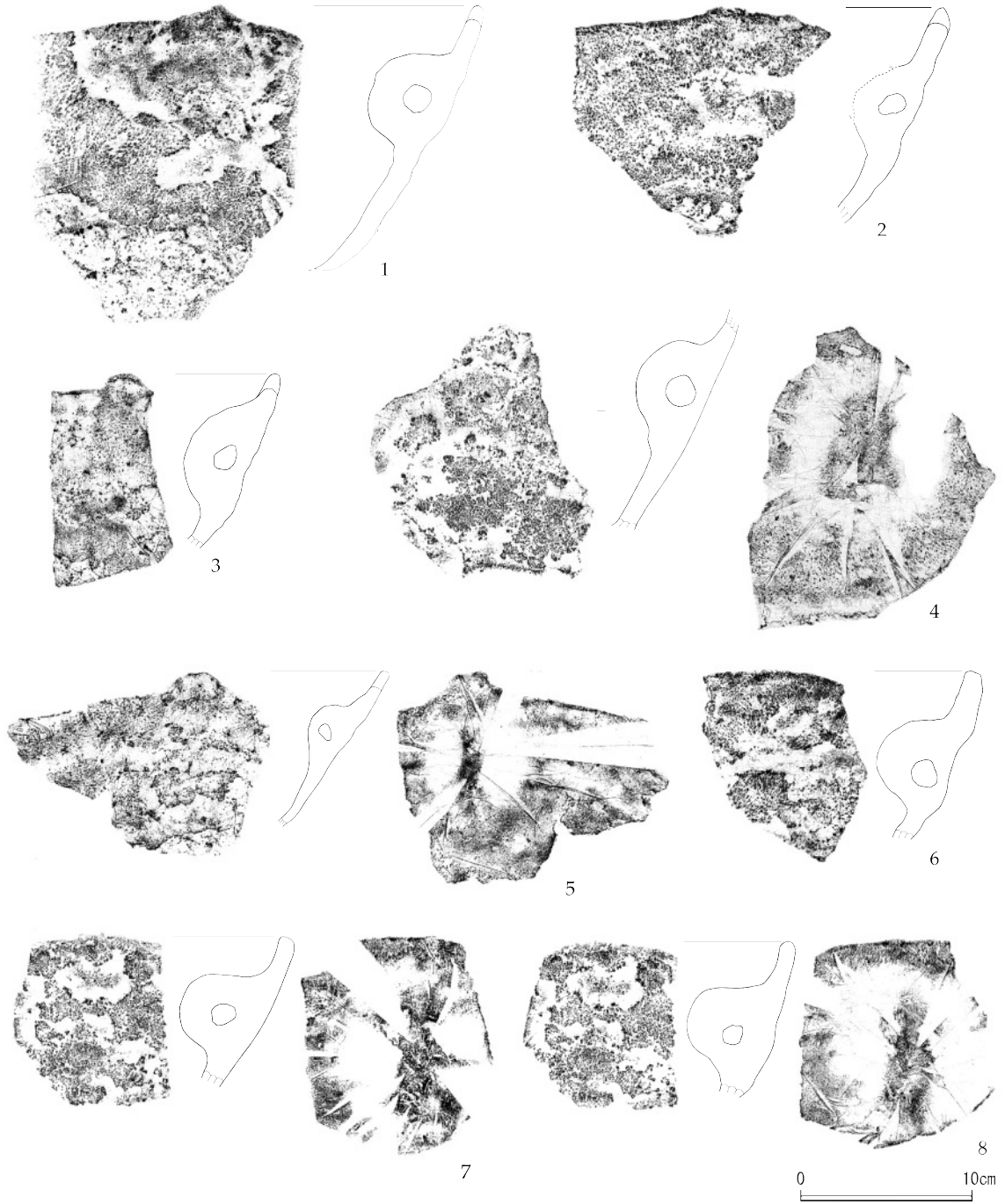


Figure 9 Pottery from the Andrianovka site [4]

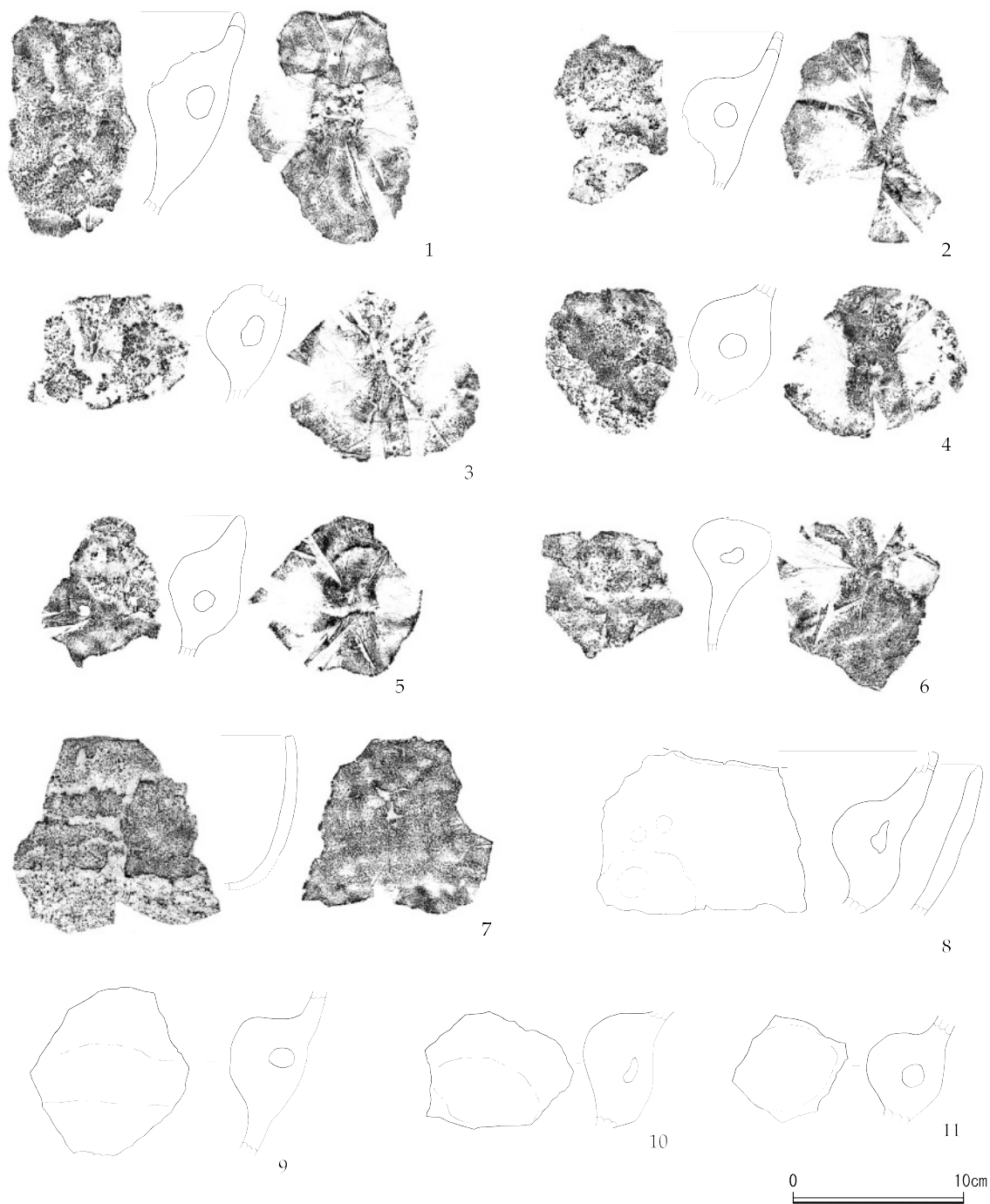


Figure 10 Pottery from the Andrianovka site [5]

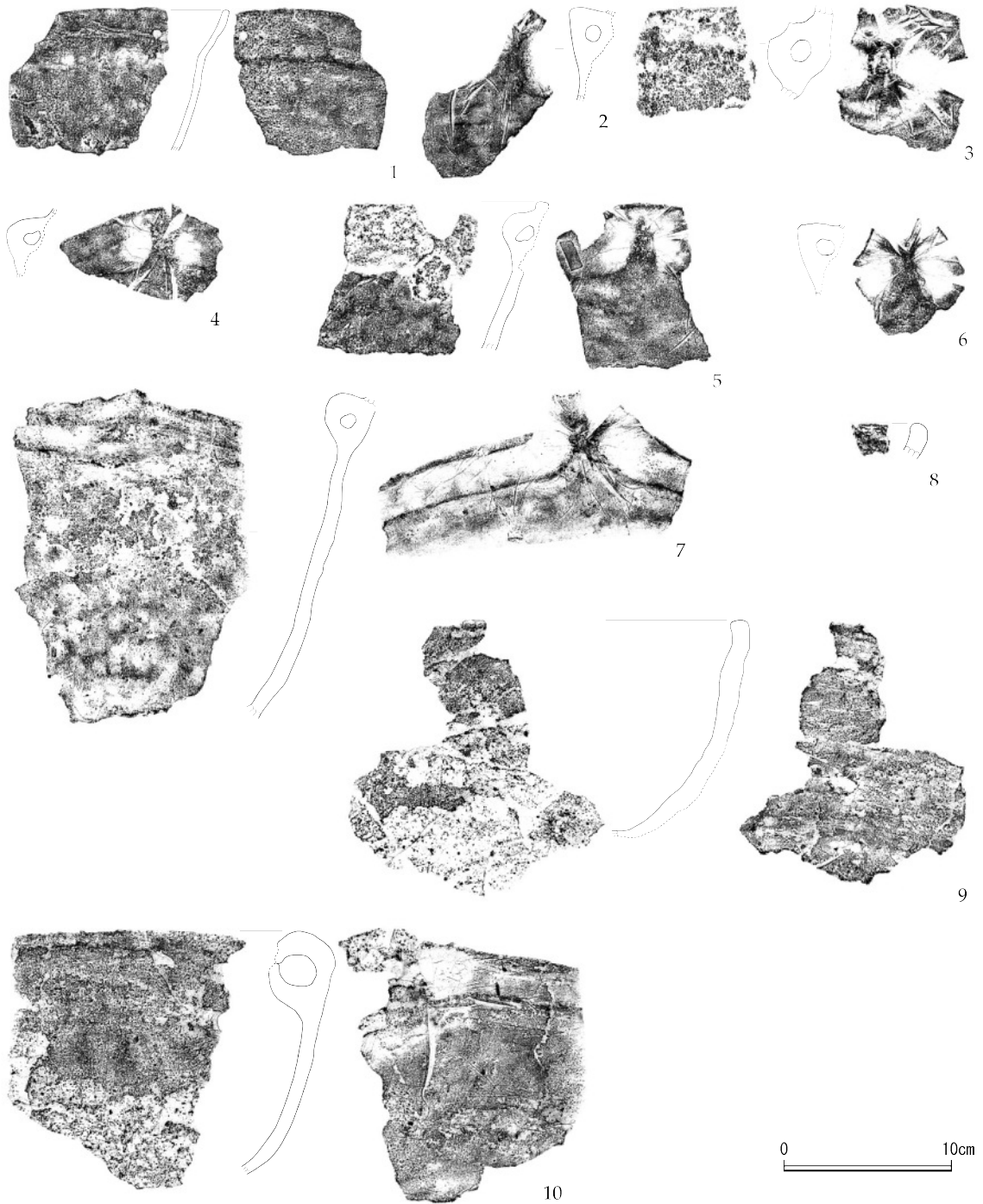


Figure 11 Pottery from the Lopatka I site [1]

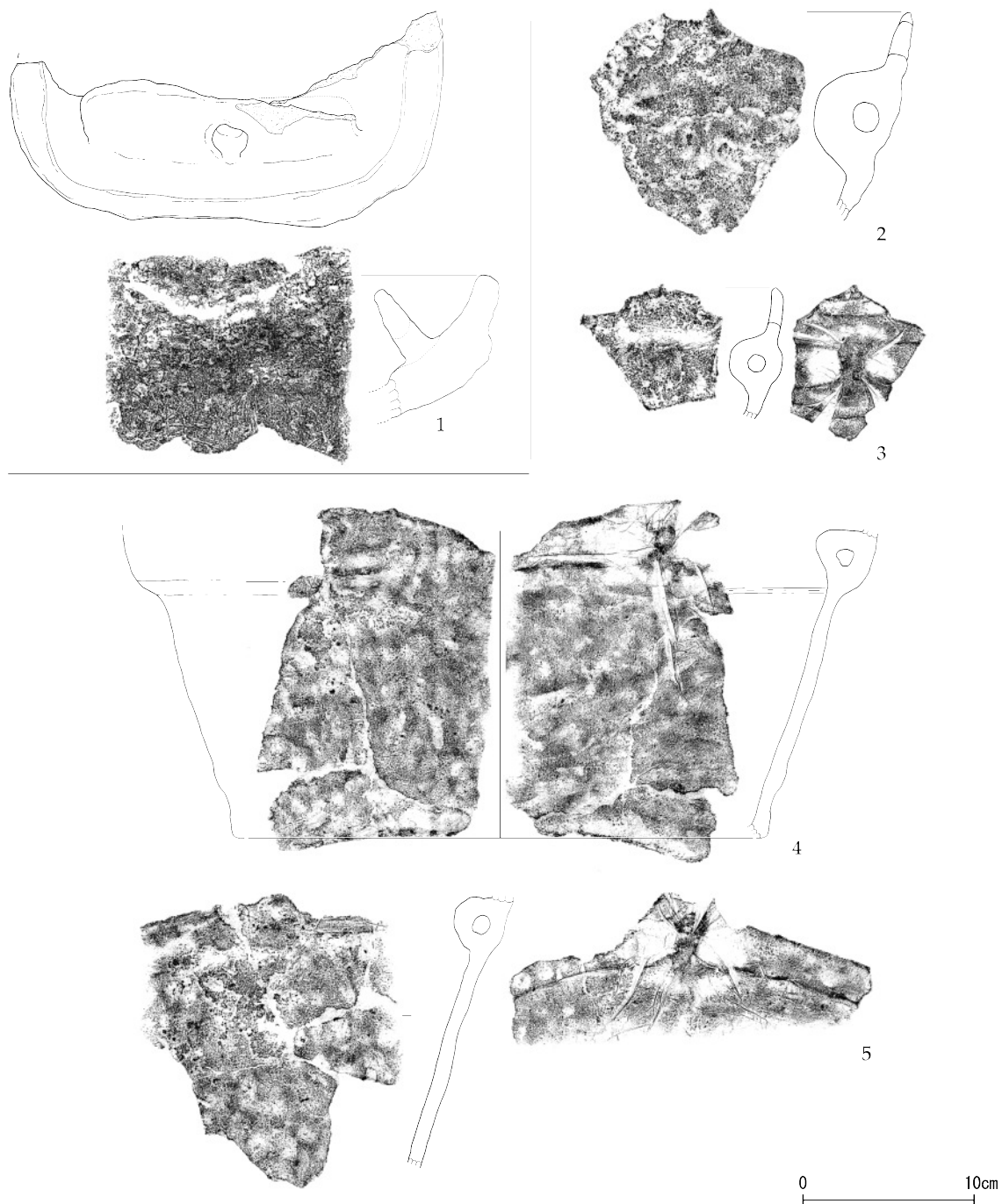


Figure 12 Pottery from the Lopatka I site [2] (1) and Siyushk1 1 site (2-5)

markings and some artifacts are marked solely as “Siyushk,” making it is impossible to identify the precise site from which the fragment came. Since marked site names include the Siyushk 1 and 2 sites and Siyushk 3 and 4 sites cannot be seen, all artifacts in this box were likely to be excavated at the Siyushk 1 or 2 sites. In this study, five fragments from the Siyushk 1 site are shown in Figure 12. A fragment with a thick wall and a large inner lug can be seen, and this specimen also has a projection on the rim at the top of an inner lug (Figure 12.2). Three pieces have a relatively small inner lug and a distinct wide and shallow groove in the inner rim (Figure 12.3-5). Although we could not refit them, they were likely fragments of a ceramic pan.

(8) Kirpichnaja site (Figure 13)

This site is situated in the southern part of Petropavlovsk-Kamchatskij. Dikov (1977: 116-117) recorded that he found stone tools and Naiji pottery fragments from a small-scale excavation. Three of the 52 ceramic pieces from this site are illustrated in Figure 13. A fragment illustrated in Figure 52.2 in Dikov (1979) could not be seen. We can recognize a distinct wide and shallow groove on the inner side of all fragments (Figure 13.1-3). It is also notable that the size of an inner lug is relatively small, and its cross section exhibits a triangular shape (Figure 13.1). As mentioned later, it is relevant that there were no fragments with a large inner lug or a projection on the rim from this site.

(9) Site unknown (Figure 13)

There is a pottery fragment with unknown provenance, although its typological characteristics are very clear (Figure 13.4). This fragment was likely in water for a long time since the surface is heavily worn. It has a large inner lug and a rectangular projection on the rim, while the body wall is relatively thin. A large embossment on the opposite side of the inner lug can also be seen.

5. Discussion

(1) Chronological estimation of the specimens

First, the existence of pottery, except Naiji pottery, was examined. A notable artifact which addresses this problem is a rim fragment with an incised ornament from the Yavino 4 site (Figure 5.18). Although the exterior surface of this fragment is not covered by charred material, there are no large differences in the clay and building techniques relative to other Naiji pottery. A sharply incised ornament is not necessarily similar to commonly punctured ornaments of Naiji pottery that are made with a nail or a thick stick. However, as shown in Figure 5.16, there is no doubt that Naiji pottery also has horizontally long and very sharp incisions. In addition, pottery of the Okhotsk Culture can be identified by observing the elaborate surface smoothing. At present, the northern border of Okhotsk Culture pottery is at Atlasov (Araido) and Shumshu Islands (Baba 1934, 1939, Ushiro 1996), and they can be easily distinguished from Naiji pottery by observing the vessel shape, surface smoothing technique, and ornaments. However, there is no critical evidence that confirms that this fragment is a piece of Okhotsk Culture pottery, indicating that this artifact is also a variation of Naiji pottery. Although we examined numerous potsherds from Southern

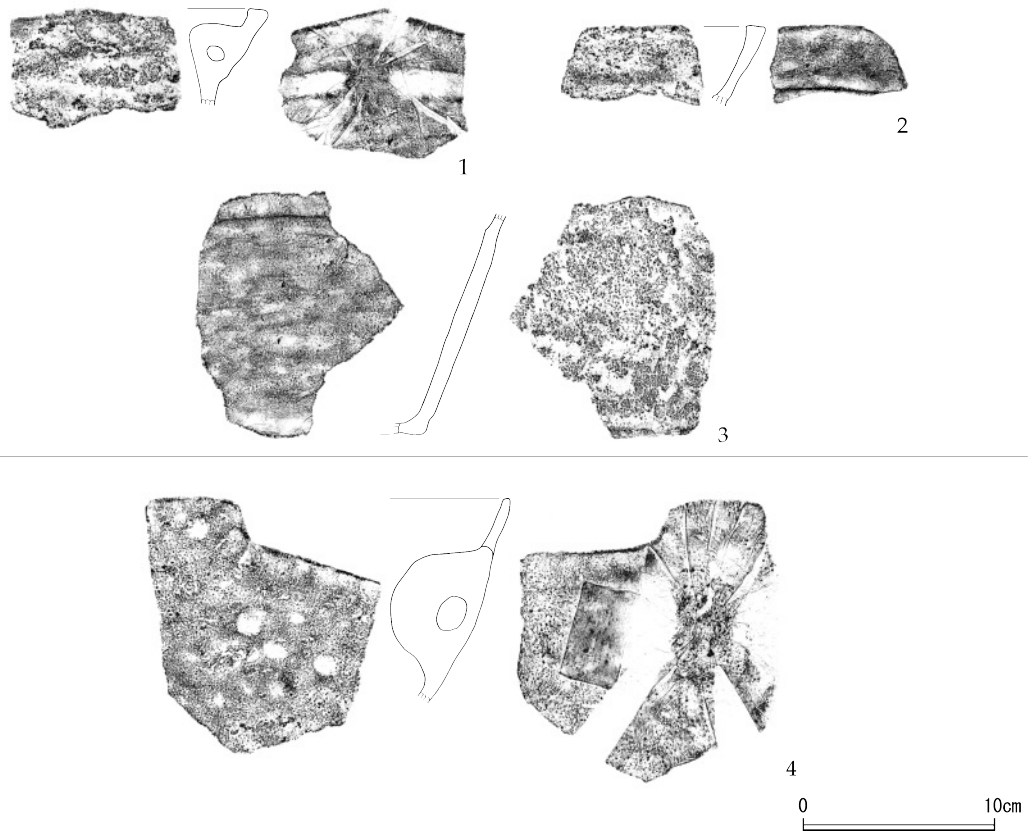


Figure 13 Pottery from the Kirpichnaja site (1-3) and unknown site (4)

Kamchatka in this study, it is safe to say that there were no distinct fragments of Okhotsk Culture pottery. Thus, only Naiji pottery is included in the collections, demonstrating that this pottery was the first and last pottery in Southern Kamchatka³⁾.

On the basis of a Naiji pottery chronological scheme (Takase 2013a), potsherds in this study are classified in Figures 14 and 15. The number of type Ia specimens was relatively small in the Kamchatka Peninsula, but instances of this type increased remarkably by examination of Dikova collection (Figure 14.1-12). Moreover, an abundance of materials enabled us to recognize type Ia sub-types. As mentioned above, Naiji pottery of this type generally has smaller inner lugs and a relatively thin wall. Among them, we found a group of potsherds with an extremely slender inner lug with a triangular cross section and a thin wall (Figure 14.1-5). From the typological viewpoint, potsherds should be assigned to the oldest phase of Naiji pottery since they preserve morphological iron pan features the most. In this study, we date this kind of pottery to the initial stage of Naiji pottery in Kamchatka and the Northern Kurils and classify it as “type Ia1.” Although there is no inner lug and no rim fragments, a very thin wall and an elaborate shallow and wide groove indicate that some other fragments are also likely to be type Ia1 (Figure 14.9-12).

A similar ceramic fragment from Shumshu Island has been already reported (Kumaki *et al.* 2010). Although there is no lug on the specimen shown in Figure 16, it has an extremely thin wall, distinctive wide and shallow grooves in the inner rim, and an uneven exterior rim surface.

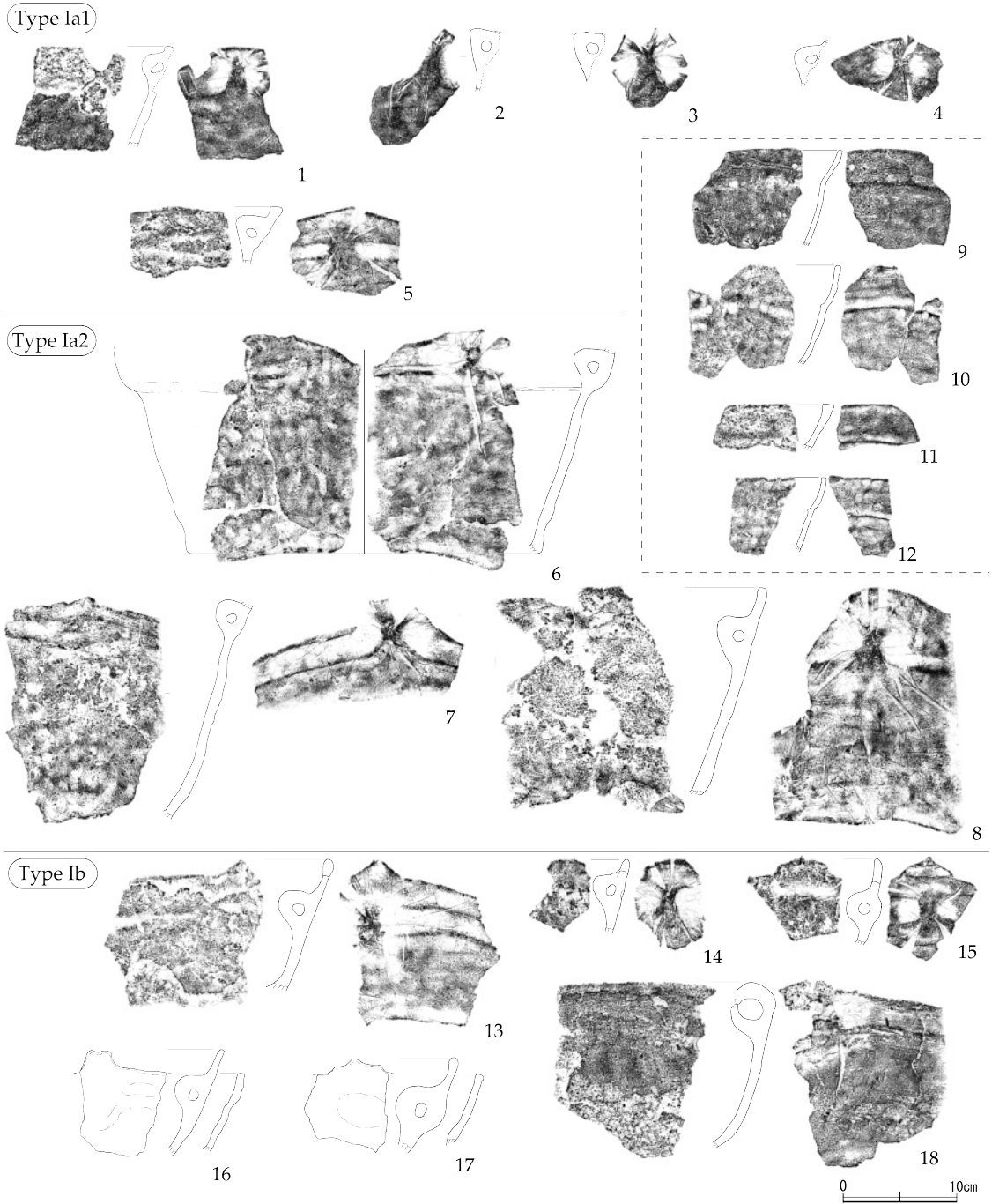


Figure 14 Ceramic fragments of types Ia1, Ia2, and Ib

(1-4, 9, 18: Lopatka I, 5, 11: Kirpichnaja, 6, 7, 15: Siyushk 1, 8, 10, 12, 13, 16, 17: Andrianovka, 14: Yavino 3)

Type II



Figure 15 Ceramic fragments of type II

(1-4, 12: Andrianovka; 5: site unknown; 6, 8: Siyushk; 7: Yavino 3; 11, 13: Lopatka I; 9, 10: Yavino 4)

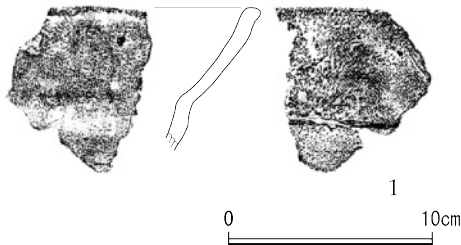


Figure 16 A ceramic fragment from the Northern Kurils in Ryuzo Torii collection housed in the University Museum, the University of Tokyo

These characteristics enabled us to recognize two Ia sub-types, not only in Kamchatka but also in the Northern Kurils. Even though type Ia2 pottery has smaller inner lugs and wide and shallow grooves on the inner rim, an extremely thin wall and inner-lugs with a triangular-like cross section are absent (Figure 14.6-8). These changes in Naiji pottery indicate that the oldest potter in this region was well trained. As mentioned below, this fact is very important when examining the origin of the Kuril Ainu. Types Ia1 and Ia2 should date from the mid-15th century to the mid-17th century. Although there is no radiocarbon date for each type, type Ia1 is likely to be assigned to the older stage of that period.

Numerous ceramic pieces that could be classified as type II were also found in the collections. They have larger inner lugs, ornaments, projections on the rim, and a thick wall, while there is no wide and shallow groove on the inner rim (Figure 15). Regarding this type, we take particular note of some specimens because there are some newly discovered variations of Naiji pottery in Kamchatka and the Northern Kurils. Pottery illustrated in Figure 15.13 cannot be compared to any specimens previously reported. The thick wall and large inner lug clearly indicate that it is a variation of type II. However, there are no instances with a rectangular or square-shaped plan view and plate-like inner lugs attached horizontally to the inner rim. In addition, we should pay attention to the fact that this pottery must be of a low height. Torii (1903, 1919) reported that the Kuril Ainu produced two kind of pottery: a clay pan (*toi shu* in Ainu) and a clay dish (*toi sara*). However, clay dishes have not been found at any archaeological sites; possibly this unique pottery is the first.

Clay vessels with a round bottom are also an unknown group of Naiji pottery in this region (Figure 15.11 and 12). Although there are no specimens with an inner lug, clay and temper, adhered charred material, a relatively thick wall, and the building technique of the rim suggest that they are also type II Naiji pottery. It is still unclear if they have real round bottom like Old Koryak Culture pottery; such pottery with a curved wall should be categorized as an independent group in type II. Therefore, they are dated to a period from the latter half of the 17th century to the 18th century. According to pottery chronology in Northern Kamchatka (Takase 2014), various types of pottery with a round bottom remained until the 17th century. Therefore, there is the possibility that they affected Naiji pottery in the 17th century.

Type Ib fragments, an intermediate type between types Ia and II, were also found in the Dikova collection (Figure 14.13-17). In addition, it is noteworthy that there is a fragment with an inner lug that is attached to the upper part of the inner rim (Figure 14.18). Naiji pottery in

this region usually has a space between the top of inner lug and the rim, but the inner lug of this specimen is completely unified with the rim. Since a relatively large inner lug and a distinct wide and shallow groove can be seen on the inner rim, this specimen is temporarily classified as type Ib. Moreover, the curved lower body is also notable. We found a similar example of Naiji pottery from the Fukakusa site, Central Sakhalin, in Osamu Baba collection conserved in the Hakodate City Museum, Hokkaido (Takase and Suzuki 2013). This might be an instance showing cultural relationships with Sakhalin in the future studies.

(2) Hypothesis verification

Table 2 shows the pottery types for each site in the collections and demonstrates that types Ia1 and Ia2 have a broader distribution than type II. In particular, it is important that there were no type II pottery fragments at the Kirpichnaja site, while types Ia1 and Ia2 specimens were solely found there. Thus, results from this analysis support the hypothesis that type Ia can be seen over a wider area than type II.

In previous studies, the distribution of types Ia and Ib pottery around Avacha Bay has been obscure. Therefore, fragments of a clay vessel from the Kirpichnaja site in Dikov collection are suggestive. They have an elaborately made shallow and wide groove on the inner rim, and no ornament or projection on the rim can be seen (Figure 13.1-3), suggesting that they should be classified as type Ia. In particular, a potsherd with a thin wall and a relatively small inner lug with a triangular cross section indicates that it can be regarded as type Ia1 (Figure 13.1). These facts demonstrate that Naiji pottery users occupied the coast of Avacha Bay from the mid-15th century to the mid-17th century, whereas no type II Naiji pottery was found there. In contrast, all types of Naiji pottery are distributed around the southern tip of the Kamchatka Peninsula.

The temporal change in the Kurile/Kuril Ainu occupation area based on Naiji pottery leads to some significant and challenging problems. First, where is the homeland of the Kurile, and why did they come to the Northern Kurils and Southern Kamchatka? A linguistic study points out that there are common words in the Kuril dialect of Ainu that are also in the Hokkaido and Sakhalin dialects (Nakagawa 1996). Material culture studies have also revealed the similarity between the Northern Kurils and Southern Sakhalin and proposed a hypothesis that the Kuril Ainu might have originated in Sakhalin (Kosugi 1996, 1997). From an archaeological viewpoint, this is a possible hypothesis (Takase 2013b, 2015). In Hokkaido and the Southern Kurils, pottery and semi-subterranean residences, principal elements of the Nalychevo Culture, were no

Table 2 Pottery types found in each site

Site	Type Ia1	Type Ia2	Type Ib	Type II
Lopatka I	+	(+)	+	+
Andrianovka	(+)	+	+	+
Siyushk 1 (& 2)	(+)	+	+	+
Yavino 2	(+)	(+)	(+)	(+)
Yavino 3		(+)	+	+
Yavino 4	(+)	+	+	+
Yavino 7	(+)	(+)		
Kirpichnaja	+	(+)		
Unknown				+

longer used between the 15th century and the 17th century. In contrast, pottery and pit dwellings were likely still in use in Sakhalin at that time. In the Northern Kurils and Kamchatka, well-trained potters produced the oldest Naiji pottery, as mentioned above; their origin is estimated to be an area where pottery was used in the 15th and 17th centuries. Thus, Sakhalin is a stronger candidate as the potters' homeland of the Northern Kurils and Kamchatka than Hokkaido and the Southern Kurils, although there is a significant distance between the two areas. As stated above, some characteristics of Naiji pottery from the Northern Kurils and Kamchatka are similar to those from Sakhalin. The "Sakhalin origin hypothesis" should be verified through the comparison of archaeological records dating from the 15th century to the 17th century among Sakhalin, Hokkaido, the Kuril Islands, and Kamchatka.

Second, there might be a great difference in the economy of the Kurile/Kuril Ainu between the older and the newer stages. In the older stage, the Kurile occupied not only the Northern Kurils, but also a wide area of Southern Kamchatka. They could easily utilize resources in Kamchatka such as various terrestrial animals, salmon, obsidian, and large trees. However, in the newer stage, the Kuril Ainu occupied only in the Northern Kurils where the above-mentioned resources were absent or very scarce, and their economy was thought to shift from one based on self-sufficiency to one based on far trading. According to an ethnography recorded at the end of the 19th century, the Kuril Ainu adapted to the environment of the Northern Kurils by roaming over various islands hunting sea mammals (Torii 1919). This amazing way of life is estimated to have occurred in the beginning of the 18th century when they stopped using a wide area of Kamchatka. Such a hypothesis is also the next target to be examined in the future studies using methods of zooarchaeology, molecular phylogenetic biology, physico-chemical analysis of obsidian, and lithic use-wear analysis.

6. Conclusions

Through examinations of pottery in Dikova and Dikov collections, we drew the following conclusions:

- 1) There is no Epi-Jomon or Okhotsk Culture pottery in Southern Kamchatka.
- 2) Type Ia Naiji pottery in the Northern Kurils and Kamchatka can be divided into two sub-types: types Ia1 and Ia2. Type Ia1 is characterized by a high similarity with iron pans based on their morphology and an extremely thin wall.
- 3) There is a previously unknown Naiji pottery shape category from the Lopatka I site. The plan view might be square or rectangular, and the depth is relatively shallow. There is the possibility that this corresponds to a *toi sara* (clay dish) recorded by Torii (1919). Characteristics of pottery-making techniques suggest that this pottery dates to the type II period (from the mid-17th to the 18th centuries).
- 4) A hypothesis on temporal change based on the distribution area of Naiji pottery was supported by ceramic fragments in Dikova and Dikov collections.
- 5) These results generated hypotheses on the origin of the Kurile/Kuril Ainu and their associated economic changes. To examine these issues, future studies should focus not only on Hokkaido and the Southern Kurils, but also on Sakhalin Island.

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Notes

- 1) Hayashi (1953: 190) reported that he found a cord-marked ceramic fragment on Shumshu Island. However, this material has not yet been examined by other archaeologists. Thus, the current northern border of Epi-Jomon artifacts is Shiashkotan Island, as reported by Osaka (2010).
- 2) In a preliminary investigation of the collections at NEISRI in 2011, we found artifacts from the Nalychevo and the Kuril Lake sites. However, we could not find them in 2014. All archaeological collections in this institute were moved between two investigations, and this might have caused this confusion; thus, a further search is needed in the future.
- 3) Okhotsk Culture pottery fragments from Kamchatka reported by Watson (1965) might be a mistake of provenance marking (Yamaura 1989, Takase 2013a). According to Dr. Yamaura, these are materials purchased by the British Museum, although no specialists of the Okhotsk Culture have yet investigated. We are grateful to Dr. Yamaura for providing this information.

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