

Cultural contact and trade between the Ainu and Japanese prior to 1667: Provenance of *kiseru* in an Ainu burial at the Iruekashi site, Hokkaido

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ABSTRACT

Focusing on the production and circulation of kiseru (Japanese smoking devices), the aim of this paper is to discuss cultural contact and trade between the Ainu and Japanese in the 17th century. The archaeological discovery of several examples of kiseru, at the Iruekashi site including an Ainu burial that predates 1667, implies that these artefacts were diffused to Ainu by as early as the first half of the 17th century. Furthermore, results of a comparative chronological study on the morphological characteristics of artefacts suggest that they most likely originated from Kyoto. Ethnographic and historical sources have elucidated a long history of the production of such handicrafts in Kyoto, where metal materials were manufactured at specialized workshops concentrated in a specific area. Data from historical documents and archaeological excavations have also revealed how processes of technological production have changed over time. Finally, the results of this study indicate that a marine trade route connecting western Japan and Hokkaido along the coast of the Japan Sea was already in use by the middle of the 17th Century, before the establishment of the Kitamaebune trade route to the North.

KEYWORDS: *kiseru*, smoking device, Ainu, Iruekashi site, Kyoto handicrafts, 1667

Introduction

All over the world, the presence of devices for smoking including *kiseru*, European and clay pipes are significant in an archaeological context in order to understand cultural contact, trade, and the diffusion of cultural commodities. The presence of these objects evidences the social aspects of a culture, as smoking indicates the sharing of a common taste, and reveals local differences through characteristic features and handicraft technologies.

Kiseru are Japanese smoking devices used with Japanese tobacco called *kizami* that is very fine and shredded. People began to use these smoking devices commonly in the period between 1596 and 1615 when the domestic production of tobacco started in Japan, although the practice of smoking is known to have started much earlier. The available

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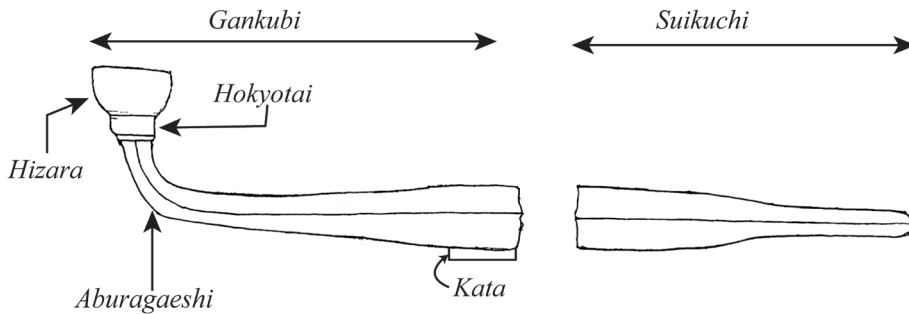


Figure 1. Diagram showing the details of different kiseru parts

evidence suggests that while the Portuguese introduced tobacco to Japan, as well as guns, subsequent to their arrival in 1543, although the precise date remains unclear. *Kiseru* smoking devices have metal at each end (*gankubi* and *suikuchi*) connected with a bamboo shaft. As shown in Figure 1, a *kiseru* made up of three parts, (1) *gankubi* (a neck-like goose) which, includes *hizara* (bowl), *aburagaeshi* (curved neck), *kata* (shoulder), and *hokyotai* (reinforcement band), (2) *suikuchi* (the mouth piece), and (3) a shaft between *gankubi* and *suikuchi*.

Examples of *Kiseru* have been found at archaeological sites across Japan, including both burials and dwelling places. Usually these objects are found separated into distinct pieces, with the exception of burials. This is because *gankubi* and *suikuchi* are made of metal, connected together by an organic material like bamboo, for this reason, each component inevitably separates when they are excavated from archaeological sites. This is inevitable in the case of archaeological artefacts. This paper is focussed on examples of *gankubi* only but mentions them *kiseru*.

In this article I discuss examples of *kiseru* which were excavated from the Iruekashi site (Biratori-cho Iseki Chosakai 1989), in Hokkaido (Figure 2), an Ainu habitation site that is dated to before 1667 and which, includes a burial. The significance of these archaeological artefacts is that, because they are Japanese-made smoking devices, they demonstrate that smoking was practiced among the Ainu, and that these people somehow obtained *kiseru* from the Japanese. The excavated Iruekashi site has been dated by correlation with a 1667 volcanic ash fall enabling the possibility to understand aspects of the Ainu culture prior to this time, during the first half of the 17th century. Tephrochronology in Hokkaido is a vital method in order to establish material culture chronological sequences during the historical period. This is because identified volcanic ash falls can be correlated with Japanese historical documents, revealing exact dates. This Iruekashi site is particularly significant because this period predates the influence of the *Basho-Ukeoi* system, (trading posts established by the Matsumae domain and controlled by their merchants). Thus, this

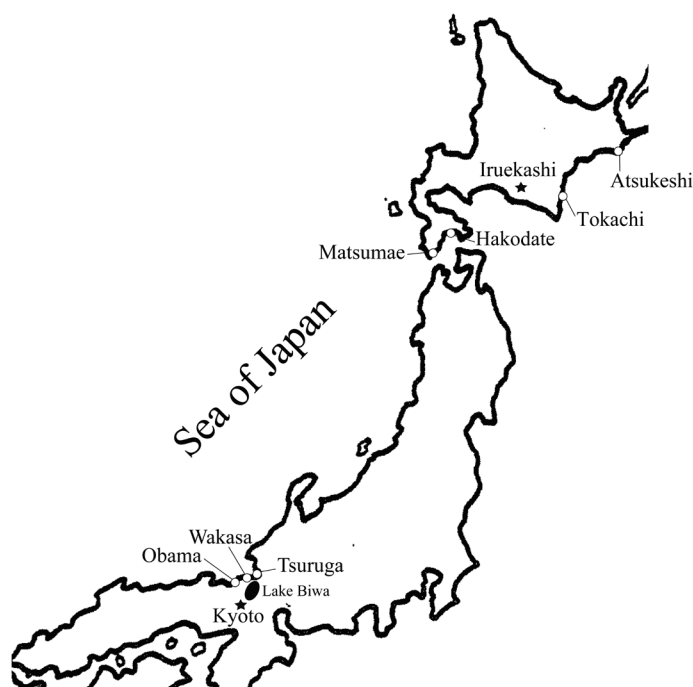


Figure 2. Map of Japan to show locations discussed in the text

time period was before the Ainu culture was influenced by commercial capitalism.

It is important to determine how *kiseru* reached Hokkaido and where they came from, as this will contribute to an understanding of cultural contacts and trade at the time.

According to ethnological evidences, smoking was common among both Ainu men and women. The Ainu had particular smoking customs and they used original Ainu smoking device made of wood called *nikiseri* as well as wooden-tobacco cases decorated with characteristic traditional carvings (Utagawa 1991).

Examples of *kiseru* from Hokkaido are examined in this study based on the discussion of 1) chronological sequences of material typology, 2) technological aspects, and 3) ethnographic and historical documents. The aim of this paper is to discuss evidence for interactions and trade between the Ainu people and the Japanese.

Archaeological evidence of *kiseru* in Hokkaido

To date, nine examples of *gankubi* and eight examples of *suikuchi* from *kiseru* have been excavated from the Iruekashi site, not just from the burial but also from the outside and insides of dwellings. In total, 20 Ainu dwellings have been excavated that

contain examples of ceramic fragments, including bowls, a plate, and mortars, that were produced in potteries at Hizen, Karatsu, and Bizen. Archaeological evidence for metal products at this site also includes a large range of artefacts, including Ainu daggers, knives, fishing hooks, harpoons, nails, iron arrowheads, drills, sickles, hoes, axes, points, iron pots, swords, and scraps of iron, comprising miscellaneous plates, bars, rings, and chains. In addition, a hearth for forging iron has also excavated associated with tuyeres, hammer scales and slag, which indicates an existence of refining process of iron technology. This discovery implies that the Ainu practiced iron metal-working prior to 1667. It is noteworthy that prior to the excavation of this site in 1988, there was no archaeological evidence for whether or not iron technology existed in the Ainu culture, and it was thought that the Ainu did not practice iron-working (Fukasawa 1998).

In particular, the burial at this site (Figure 3) contains *kiseru* (both *gankubi* and *suikuchi*) that were clearly individual possessions, associated with other burial goods including an iron pot, a hoe, a sickle, knives, and lacquer-ware. The position and structure of grave-post hole as well as burial goods that include an iron pot indicate that

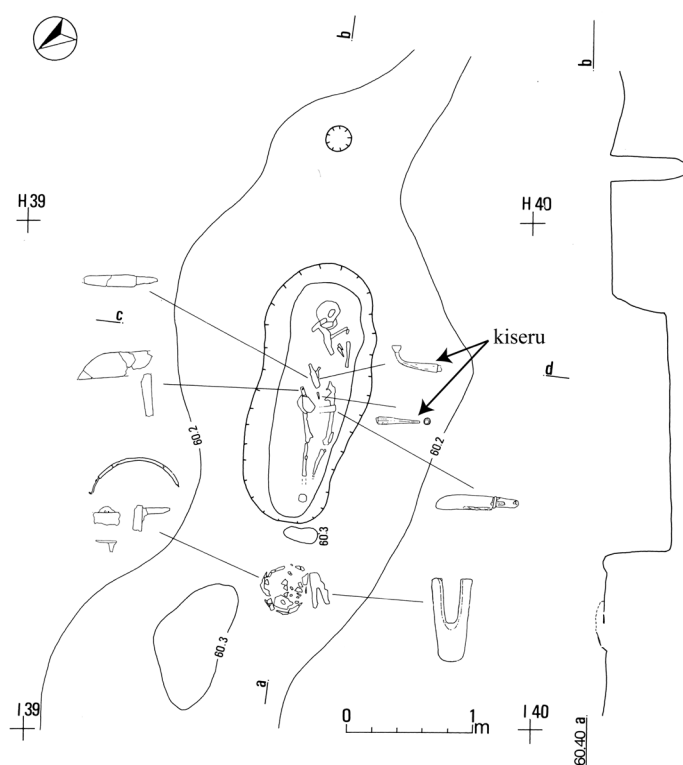


Figure 3. The Ainu burial at the Iruকাশi site (Biratori-cho 1989)

the deceased was an Ainu female based on the study of Ainu ethnology. Morphological study of the bones further confirms that this individual was a mature female; the presence of *kiseru* demonstrates that woman was smoking prior to 1667.

Examples of *kiseru* both with and without *hokyotai* (a reinforcement band) have been excavated from the Iruekashi site and include one type with perforated *hizara* as well as a type with a long curved neck (*aburagaeshi*) lacking a shoulder. These discoveries indicate that the Koizumi chronology (Koizumi 1983) does not apply to this region as *kiseru* are placed in this sequence within the first half of the 18th century.

Chronology of *kiseru* in Hokkaido

Study on *kiseru* in archaeological context in Hokkaido were carried out by Baba (1942), Koshida (1988), Utagawa (1991), Mori (1993), and Sekine (2003, 2014). A number of earlier studies were undertaken in order to determine chronological sequences based on typological studies of *kiseru* and tephrochronology. Thus, one chronological sequence was created based on the morphological characteristics of *kiseru* compared to the Koizumi chronology, a framework based on chronological and typological studies of *kiseru* in Tokyo, the centre of the Edo period (1603–1868). Because *kiseru* have been excavated from archaeological sites in the Edo period, the Koizumi chronology was used to calibrate in order to create a chronological order for *kiseru* in Hokkaido (Koshida 1988, Mori 1993). However, as archaeological evidence increases, particularly from before 1667 (for example, the Ainu burial at Iruekashi), correlated with the Koizumi chronology has become increasingly problematic (Utagawa 1996), as *kiseru* without *hokyotai* can be dated by correlation with a volcanic ash which fell in 1667.

Important such ash layers that have been identified using tephrochronological approach include the Oshima Ooshima-a ash (Os-a) from Oshima, deposited in 1741, the Tarumae-a ash (Ta-a), deposited in 1739, and the Tarumae-b ash (Ta-b), deposited in 1667. The latter two of these erupt from Mt. Tarumae near Tomakomai, while another layer is Komagatake-d ash (Ko-d) from Mt. Komagatake, deposited in 1640.

Four distinct phases have been identified based on these ash layers: 1, the period, prior to 1640, 2, the period between 1640 and 1667, 3, the period between 1667 and 1739, and, 4, the period subsequent to 1739 and 1741. The result of tephrochronological dating and the time sequence of selected *kiseru* from Hokkaido are presented in Figure 4, while the names of sites are listed in Table 1. The chronological sequence within which excavated sites are placed can thus be correlated and dated using volcanic ash deposits as exact dates for these events were recorded in historical times.

Nevertheless, it is necessary to examine such as the presence and absence of *hokyotai* from a technological point of view as well as the development of holes on *hizara* as

| Dating of ash | Kiseru of Hokkaido | Kiseru chronology | Kiseru of Kyoto | | | |
|------------------|--------------------|----------------------|-----------------|--------------|------------------|--------------|
| | | | Hokyotai | | Without hokyotai | |
| | | | Kata | Without kata | Kata | Without kata |
| | | 1590 | | 1 | | |
| | | 11-A | | | | |
| | | 1620 | | | | |
| (Ko-d) 1640 | | | | | | |
| | | 11-B | 2 | 4 | 3 | 5 10 |
| | | | | 7 | | 12 |
| | | 1650 | 6 | 8 | | 9 11 |
| | | 11-C | | 16 | | |
| | | | 13 | 14 | | 19 |
| | | | | 15 | | |
| | | | 18 | 17 | | |
| (Ta-b) 1667 | | | | | | |
| | | 1680 | | | | |
| (Ta-a) 1739 | | 12-A | | | | 20 |
| (Os-a) 1741 | | 1710 | | | | |

Figure 4. Attributions of kiseru within chronological sequence for Hokkaido and Kyoto

characteristic features. This necessitates a revaluation of the chronological sequence of *kiseru* in Hokkaido, discussion of how *kiseru* in the Ainu burial at Iruekashi arrived in Hokkaido, as well as their most likely place of production within Japan. The subsequent discussion presented in this paper is based on the chronological sequence established above.

The earliest evidence of *kiseru* in Hokkaido has been excavated from the Morikawa-3 site (Mori-cho), (Hokkaido Maizobunkazai Centre 2005, 2006), and has been dated to 1600±30 AD on the basis of C-14 isotope analysis. This *kiseru* has a hole on the *hizara*, associated with burned soil, while the presence of *hokyotai* indicates an early stage in the development of this device, as seen at the Moyoro Kaizuka site (Abashiri-shi) (Utagawa 1984), and the Irifune site (Yoichi-cho), (Yoichi-cho Board of Education 1999). All of these sites probably date to before 1640.

A similar type of *kiseru* with a long curved neck (*aburagaeshi*), but lacking a shoulder has also been excavated from the Yuoichashiato site (Hokkaido Maizobunkazai Centre 1986) near Iruekashi also older than 1667, while another similar example has been collected from the Shibecharichashi site (Shin-Hidaka-cho). Although older *kiseru* with *hokyotai* from other localities are indicative of an old type of uncertain date, because it is known that Shibecharichashi was related to Shiakushiain, a local Ainu leader who

Table 1. List of Hokkaido site names

| No. | Site name | Hokyotai | Kata | Hole |
|------|--------------------|----------|------|------|
| (1) | Morikawa 3 | ◎ | ◎ | ◎ |
| (2) | Irifune | ◎ | ◎ | |
| (3) | Irifune | ◎ | | |
| (4) | Moyoro | ◎ | ◎ | |
| (5) | Shibecharichashi | ◎ | | |
| (6) | Iruekashi | ◎ | | |
| (7) | Iruekashi (burial) | | | |
| (8) | Iruekashi | | | ◎ |
| (9) | Iruekashi | | | |
| (10) | Iruekashi | | | ◎ |
| (11) | Iruekashi | ◎ | | ◎ |
| (12) | Iruekashi | | | |
| (13) | Iruekashi | | | |
| (14) | Yuoichashi | | | |
| (15) | Bibi 8 | | | ◎ |
| (16) | Bibi 8 | | | |
| (17) | Bibi 8 | | | |
| (18) | Setanaicashi | | | |
| (19) | Setanaichashi | | | |
| (20) | Setanaichashi | | | |
| (21) | Setanaichashi | | ◎ | |
| (22) | Setanaichashi | | ◎ | |
| (23) | Setanaichashi | | ◎ | |

revolted against the Matsumae domain in 1669, these examples likely date from around, or before, this time.

Another example of a *kiseru* without *hokyotai*, lacking a shoulder, and with a short curved neck (*aburagaeshi*) was recovered from a burial at the Bibi 8 site (Chitose-shi), (Hokkaido Maizoubunkazai Centre 1989, 1992) that has been dated to the period between 1667 and 1739. This discovery includes *gankubi* and *suikuchi* that comprise a set, found together within the grave. One interesting fact about this *kiseru* is that a different material has been used for each part, an iron *gankubi* and a copper *suikuchi*, which indicates that components were treated separately and may also suggest that repair and remaking were carried out at this time.

In terms of their materials, *kiseru* were generally made of copper and brass according to the excavation reports, but as discussed above, there are also some examples made from iron. The existence of brass (the copper-zinc alloy) *kiseru* at Setanaichashi site is very problematic as the existing chronological sequence would date these artefacts earlier

than 1640 based on ash from Komagataek-a (Mori 1993). However, there is an alternative interpretation, this site was covered with Oshima-ooshima ash (Os-a) following an eruption in 1741 (Mineyama 1979). The latter interpretation of a 1741 date seems more likely in the context of the chronological sequence, because *kiseru* made of brass have also been found at this site, also suggestive of a later period.

As a result of these discrepancies, technological aspects of *kiseru* production in both time and space are discussed in order to set them within a chronological sequence that can be used to demonstrate cultural contact between the Ainu and the Japanese.

Technological aspects of *kiseru*

Morphological attributions of *kiseru* can be made on the basis of characteristic features related to the manufacturing process and make it possible to place these artefacts in chronological sequence in both time and space. For example, there is the presence or absence of a small hole on a *hizara* and the presence or absence of *hokyotai* which can be seen the bottom of *hizara*. It is also possible to characterise neck (*aburagaeshi*) length as either long or short, as well as the angle of curvature of *gankubi*.

Yoshida Shogo, a *kiseru* craftsman, noted that the most difficult aspect of making a *kiseru* is to make a curve in part of the *gankubi* and to join the *hizara* to the top (Nakae 1986). The function of the *hokyotai* was clearly to fix and reinforce the joint between the *hizara* and *gankubi* by brazing. Interestingly, however, because examples of an isolated *hizara* were found at the Iruekashi site, this nevertheless implies that *hizara* can become easily separated from *gankubi*. Later, technological improvements occurred to *kiseru* led to the disappearance of *hokyotai* on *gankubi* demonstrating the appearance of newer types. Evidence from genre paintings suggests that these technological improvements took place around 1634 (Tanaka 1988); these paintings show that the presence of *kiseru* lacking *hokyotai* were common in society, in use around 1634. This evidence does not preclude the existence of *kiseru* lacking *hokyotai* at the Iruekashi and the Yuoichashiato sites predating 1667, and it remains important to determine where these objects were manufactured.

The location of *kiseru* handicrafts production

To understand where and how *kiseru* were made, a number of possible places were examined to determine the earliest production location as well as places where technological improvements were likely carried out. To date, the location that is best known as a place for *kiseru* manufacture is Tsubame in Niigata Prefecture, a place where two craftspeople still survive and produce these objects. However, *kiseru* production

technology was introduced to Tsubame between 1764 and 1772 from Aizu in Fukushima Prefecture, Sendai in Miyagi Prefecture and Edo in present-day Tokyo, even though a technological background was already in place as a result of metal production such as iron nails for ship and copperware (Tsubame-shi Sangyo Shiryokan 1999). Thus, it is certain that *kiseru* were made in Edo between 1764 and 1772 as well as in Aizu and Sendai.

In the first place Edo was considered to be most likely the place of origin for *kiseru* production as it was the centre of the Edo Period from 1603. However, the centralisation of politics, culture, merchants, and manufacture in this region did not take place until the so-called the *Genroku* period, between 1688 and 1704, and the production of handicrafts did not flourish here until after 1688. It has been suggested that a present-day retailer called Tanbaya that sells fashion goods in Tokyo occupies the site of the first wholesale *kiseru* shop, established in Edo in 1690 (Nakagawahouzando 1824). This shop produced and retailed these objects throughout the Edo Period and subsequently, until 1973 when it was replaced with a fashion outlet.

Thus, the region that was actually the centre of handicraft production prior to 1688 may actually be the region of Kyoto and Osaka. As the former was a capital before Edo, Kyoto was a place where smoking became fashionable and also the location of the first Japanese smoking ban in 1605. It is of note that several smoking prohibition orders were put in place around this time and lasted until 1623 (Tabako Sangyo Kosaikai 1985).

Archaeological evidence for *kiseru* chronology in Kyoto

A chronological sequence for the archaeological material culture in Kyoto has been established based on typological studies on *Haji* pottery and *Kawarake* earthenware (Komori and Kamimura 1996). The existence of these artefacts over a long and continuous time span has enabled the establishment of a chronological sequence in Kyoto extending from *ca.* AD 750 to AD 1820, divided into fourteen phases, I to XIV. These phases are related to dates of historical events and documents and thus can be temporally correlated and approximately aged. Thus, this established Kyoto chronological sequence is used here to correlate the available sequence of *kiseru* artefacts with the 17th century encompassing chronological phases 11-A (1590–1620), 11-B (1620–1650), 11-C (1650–1680), and 12-A (1680–1710).

Some examples of *kiseru* artefacts excavated from sites in Kyoto are listed in Table 2. These objects were identified and attributed in the same way as discussed above for *kiseru* from Hokkaido.

Artefacts were placed into a chronological sequence by relating to cultural layers in the chronology of Kyoto in order to determine relative dates for *kiseru* (Figure 4).

Table 2. List of Kyoto site names

| Phase 11-A (1590–1620) | | | | |
|------------------------|------------------------------------|----------|------|------|
| No. | Site name | Hokyotai | Kata | Hole |
| 1 | Heiankyo Sakyo Shijo Sanbo Junicho | ◎ | | |
| Phase 11-B (1620–1650) | | | | |
| No. | Site name | Hokyotai | Kata | Hole |
| 2 | Heiankyo Sakyo Shijo Sanbo Junicho | ◎ | ◎ | |
| 3 | Heiankyo Sakyo Shijo Sanbo Junicho | | ◎ | |
| 4 | Heiankyo Sakyo Shijo Sanbo Junicho | ◎ | | |
| 5 | Heiankyo Sakyo Shijo Sanbo Junicho | | | |
| 6 | Heiankyo Sakyo Shijo Nibo Jucho | ◎ | ◎ | |
| 7 | Heiankyo Sakyo Shijo Yonbo Juchome | | | |
| 8 | Heiankyo Sakyo Shijo Yonbo Juchome | | | ◎ |
| 9 | Heiankyo Sakyo Shijo Yonbo Juchome | | | ◎ |
| 10 | Heiankyo Sakyo Shijo Nibo Juyoncho | | | |
| 11 | Heiankyo Sakyo Shijo Nibo Juyoncho | | | |
| 12 | Heiankyo Sakyo Sanjo Yonbo Juchome | | | ◎ |
| Phase 11-C (1650–1680) | | | | |
| | Site name | Hokyotai | Kata | Hole |
| 13 | Heiankyo Sakyo Shijo Sanbo Junicho | | ◎ | |
| 14 | Heiankyo Sakyo Shijo Sanbo Junicho | ◎ | | |
| 15 | Heiankyo Sakyo Sanjo Sanbo Junicho | ◎ | | |
| 16 | Heiankyo Sakyo Sanjo Sanbo Junicho | ◎ | | ◎ |
| 17 | Heiankyo Sakyo Nijo Sanbo Junicho | ◎ | | |
| 18 | Heiankyo Sakyo Nijo Sanbo Junicho | ◎ | ◎ | |
| 19 | Heiankyo Sakyo Nijo Sanbo Junicho | | | |
| Phase 12-A (1680–1710) | | | | |
| | Site name | Hokyotai | Kata | Hole |
| 20 | Heiankyo Sakyo Shijo Sanbo Junicho | | | |

Having examined the *kiseru* excavated from Kyoto, placing them into a chronology on the basis of attribution, it is possible to note that types with, and without, *hokyotai* (reinforcement band) existed in the phase 11-B, some of these examples had both *kata* (shoulder), while holes were also present on both types. Thus it seems likely that the pre-1667 present *kiseru* in Hokkaido correlate to phase 11-B in the Kyoto chronology both in terms of type and date. This result implies that no large hiatus in chronological

sequence is seen between Hokkaido and Kyoto. It seems to be more appropriate to take into account the Kyoto chronology than the Koizumi Chronology. For example, *kiseru* 5 in phase 11-B resembles examples 7, and 10 from Iruekashi, while *kiseru* 14 from the Yuoichashi site is an example that lacks a *hokyotai*. Some of these examples also have *hizara* holes, while *kiseru* 10 from phase 11-B resembles specimen 9 from Iruekashi, another example of *kiseru* that lacks a *hokyotai*. Similarly, *kiseru* 4 from phase 11-B and specimen 16 from phase 11-C resemble *kiseru* 11 from Iruekashi, additional examples of artefacts with *hokyotai* but not *hizara* holes. *Kiseru* 6 from phase 11-B resembles specimen 2 from Irifune, an example with both *hokyotai* and *kata*, while *kiseru* 1 from phase 11-A resembles specimen 5 from Shibecharichashi, and specimen 3 from Irifune. Finally, *kiseru* 6 resembles number 2 from Irifune, examples that possess *kata*. This comparative chronological examination of morphological characteristics indicates that *kiseru* collected from the Iruekashi site most likely originated from Kyoto.

The following section examines archaeological finds at the workshop site in order to understand an area, where *kiseru* were handcrafted in Kyoto.

An excavated metal workshop in Kyoto

A metal workshop was excavated at the Heiankyo Sakyo Sanjo Shibo Jucho ato site (Figure 5), (Kyoto-shi Maizobunkazai Kenkyujo 2004). Examination of this site places it within phase 11 (1650–1680) of the Kyoto chronology. The significance of the site is that the technological process of metal production from copper to brass can be identified archaeologically at this workshop. Evidence for this technological change includes the presence of artefacts related to metal working, including crucibles, lids, stands, and tuyeres, as well as pieces of a wall, lids, furnaces structures. Of these, the latter comprise three different kinds of furnaces; small and large in size as well as rectangular in shape. In addition, a wheel, ditches, a line of crucibles, and post holes were also excavated along with a disposal pit at the north side of the workshop area that contained huge amounts of debris from crucibles, charcoal, and the by-products of metal working.

The working period evidenced by this site was approximately 30 years, divided into five stages (A–E) from the earliest to the end of workshop based on structural analyses. One significant observation is that by the time of stage C, metal was probably refined using the small rectangular structure and big furnaces, while by the time of stage D, further evidence of an increase in the number of furnaces and other structures suggests that this was a prosperous time for the workshop. Finally, during stage E, archaeological evidence points to reduction in the size of the workshop as the number of furnaces was reduced and this facility gradually declined.

Archaeometallurgical analyses carried out on artefacts such as slag and crucibles,

as well as some residue from furnaces surfaces, indicates that a change in the refining process from copper to brass production occurred during stage D. Results indicate that copper was refined during stages A and B, the early phases of the workshop, while brass with an 8:2 ratio between copper and zinc occurred from stage C onwards. Evidence for zinc metal was also found on the workshop floor from stage C onwards, as well as adherence to crucibles and the furnace lids. The presence of zinc indicates that brass, a binary alloy of copper and zinc, was refined in this workshop from stage C onwards.

Additional archaeometallurgical analyses also demonstrate the presence of slightly different copper: zinc ratios within the brass slag from the workshop, including 9:1, 8:2, and 7:3. These differences indicate that different qualities of brass were being used for different purposes and it is clear that a transition took place at this site from the production of copper-objects refined in small furnaces during stages A and B, to the production of brass-objects during the stages C and D. It is also clear that brass handicraft was practiced at this site during phase 11-C (1650–1680). Finally, it is important to note that zinc as a raw material does not occur in Japan but must be imported; the earliest records of zinc imports are in 1636 and 1640 from the Dutch, and in 1641 from China (Hara 2000), time periods that are consistent with the presence of a brass handicraft being carried out in Kyoto at this time.

Additional archaeological evidence includes the presence of 12 further sites related to metal work scattered around the area of the primary workshop site. Artefacts excavated from these sites that are associated with metal work including metal and copper slag, tuyeres, wall of furnaces, grinding stones, crucibles, molds, including for mirrors and sword- accessories, as well as copper pieces, fragments of other metals, and a copper-ladle.

The Kyoto handicraft area encompassed almost 300m² and was bounded by the streets between Sakyo-Ichijo and Sanjo to the north and south, the streets between Sanbo-Kyuchu and Jugocho in the west, and those between Shibo Rokucho, and Jucho to the east. The metal workshop itself was located in the area bounded by the streets between Oike-dori and Oshikoji-dori in a west-east direction, and those between Yanaginobanba-dori and Tominokoji-dori in a south-north direction (Figure 5).

Since the street names in present-day Kyoto are the same as they were in the 17th century, it is possible to locate exactly where these sites were, and as well as to identify them in historical documents published at the time. Furthermore, an interview with a present-day metal craftsman, Chikueido Eishin, revealed that his work also includes the production of metal *kiseru*. Thus, technology for *kiseru* production remains intact in present-day Kyoto, enabling a direct understanding of this handicrafts process within a workshop in the same area of the city. Chikueido Eishin's workshop is in fact located just one street behind the archaeological site of original metal workshop.

Historical documents that discuss *kiseru* in Kyoto

The metal workshop site discussed above was clearly mentioned in a number of historical documents. Of these one noted that “copper craftspeople were on the street of Yanaginobanba, down to the south from Oshikoji” (Asai 1678), while another mentions that the “wholesale of brass was on the street of Yanaginobanba, down to the south from Oshikoji, Shichiuemon” (Suiundo 1689). These descriptions match exactly the Yanaginobanba street name as well as the period between 1665 and 1685 when the metal workshop site encompassed Kyoto phase 11-C. These records also imply that the transition from copper handicraft to brass handicraft took place at this location (Kyoto-shi Maizobunkazai Kenkyujo 2004). Historical documents also describe how craftspeople who made “mirrors,” “ornaments,” “copper handicrafts,” and “brass handicrafts” gathered together in order to refine and produce metal work, and that their workshops were located within the area bordered by streets such as Imadegawa-dori to the north, Shijo-dori to the south, Tominokoji-dori to the east, and Saidoin-dori to the west. The most interesting description, however, that can be gleaned from available historical records is that, in this area, a component of *kiseru* production was located in a block two streets further down from Ainomachi-dori street. In this block, *kiseru* shops were located side-by-side on both the east and west sides of the street, and all produced *kiseru* professionally (Asai 1665). In addition, documents subsequently written in 1830 (Kitamura 1830) suggest that numerous *kiseru* shops were also located near Daibutsu at the Sanjo Ohashi Bridge, and that two streets down the Sakuraya workshop was located at Tominokoji. This latter point is important because Sakuraya-made *kiseru* were well-known at this time in particular they were made of brass. This location is exactly the area where the excavated metal-working workshop discussed above between Tominokoji and Yanaginobanba (Figure 5). Although, there is the obvious time gap between terminations of the 1680, it is possible that production of brass *kiseru* was continued subsequently by other artisans around this location until 1830.

Thus, for all the reasons discussed above, it must be considered likely that *kiseru* were being manufactured in Kyoto by 1605, around the same time that smoking practices became fashionable. It is also possible to hypothesise that *kiseru* from the Iruekashi site dated to before 1667 were produced somewhere in the surroundings or near to Nijo, Sanjo, or Tominokoji in Kyoto. *Kiseru* excavated from the Shibeichiari site are made of copper, predating the introduction of brass production, these artefacts can be dated to before 1650 based on the archaeological evidence. Based on the chronology and typology of these objects and their close resemblance to *kiseru* from Hokkaido, it can be concluded that *kiseru* from the Iruekashi and Shibeichiari sites would be equivalent to phase 11-B in the Kyoto chronology. Finally, brass *kiseru* excavated from the Setanaichashi site must be

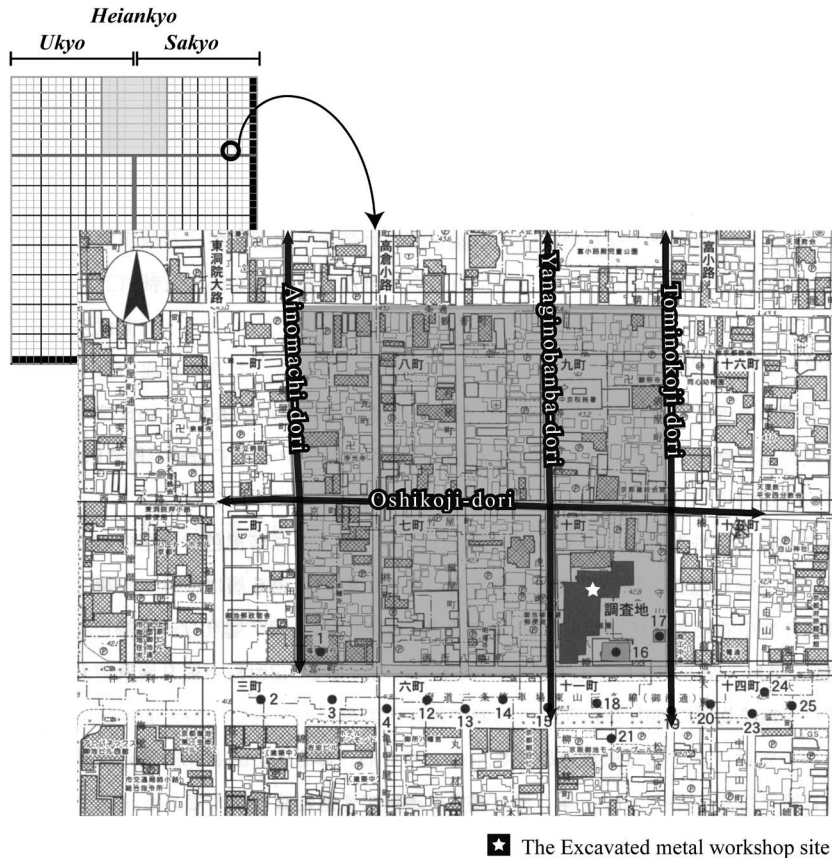


Figure 5. Archaeological excavation site of the metal workshop site superimposed onto a street map of and Kyoto showing Ainomachi-dori, Yanaginobanba-dori, Tominokoji-dori and Oshikoji-dori

not dated to 1640, but dated to the period before 1741, as discussed previously due to the date that the production of brass material was first initiated.

The existence of a northern trade route

One important ethnographic record relevant to this research is the diary of the voyage of Captain Maarten Gerritsz Vries, a Dutch captain who sailed in 1643, from Batavia, Java, to look for the 'gold and silver island' (Leupe 1858, Baba 1942, Kitagamae 1983, Fukasawa 1998). Vries's ship was, however, driven off course to the north by a storm and arrived near the coast of Hiro, at Tokachi on the south-east coast of Hokkaido (Figure 2).

This record mentions that the Ainu were very fond of tobacco, which they called

“*tanpack*,” and discusses the fact that tobacco leaves were traded alongside rice, cloth, sake-alcohol, and lead-rings, by ships travelling from Matsumae to the bay of Atsukeshi on the north-east coast of Hokkaido. On the basis of this ethnographic evidence, it is clear that the Ainu who inhabited the east of Hokkaido were already enjoying tobacco traded from Japan by 1643. What remains unclear, however, is whether they used Japanese-made metal *kiseru* as smoking device or ones made by the Ainu locally. It is not impossible to hypothesise that metal *kiseru*, used by traders and sailors themselves were among the goods exchanged with the Ainu, since *Basho* (the trading post of the Matsumae domain) at Atsukeshi on the north-east coast was established in 1635, and ships could travel further north from Atsukeshi (Figure 2), to trade.

The 18th century *Kitamaebune* trade route was a westward shipping and trade route run by merchants in the Kyoto–Osaka region that was established by direct shipping between Hokkaido and Osaka. When this *Kitamaebune* trade was first initiated, Hokkaido products reached Osaka by ship directly via the Inland Sea of Japan, while Japanese products from Kyoto and Osaka were traded back to Hokkaido. However, it is also clear that a westward shipping and trade along the coastline of the Sea of Japan existed prior to the *Kitamaebune* trade route. This route, referred to here as pre-*Kitamaebune* trade, must have been existed to Hokkaido by 1600, because the port of Yoichi had been built by this time by the Matsumae domain to serve *Basho* (Kaiho 1985).

Marine navigation along the Sea of Japan coastline is known to extend back to the Middle Ages and has been referred to as the *konbu*-trade (seaweed-trade) route. For example, a Matsumae historical document written in 1646 called the *Shinra no kiroku* (vol.one), mentioned that, at the height of the prosperity of Usukeshi (present-day Hakodate), (Figure 2), ships came and went regularly three-times a year from Wakasa (in Fukui Prefecture) (Figure 2), (Kaiho 1985). In addition, the *Teikin Ourai* document written sometime between the 14th and 15th centuries mentions that when *konbu* products from Uga in present-day Hakodate (Figure 2), were brought into Obama, in Wakasa bay, their name was subsequently amended to Wakasa-*konbu* (Kaiho 1985).

It seems clear that pre-*Kitamaebune* marine trade took place between Hokkaido and Kyoto *via* the ports of Tsuruga, Wakasa, and Obama, the nearest ports to Kyoto, necessitating a crossing of Lake Biwa by boat (Figure 2). Thus products from the north were brought into Kyoto *via* this route, and vice versa. Consequently, such marine trade introduced the Japanese products to Ainu society.

Conclusions

In conclusion, having examined the archaeological evidence for *kiseru* from both Hokkaido and Kyoto, it is clear that these objects lacking *hokyotai* appear by phase

11B of Kyoto chronology, dated between 1620 and 1650. *Kiseru* of this type were first recognized in society around 1634 following technological improvements. Thus it is, therefore, possible to determine that *kiseru* lacking *hokyotai* present at Iruekashi prior to 1667 originated in Kyoto, a hypothesis that is, corroborated by a series of historical documents. This conclusion implies that *kiseru* had diffused to the Ainu at Iruekashi sometime between 1634 and 1667, which were utilising metal versions of these smoking devices at the same time as Japanese. As marine trade along the coastline of the Sea of Japan had been in existence for a long time connecting the main island of Japan and Hokkaido, the presences of Japanese-made products indicate close cultural contact. Therefore, Ainu society prior to 1667 was already influenced, at least to some extent, by Japanese economic expansion.

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