Special Feature

Korean Potters in the 17th Century: Their Lives and Pottery in Korea and Japan

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Introduction

The 17th century presented significant challenges for Joseon ceramics, particularly during the Imjin War and the Manchu Invasion of 1636. The government kiln in Gwangju (*bunwon*), responsible for crafting royal vessels, faced severe shortages of raw materials, fuel, and craftsmen, leading to a sudden halt in production. As a result, the production of blue and white porcelain virtually ceased, and porcelain featuring underglaze iron decoration—a style seldom seen in China—emerged as the primary material for royal ceremonial wares (Mori 1992, 111–25; Ōhashi 1985, 18–19; Katayama 1998, 34–40; Bang 2007, 275–80; Katayama 2003; Nagatake 1981, 123–48; Bang 2018, 109–30). Furthermore, during and after the Imjin War, some Korean potters were taken to Japan, where they continued to craft both Korean and Japanese-style ceramics, significantly influencing the origins of Japanese porcelain production.

This study explores the adaptive strategies of the Joseon ceramics industry, particularly potters, in response to the catastrophes of the 17th century, as well as improvements in the institutional frameworks. It specifically examines the recruitment and treatment of potters, the identification of raw material sources, and the procurement of fuel through historical data analysis. Furthermore, this research delves into efforts to counteract the deteriorating production environment and enhance production technologies. This includes studying the characteristics of iron-colored white porcelain that replaced blue and white celadon, alongside modifications in design application and kiln structures. Additionally, this paper addresses the plight of craftsmen who were abducted or forcibly relocated to Japan around the time of the Imjin War. It investigates their abduction and relocation processes, birthplaces and places of settlement, changes in their status, and production techniques, drawing on Japanese literary sources and archaeological findings.

Potters and the Restructuring of the Government Kiln System

In the 17th century, the management of kilns under the Royal Cuisine Office (Saongwon), tasked with producing ceramics for the royal family, faced significant challenges. The depletion of state finances following two major wars hampered operations. Compounded by economic hardships and strained relations with China, the importation of pigments became problematic, leading to the suspension of blue-and-white porcelain production. Nevertheless, in response to these adversities, a comprehensive reorganization of the government kiln system was undertaken. This restructuring led to numerous changes in Korean pottery, marking a pivotal period of adaptation and innovation.

Aftermath of the Two Wars

In 1601 (the 34th year of King Seonjo's reign), the aftermath of the Second Japanese Invasion of Joseon (Jeongyu jaeran) left the nation in dire straits. The disruption caused by the wars forced the replacement of porcelain with inferior-quality brass vessels in royal rituals.[1] Officials even proposed replacing silverware with porcelain when hosting emissaries from China, reflecting the extent of the material shortages (Bang 2000, 23–83).[2]

During the reign of Gwanghaegun (r. 1608–1623), it remained challenging to produce quality ceramics due to lingering issues in the management of the government kilns, including the recruitment and treatment of craftsmen and the supply of raw materials and fuel.[3] Furthermore, the hierarchical distinctions governing the use of ceramics based on status and setting had eroded to the point where even palace vessels were lent out to private citizens. In 1616 (the eighth year of King Gwanghaegun's reign), officials advocated for the restoration of the hierarchical order prescribed by the *Annotations to the State Code* (*Gyeongguk daejeon juhae*) compiled in 1555.[4] According to these guidelines, *baekja* (Joseon white porcelain) was designated for the king's use, *cheongja* (Joseon celadon) for the Donggung Palace where the crown prince resided, and *cheonghong arihwa* 靑紅阿里畫, vessels with colored patterns, for various palace offices such as the Office of Palace Procurement (Naejasi), the Office of Palace Supplies (Naeseomsi), and the Office of Honorable Guests (Yebinsi). Regarding *cheonghong arihwa*, historical records provide several insights into these vessels. In the 11th year of King Sejong's reign,

1 *Seonjo sillok*, Vol. 134, Year 34, Month 2, Day 2.
2 *Seonjo sillok*, Vol. 146, Year 35, Month 2, Day 14.
3 *Gwanghaegun ilgi*, Vol. 29, Year 2, Month 5, Day 13.
4 *Gwanghaegun ilgi*, Vol. 102, Year 8, Month 4, Day 23.

they were referred to as "chaemun sabal" (ceramic dishes with colorful patterns 彩文沙鉢) within the Office of Honorable Guests. Additionally, the *Yongjae chonghwa* (*Literary Miscellany of Seong Hyeon*) mentions that *chaeja* 彩磁 was used during the reign of King Sejo.[5] The term "chaemungi" 彩文器 is noted in the *Annotations to the State Code*. Based on these references, it can be inferred that *cheonghong arihwa* may include white porcelain with inlaid designs, *buncheong* ware, or blue-and-white porcelain.

During the late reign of King Gwanghaegun, importing blue pigment from China became nearly impossible, which led to the adoption of *gahwa* 假畫 for decorating vessels used during royal occasions.[6] *Gahwa* involves either affixing patterns drawn on paper or silk to white porcelain, or directly painting designs onto a bisque-fired vessel using ink and pigments. The latter method appears to have been more prevalent, as records from the subsequent reign of King Injo mention that the patterns on porcelain jars decorated using *gahwa* often became damaged or wore out during transportation.[7]

According to records from the Royal Cuisine Office in 1637 (the 15th year of King Injo's reign) and in 1646 (the 24th year of King Injo's reign), following the Manchu War of 1636, the government kiln faced a dire situation necessitating the suspension of ceramic production to alleviate the populace's suffering.[8] Consequently, in 1638 (the 16th year of King Injo's reign), there was a notable absence of blue-and-white porcelain with dragon designs for significant rituals, following in 1625 (the third year of King Injo's reign).[9] These pieces were replaced with *gahwha*-decorated ceramics.[10] Moreover, in 1638 (the 26th year of King Injo's reign), the transportation system for tributes experienced significant shortcomings, resulting in the occasional damage of precious white porcelain ware, and in some instances, a quarter of tribute vessels.[11] It appears that vessel damage during transportation wasn't the only concern; there were instances where vessels borrowed from offices failed to be returned, raising suspicions of their misappropriation for private use (Kang 1984, 124).

5 Seong Hyeon, *Yongje chonghwa*, Vol. 10.
6 *Gwanghaegun ilgi*, Vol. 127, Year 10, Month 4, Day 3.
7 *Seungjeongwon ilgi*, Vol. 14, Injo, Year 4, Intercalary Month, 6. Day 13.
8 *Seungjeongwon ilgi*. Vol. 58, Injo, Year 15, Intercalary Month 4, Day 11.
9 *Seungjeongwon ilgi*, Vol. 67, Injo, Year 3, Month 2, Day 14.
10 *Seungjeongwon ilgi*, Vol. 67, Injo, Year 16, Month 10, Day 21.
11 *Seungjeongwon ilgi*, Vol. 101, Injo, Year 26, Intercalary Month 3, Day 15.

Treatment of Potters and the Exclusive Craftsmanship System

During the 17th century, potters employed at the government kiln were legally restricted from engaging in other forms of labor, with their children required to inherit the craft of vessel production through successive generations.[12] This underscores the significance placed on crafting royal and tribute vessels during this period. However, the treatment of potters began to decline gradually, particularly around the time of the two major wars. In 1625 (the third year of King Injo's reign), the number of supporters for the 380 potters and their families at the Royal Cuisine Office through cloth tax payments in lieu of compulsory labor decreased significantly, dropping from 1,140 to only 821.[13] This reduction in cloth tax support resulted in financial constraints, leading to a decrease in the number of government-employed potters and subsequently reduced production output.[14] Additionally, the scarcity of raw materials compounded the challenge of producing high-quality porcelain, exacerbated by inadequate inventory management practices.[15]

In 1632 (the 10th year of King Injo's reign), a report by Gang Hongjung revealed that more than half of the craftsmen in Gyeongsang Province opted not to enlist in the government kilns.[16] By 1633 (the 11th year of King Injo's reign), it was acknowledged that this stemmed from the poor treatment of artisans. Consequently, efforts were made to rectify this by successfully transferring cloth payments, intended for 300 artisans, from the Ministry of War to the government kiln.[17] Records indicate that annually in the second month, officials responsible for porcelain production (*beongwan* 燔官) would journey to various regions to excavate pottery clay, signaling the commencement of production. Given the urgency surrounding the creation of royal and ritual vessels, it is evident that the treatment of these officials should have been prioritized; however, it appears that this was not consistently observed in practice.[18] The original intent behind passing down craft skills was not solely to preserve the

12 *Daejeon husongnok*, "The Section Governing the Ministry of War."
13 *Seungjeongwon ilgi*, Vol. 7, Injo, Year 3, Month 7, Day 2.
14 *Seungjeongwon ilgi*, Vol. 7, Injo, Year 3, Month 6, Day 17.
15 *Seungjeongwon ilgi*, Vol. 14, Injo, Year 4, Month 7, Day 19.
16 *Seungjeongwon ilgi*, Vol. 36, Injo, Year 10, Month 4, Day 10.
17 *Seungjeongwon ilgi*, Vol. 40, Injo, Year 11, Month 6, Day 11.
18 *Seungjeongwon ilgi*, Vol. 50, Injo, Year 13, Month 11, Day 19.

artisans' expertise but also had economic implications, ensuring the continuity of tribute cloth payments from provincial craftsmen.[19]

In the late 17th century, potters employed at the government kiln faced significant challenges. Working from the second to the tenth month in 1694, they were prohibited from farming, which made it difficult for them to sustain themselves, especially during periods of decreased revenue from cloth tax paid by artisans in the provinces. Moreover, they were required to produce additional special wares for royal ceremonies and annual events, on top of the daunting task of creating 1,300 *juk* (approximately 13,000 pieces) of ceramics for presentation to the court.[20] This situation placed considerable strain on the potters, as the amount of cloth tax paid by provincial potters was insufficient to support their needs, while the production quota imposed upon them was excessive.

In response, a measure aimed at ensuring stable ceramic production and improving the treatment of artisans emerged: the implementation of a system where craftsmen were assigned to the government kiln and dedicated exclusively to pottery production. During the late 17th century, it appears that the government gathered enlisted craftsmen around the government kiln, where they resided in nearby villages. However, being exclusively assigned to the government kiln did not guarantee their permanent residence. Some craftsmen would occasionally flee, necessitating the recruitment of replacements in the following year. The permanent-residence system was referred to as *tong-sambeon* enlistment 通三燔立役, contrasting with the previous *bun-sambeon* enlistment 分三燔立役.[21] The rationale behind this change was likely the advantage of hiring dedicated craftsmen to consistently acquire and maintain their skills. Consequently, the government kiln was able to employ skilled and dedicated artisans, while local craftsmen who did not serve in the government kiln could only fulfill their obligations by paying cloth tax.

Meanwhile, in the late 17th century, Joseon faced unprecedented natural disasters and famine due to climate change, leading to an intermittent halt in pottery production. Tragically, some artisans working at the government kiln in Gwangju succumbed to starvation. In response to this crisis, private pottery

19 *Seungjeongwon ilgi*, Vol. 355, Sukjong, Year 15, Month 5, Day 16.
20 *Seungjeongwon ilgi*, Vol. 355, Sukjong, Year 20, Month 2, Day 13.
21 *Seungjeongwon ilgi*, Vol. 370, Sukjong, Year 23, Intercalary Month 3, Day 2.

production, previously conducted clandestinely, was openly permitted as a solution to the shortage.[22]

Raw Materials and Fuel

The key ingredients for producing quality white porcelain are premium clay and an ample supply of firewood for the kiln. During that era, the local populace of clay-rich regions were enlisted to excavate clay and compensated for their labor. However, specific circumstances during the first half of the 17th century remain obscure due to a lack of surviving records. It appears that proper clay collection was challenging in the aftermath of war devastation and ensuing poverty. In 1653 (the fourth year of King Hyojong's reign), a substantial contingent of horses and soldiers was mobilized to extract white clay in Wonju, Gangwon Province. Unfortunately, those involved did not receive adequate rewards for their efforts.[23] Subsequently, in 1656 (the seventh year of King Hyojong's reign), a memorial was presented to the king, highlighting the plight of hired soldiers engaged in white clay mining in Wonju. These soldiers were promised payment of three *pil* of cloth per person but this commitment was not honored, resulting in their hardship due to excessive excavation.[24]

During the reign of King Sukjong, artisans and officials in the government kiln persisted in their quest to discover the finest white clay for Joseon white porcelain through clay mining across various regions. From Gyeongju and Jinju in Gyeongsang Province to Seoncheon in Pyeongan Province, clay samples were collected nationwide and subjected to kiln testing.[25] For instance, in Yanggu and Chungju, a staff official (*nangcheong*) or a head craftsman supervised the excavation and transportation of clay, and the best samples were selected through trial firing. Transportation was facilitated by government ships along the Han River (*gyeongang seon*).[26] However, the involvement of staff officials often led to complications, resulting in the people's demand for their cessation, which was heeded in many cases.

22 *Seungjeongwon ilgi*, Vol. 370, Sukjong, Year 23, intercalary Month 3, Day 2.
23 *Bibyeonsa deungnok*, Vol. 16, Hyojong, Year 4. Month 11, Day 30.
24 *Bibyeonsa deungnok*, Vol. 18, Hyojong, Year 7, Month 7, Day 20.
25 *Bibyeonsa deungnok*, Vol. 44, Sukjong, Year 16, Month 10, Day 28.
26 *Seungjeongwon ilgi*, Vol. 367, Sukjong, Year 22, Month 9, Day 6.

In 1682 (the eighth year of King Sukjong's reign), a meticulous process was implemented for clay extraction in remote areas such as Seoncheon and Gyeongju. The clay underwent a purification process known as *subi* 水飛, where it was submerged in water and stirred to remove impurities. It was then divided into suitable sizes for transportation, a method lauded for its scientific and strategic approach (d'Entrecolles 1979, 78). Regarding the white clay used for crafting vessels intended for royal banquets, eight *du* 斗 of clay was processed. This practice was exemplified in 1677, suggesting its prior occurrence.[27] Typically, clay excavation occurred in the production area, with transportation facilitated to neighboring towns before reaching the government kiln via land and ship. Examination of records on white clay reveals that clay from Yanggu, Gangwon Province was esteemed as the finest, followed by clay from Wonju, Seosan, Gyeongju, and Seoncheon.[28] In the case of Jinju, excavation and transportation not only involved white clay but also clay for kiln construction, cylindrical pottery covers, and wood ash for glazes.[29]

The firewood essential for firing white porcelain was procured from the six designated areas around Gwangju, where the government kiln was situated. These areas were designated as public reserves, with logging naturally prohibited in the vicinity. Within the government kiln, firewood was primarily utilized for biscuit firing and the subsequent second firing after glazing, resulting in substantial consumption. While the precise amount of wood required is difficult to estimate, approximately every ten years, the kiln had to be relocated to a new area. In 1676 (the second year of King Sukjong's reign) Yi Gwanjing, an official in the Royal Cuisine Office, dispatched a staff official to scout for a suitable relocation site for the kiln, ensuring ease of access to firewood.[30]

However, when people entered the reserves—cleared of trees following the relocation of the government kiln—and cultivated farmland there without permission, the government chose not to evict them. Instead, it allowed them to stay, collecting taxes of two *du* of rice per household and four *du* of rice from their farmland. Half of these taxes were allocated to the Royal Cuisine Office and the other half to the government kiln.[31]

27 *Seungjeongwon ilgi*, Vol. 220, Sukjong, Year 8, Month 8, Day 9.
28 *Bibyeonsa deungnok*, Vol. 60, Sukjong, Year 36, Month 7, Day 16.
29 *Seungjeongwon ilgi*, Vol. 372, Sukjong, Year 23, Month 7, Day 26. The original text is as follows: "又以司饔院官員 以都提調意啓曰 本院燔造所 所用白土二百五十石 築釜土二十石 法斤土十五石 仇木灰十五石 例於秋間 下送郎廳于晉州地."
30 *Seungjeongwon ilgi*, Vol. 255, Sukjong, Year 2, Month 8, Day 1.

Relocating the Government Kiln

In the 17th century, the government kiln in Gwangju was frequently moved to different wooded areas within the local wood reserves, approximately every ten years. Historical records from 1648 (the 26th year of King Injo's reign) detail the preparations and circumstances surrounding these relocations as it had been nearly a decade since the kiln was last moved in 1640. The construction plans called for government offices and warehouses to be rebuilt with thatch roofs by Gyeonggi Province, a style typical before the Imjin War, while wood and wooden boards were supplied by Gangwon Province.[32] These frequent relocations, carried out at least once every decade, required substantial materials[33] and often led to widespread complaints from the local population.[34]

Therefore, in the first year of Sukjong's reign, a plan emerged to address the problems associated with the frequent relocation of the government kiln. By 1697, the 23rd year of his reign, the wood reserves had been severely depleted due to farmland cultivation, rendering the practice of moving the kiln close to these reserves ineffective. Consequently, a proposal was put forth to permanently fix the location of the government kiln on the riverbank, which would facilitate easier transportation of firewood.[35] Although implementation would require considerable time, this discussion marked a significant shift, indicating that the reorganization of the government kiln was underway.

Potters and Craftsmanship

Refinement of Seokganju and Decoration

In the 17th century, following the disruption caused by the two wars, the

31 *Bibyeonsa deungnok*, Vol. 37, Sukjong, Year 9, Month 4, Day 5.
32 *Seungjeongwon ilgi*, Vol. 103, Injo, Year 26, Month 11, Day 9.
33 *Seungjeongwon ilgi*, Vol. 256, Sukjong, Year 2, Month 8, Day 28.
34 *Seungjeongwon ilgi*, Vol. 298, Sukjong, Year 9, Month 4, Day 3.
35 *Seungjeongwon ilgi*, Vol. 370, Sukjong, Year 23, intercalary Month 3, Day 12.

Figure 1. *Baekja cheolhwa yongjun* (*Jar with Dragon Design in Underglaze Iron*), 17th century, H. 41.5 cm, National Museum of Korea

Figure 2. *Baekja cheolhwa kkeunmunui byeong* (*Bottle with String Design in Underglaze Iron*), 15th century, H. 31.4 cm, National Museum of Korea

production of traditional blue-and-white porcelain declined, leading to the rise of porcelain featuring underglaze iron decoration. This style utilized a pigment known as *seokganju* 石間朱, or hematite. In 1634 (the 12th year of King Injo's reign), the Royal Cuisine Office reported that jars with dragon designs intended for use during the reception of a Chinese emissary would be crafted using hematite instead of *gahwa* (Figure 1).[36] Thus, it is evident that from the early 17th century, porcelain with underglaze iron decoration was produced as vessels for significant court occasions.

Until the early Joseon dynasty, there were relatively few examples of porcelain featuring underglaze iron compared to the prevalence of blue-and-white porcelain. Only a handful of surviving pieces, such as those adorned with simple string designs, attest to this rarity (Figure 2). Consequently, it seems improbable that the issues related to the pigment of white porcelain with underglaze iron were given serious consideration during this period.

However, as the production of white porcelain with underglaze iron increased from the 17th century onward, so did the interest in and understanding of how to use the pigment. A record from 1673 (the 14th year of King Hyeonjong's reign) notes that the pigment is initially red but can occasionally turn yellow depending on the firing conditions. Another challenge

36 *Seungjeongwon ilgi*, Vol. 43, Injo, Year 12, Month 5, Day18.

is the pigment's volatility after firing.[37] This volatility depends on factors such as the thickness of the pigment and glaze, as well as the firing conditions—whether in an oxidizing or reducing flame—which likely required considerable experimentation when painting with this unpredictable pigment. This can be observed in artifacts where it is evident that the pigment was applied too thickly, resulting in charring. This occurs when the glaze layer is thin, allowing the pigment to come into direct contact with the flame. Additionally, the Gyeongsang region is noted as a source of this pigment (Woo 2011, 246), presumably due to the high quality and abundance of the pigment found there.

Certainly, applying *seokganju* pigment onto white porcelain after biscuit firing presents challenges. Firstly, due to its high volatility at elevated temperatures, light application often results in significant loss of pigment during firing, leaving behind indistinct shapes. This phenomenon is commonly observed in numerous white porcelains across the Joseon dynasty. Additionally, the particles of iron oxide pigment are larger and coarser compared to those of cobalt blue pigment, requiring extensive grinding and meticulous attention to achieve the desired particle size.

However, starting from the 17th century, the use of *seokganju* pigment became prevalent in white porcelain intended for significant state banquets and ceremonies. Despite its high volatility, artisans developed techniques to overcome this challenge, employing quicker brushstrokes and carefully controlling their grip to manage the application. For instance, the depiction of bamboo leaves and branches on the *Jar with Plum Flower and Bamboo Design in Underglaze Iron* exemplifies the mastery of brushwork (Figure 3). The realistic portrayal of leaves and the fluid lines of branches, executed in a single stroke from root to tip, demonstrates a deep understanding of pigment properties and extensive practice, even among the most skilled painters. Such proficiency likely stemmed from the extensive experimentation conducted by craftsmen in pigment production, refinement, and firing processes.

37 *Seungjeongwon ilgi*, Vol. 234, Hyeonjong, Year 14, Month 7, Day 5. The original test is as follows: "上曰 沙燔之石一件 則使益新書之 一件則使正英書之 御覽後 當取舍矣 若以靑書之 則若綵色 水飛而調用之耶 正英曰 磨而書 上曰 若屑耶 正英曰 若沙矣 維重曰 品貴難得 故不敢水飛 而書之 甚難矣 正英曰 石間朱調墨雖善 而燔後或有漫漶者 燔後或甚好云 好不好 不可預知矣 上曰 回回靑本質黑 而燔則靑 石間朱本質赤 而燔後黑耶 正英曰 然矣 徽曰 石間朱 燔後或有黃者矣 上曰 石間朱產何處耶 維重曰 嶺南有之 壽興曰 靑華則燔後乃滅 蓋以浮輕也 維重曰 石類爲重 故入火不滅矣 正英曰 沙器燔造時 見之 則所燔諸器 有如飛之狀 此時似竄矣."

Figure 3. *Baekja cheolhwa maejungmunho* (*Jar with Plum Flower and Bamboo Design in Underglaze Iron*), 17th century, H. 40 cm, National Museum of Korea

While white porcelain wares in underglaze iron produced in the government kilns exhibit a structured style adhering to certain standards, those presumed to be crafted in local kilns display more free-form patterns. Unlike the pigment used in blue-and-white porcelain, *seokganju* was widely available across provinces, with its usage not restricted, thereby allowing provincial potters to manifest their individual decorative inclinations. For instance, the *Jar with Cloud and Dragon Design in Underglaze Iron* and the *Jar with Tiger Design in Underglaze Iron* are distinguished by their satire, humor, and audacity, reminiscent of 19th-century folk paintings (Figures 4 and 5).

Figure 4. *Baekja cheolhwa ullyongmunho* (*Jar with Cloud and Dragon Design in Underglaze Iron*), late Joseon, 17th century, H. 35 cm, Gwangju National Museum

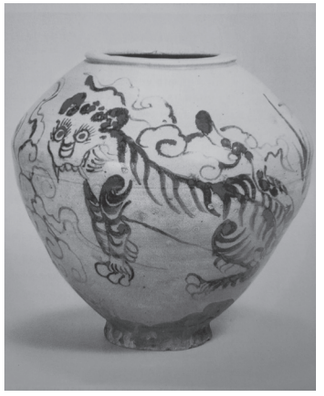

Figure 5. *Baekja cheolhwa horongmunho* (*Jar with Tiger Design in Underglaze Iron*), 17th century, H. 30 cm, Museum of Oriental Ceramics, Osaka

Ultimately, artisans of the 17th century surmounted the challenges of blue-and-white porcelain production through the adoption of the vibrant and daring production of porcelain with underglaze iron decoration.

Kiln Construction and Firing Techniques

The 17th-century government kilns underwent significant evolution from their 16th-century predecessors, notably with the introduction of multiple-chamber kilns. In contrast to the single-chamber kilns of the 15th century (Figure 6), those of the 16th century and beyond featured an increased number of firing columns. This adjustment served to enhance kiln stability by preventing collapse and prolong the duration of firing within the firing chamber. During the 17th century, the number of firing columns was further augmented to two or three, with their height reduced to no more than one-third of the kiln's overall height. Moreover, partition walls were constructed atop these columns, extending to the kiln ceiling, effectively segmenting the kiln into compartments. This innovation facilitated more efficient heat distribution and airflow within the kiln. The flames could ascend from the kiln floor to the ceiling, strike the walls, circulate, and then progress to the next chamber, resulting in an efficient half-inverted flame configuration (Bang 2022, 510–15).

Figure 6. Kiln Site in Hakbong-ri, Gongju, 15th century

Interestingly, these advancements initially manifested in local kilns. For instance, the kiln site in Daedo-ri, Jangseong, believed to be one of the earliest 17th-century kilns (Mokpo National University Museum and Jangseong-gun 1995), spans approximately 23.5 meters in length and 2.8 meters in width (Figure 7). It features four firing chambers, one furnace, and four firing columns. Notably, the last chamber, designated for biscuit firing, is the widest,

Figure 7. Kiln Site in Daedo-ri, Jangseong, 17th century

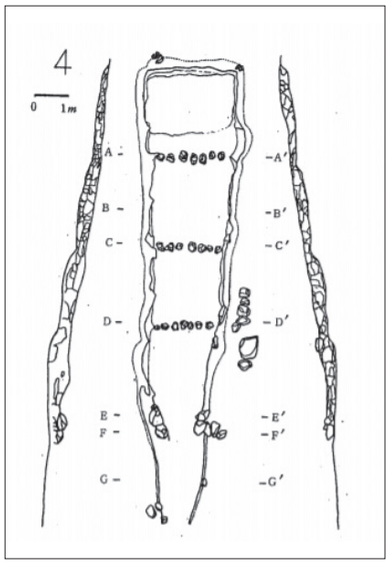

Figure 8. Kiln Site in Hugok-ri, Seungju, 17th century

boasting a nearly horizontal slope and a maximum width of 3 meters. It also shows some, albeit incomplete, partition walls, which are essential for the formation of a kiln for half-inverted flame. In general, the columns alone would have limited effect in supporting the roof arch or effectively dispersing the flames. Hence, the inclusion of walls is imperative for optimal kiln operation. In this regard, the Daedo-ri, Jangseong kiln stands as a pivotal point bridging the early and late Joseon periods due to its incorporation of walls. However, the origin of this kiln structure—whether indigenous or influenced externally—remains uncertain.

From the late 17th century onwards, a notable change occurred in the floor shape of kilns, transitioning to a ladder-like structure from the furnace to the chimneys. This modification aimed to boost the firing chamber's capacity, consequently facilitating increased production, particularly by maximizing the area of the final chamber and thus enhancing biscuit firing capacity (Chonnam National University Museum 1988; Bang 2004). This transition to a ladder shape was first noted in local kilns, exemplified by the kiln site in Hugok-ri, Seungju (Figure 8).

Excavated sites of the 17th-century government kilns include Seondong-ri, Songjeong-ri, and Sindae-ri. At Seondong-ri in Gwangju, Kiln Site No. 3-b features a half-inverted flame and terraced structure dating back to the 1640s, characterized by a low floor slope and high threshold in the firing chamber (Figure 9). This kiln design, proven effective in local kilns, was adopted for government use. Meanwhile, Kiln Site No. 5 from the 1650s in Songjeong-dong demonstrates chambers that progressively widen from the entrance to the chimney: the first chamber measures 1.8 meters, the second 2.1 meters, and the third approximately 2.5 meters (Figure 10). Each compartment of this multi-chamber kiln has a terraced structure with nearly vertical thresholds, although the floor slope ranges from 10 to 15 degrees (Joseon Gwanyo Museum and Gwangju-si 2008).

Figure 9. Kiln Site No. 3-b, in Seondong-ri, Gwangju, the 1640s

Figure 10. Kiln Site No. 5. in Songjeong-dong, the 1650s

The development of multi-chamber kilns, which began in local provinces in the 17th century, was eventually adopted by government kilns. This evolution was driven by local potters who, despite challenging conditions, continually experimented with and refined their kiln designs.

Potters Abducted to Japan

Abduction and Forced Migration

During the first Japanese invasion, known as the Imjin War (1592–1596), and the subsequent Jeongyu jaeran (1597–1598), Japanese forces devastated Korean territories, killing many and taking numerous Korean prisoners. Among these captives were skilled potters. Initially, these artisans were dispersed across various regions of Japan, where they continued their craft by producing Korean-style pottery. Over time, they were also commissioned to create vessels in Japanese styles. The impetus for their abduction is detailed in an administrative document issued by Toyotomi Hideyoshi 朱印状 (Figure 11), which instructed Nabeshima Naoshige 鍋島直茂 to capture artisans skilled in the fine arts and needlework from Joseon.[38] This indicates that skilled craftsmen were specifically targeted for abduction during these conflicts.

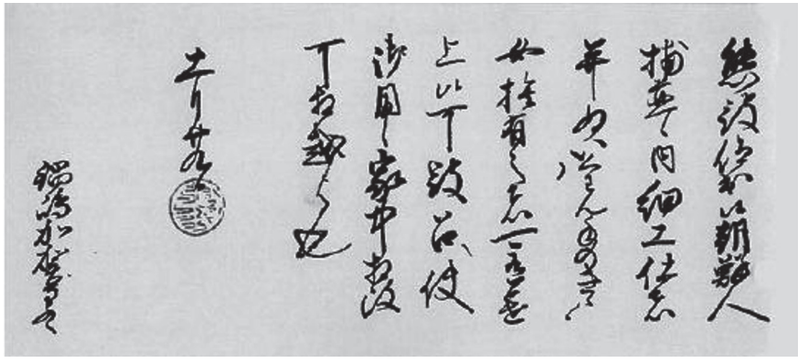

Figure 11. Administrative Document by Toyotomi Hideyoshi

However, it is difficult to conclude that all were abducted, as some may have acted as spies for Japan during the war.[39] Records suggest that others were either forcibly relocated (Kim 2017, 55–69) or moved voluntarily. A notable example is Yi Sampyeong 李参平, the most celebrated Joseon potter in the

38 This document is currently held at Tenshukaku 天守閣 of Osaka Castle, Japan.

39 *Seonjo sillok*, Vol. 39, Seonjo, Year 26, Month 6, Day 12. The original text is as follows: "備邊司啓曰伏見接伴官徐渻狀啓, 忠州砂器匠韓莫同爲倭作, 窺覘天兵, 極爲兇惡. 卽斬梟示 上從之."

Figure 12. Izumiyama White Clay Mine in Japan

Figure 13. Mishima Karatsu Tea Bowl

history of Arita. He is credited with discovering white clay deposits (Bang 2003) and producing the first white porcelain in Japan. According to the Taku family documents 多久家文書, he followed Nabeshima Naoshige to Japan and settled there.[40] His family records 金ヶ江家文書 indicate that he originally came from the Geum River 金江 area in Korea (Yoshinaga 2002, 14), and adopted the Japanese name Kanagae Sanbē 金ヶ江三兵衛, also known as Sanbei 參平 or Sanbei 三平. It is documented that he moved with 18 other potters to Midarebashi 亂橋 (currently Midaibashi 三代橋) in Arita in 1616, where he discovered a source of porcelain raw material at Izumiyama 泉山 (Figure 12). He established a kiln in Tengudani 天狗谷 near the Shiragawa 白川, taught his descendants and others the art of porcelain painting and crafting, leading to the prosperity of the area and attracting learners from across Japan.

Hence, the relocation of Korean potters to Japan during the Imjin War should be viewed as a combination of abduction and forced migration.

Places of Birth and Settlement of Joseon Potters

Joseon potters who were abducted to Japan during and after the Imjin War were resettled in various regions, primarily in Kyushu (Nagatake 1981, 126–28). Details about the potters' hometowns in Korea or the locations of their

40 For related research, see Tōkyō daigaku shiryō hensansho kyōdō riyō kyōdō kenkyū kyoten tokutei kyōdō kenkyū 2015.

abduction are only found in Japanese records. The following is a summary of the abduction and resettlement areas of these Korean artisans in Japan (Jeong 1998, 94-104).

Table 1. Major Joseon Potters Who Migrated to Japan (listed alphabetically)

Name	Abductor (abduction area)	Settlement	Main pottery productions
Baek Paseon	Fukami family (Gimhae)	Taku/Arita	Arita ware (blue-and-white porcelain)
Bak Pyeongui	Shimazu Yoshihiro (Namwon)	Naeshirogawa	Satsuma ware (pottery in iron or white glaze)
Geogwan	Imamura Yajibē (Ungcheon)	Hirado /Mikawachi	Mikawachi ware (pottery in ash glaze, *buncheong* ware, and celadon)
Jong Chagwan Chagwan	Ungcheon (present-day Changwon)	Hizen	Mikawachi ware (pottery in ash glaze, *buncheong* ware, and celadon)
Kim Hae	Shimazu Yoshihiro (Goryeong)	Hioki /Kagoshima	Satsuma ware (pottery in iron or white glaze)
Palsan	Kuroda Nagamasa (Goryeong)	Fukuoka Prefecture	Takatori ware (pottery in ash glaze or iron glaze)
Sim Danggil	Shimazu Yoshihiro (Namwon)	Naeshirogawa	Satsuma ware (pottery in iron or white glaze)
Ttochil	Nakazato Matashichi (Ulju County)	Karatsu/Arita	Karatsu ware (pottery in iron glaze and *buncheong* ware)
Yeongnyeo (Slave of Goryeo)	Nakazato Family (Ulsan)	Imari/Mikawachi	Mikawachi ware (pottery in ash glaze, *buncheong* ware, and celadon)
Yi Jakgwang	Mori Terumoto (Jinju)	Haki	Haki ware (pottery, *buncheong* tea bowls)
Yi Sampyeong	Taku (Gongju)	Taku/Arita	Arita ware (blue-and-white porcelain)

The table above illustrates the transportation of Korean potters to Japan by individual warlords at the time and specifies which warlords were responsible for their transportation. It also outlines the movement of these potters within Japan, influenced by the fate of the lords who brought them and the administrative convenience of efficient management. Geographically, with the exception of Haki, they were primarily concentrated in Kyushu. While some potters settled in one location, others, such as the families of Yi Sampyeong and Sim Sugwan, relocated from city to city or region to region depending on the circumstances of the lords who brought them (Bang 2017). Moreover, disparities in settlement times among potters are evident, exemplified by Kim Hae's early establishment in Japan during the Imjin War, predating the settlements of Bak Pyeongui and Sim Sugwan (Katayama 2018).[41]

However, the origin or abduction locations of some potters raise questions. For instance, Yi Sampyeong's purported hometown is said to be in the Geum River basin in South Chungcheong Province (Yun 1994, 36). This assertion stems from the Geumgang Family Document, which states, "Sampyeong was originally from a village near Geum River 金江, so his Japanese name was Kanagae Sanbē 金ヶ江三兵衛." However, the Chinese characters for the Geum River in South Chungcheong Province are "錦江," not "金江." Consequently, it is challenging to affirm his identity as a Joseon potter from South Chungcheong Province.

The situation is similar for Sim Danggil, an ancestor of Sim Sugwan (Bang 2017; Yamashita 2008, 195–205). Confirming his hometown or the place of his capture as Namwon is challenging, given its distance from the invasion route of the Japanese troops led by Kagoshima Shimazu and the absence of records of the Cheongsong Sim family, the primary branch of the Sim Sugwan's family, residing in Namwon at that time.[42]

Transmission of Pottery Production Technology

The dissemination of ceramic production techniques by Joseon potters amid the extraordinary and tumultuous circumstances of the Imjin War stands as an unparalleled occurrence in world history. A significant factor contributing to this transmission appears to have been the Japanese leadership's deliberate efforts to recruit skilled artisans, as evidenced in Toyotomi Hideyoshi's aforementioned document.[43] Additionally, there existed a demand for Joseon ceramics in Japan, particularly for prized Joseon tea bowls. During this period, the tea ceremony had gained widespread popularity in Japan following the Muromachi period (Hayashiya, Yokoi, and Tadao 1971; Jo 2007). This is exemplified by Sen no

41 *Kagoshima-ken shi* (*History of Kagoshima Prefecture* 鹿児島県史), 2-ken, dai 4-sestsu, Tōgei 陶芸, jō 条. The original text is as follows: "In the 4th year of the Bunroku era, the potter Kim Hae followed Shimazu Yoshihiro to Kaminokawa of Ichirai and started to make ceramics in Kurino" 文禄4年に陶工金海が島津義弘に伴われ市来の神之川に来り, ついで栗野で焼物を始めた.

42 The news article on the Sim's posterity is available at https://www.seoul.co.kr/news/newsView.php?id=20220711024011.

43 Toyotomi Hideyoshi's administrative document, known as 朱印状 (housed at Osaka Castle), dated 1593, instructs Nabeshima Naoshige to procure craftsmen, suggesting a substantial likelihood of the forced recruitment of potters during the conflict.

Rikyū 千利休, Toyotomi Hideyoshi's confidant and one of Japan's foremost tea ceremony masters, who frequently referenced Goryeo tea ware in his accounts of the tea ceremony (*chakaiki* 茶会記).[44] The Japanese desire for these ceramics seemingly motivated Korean potters brought to Japan to focus primarily on the production of Goryeo tea bowls (Figure 13).

Moreover, Japan, then in the stage of producing earthenware, had a strong desire to master the production of white porcelain, a craft demanding advanced technology. It is plausible that they leveraged the expertise of Joseon potters, particularly those experienced in white porcelain production, as primary conduits for technology transfer. During this period, Japan relied on imported porcelain from Goryeo and China, or Setoyaki pottery, an imitation of Chinese porcelain, to meet the demand for porcelain (Figure 14).

Figure 14. Setoyaki Plum Bottle

Figure 15. Route of Abduction for Joseon Artisans to Kyushu, Japan

44 In Japanese tea ceremony texts, Goryeo tea bowl ware first appear in the *Sanetaka kōki* 実隆公記 in 1506 and the *Matsuya kaiki* 松屋会記 in 1537. After the 1580s, the prevalence of Goryeo tea bowl ware exceeded that of Chinese origin. The *Yamanoue Sōji ki* (*Matsuya Family's Records of Tea Gatherings* 山上宗二記), written in 1588 by Yamanoue Sōji 山上宗二, a disciple of Sen no Riyū 千利休, focuses on the *Jūkō isshi mokuroku* (*Jūkō One Page List* 珠光一紙目録), a catalog detailing the secret transmissions of the tea ceremony from Jūkō to his disciples.

Furthermore, Japan had already amassed significant quantities of Goryeo celadon and *buncheong* ware, alongside smaller quantities of gray and white porcelain, between the 14th and 16th centuries (Kim 2023), which have been excavated across the nation. With its reliance on imported porcelain during this period, Japan eventually found the need to develop domestic porcelain production as the imported supply became inconsistent due to internal circumstances in China and Joseon. Concurrently, amid the war, Korean potters were forcibly relocated and settled in the Kyushu region (Figure 15), facilitating the transfer of technology and the establishment of a new phase in Japan's ceramic industry.

Certainly, economic motives for maintaining technological monopolies also seem to have influenced the Japanese government's actions. Officially establishing Korean potter villages (Katayama 2005) and enforcing restrictions on contact with non-Koreans were measures aimed at preserving Korean ceramic techniques. For instance, the intentional establishment of the Nabeshima kiln village in Imari Okawachiyama 大川内山, situated in a remote location, appears to have been orchestrated by the lord to prevent the leakage of technology, safeguarding the commercial interests of the region.

Meanwhile, the dissemination of technology by Korean potters within Japan exhibited regional variations. For instance, in Arita, the identification of clay deposits suitable for white porcelain by Yi Sampyeong served as a pivotal catalyst in Japanese porcelain production (Nakajima 1985, 515–16). Conversely, regions outside Arita predominantly focused on low-quality earthenware and *buncheong* ceramics, with tea utensils being prevalent (Katayama 1998). In the case of Satsuma, the absence of high-quality white clay posed raw material limitations, hindering the production of white porcelain (Fukaminato 2000, 121–24; 2000, 129).

Change in Status of Joseon Potters

The status of Korean potters, who were either abducted or forcibly relocated to Japan, underwent changes based on their ceramic production expertise and responsibilities (Bang 2017). For instance, in 1598, an estimated eighty Korean potters from approximately twenty-two different family names are believed to have initially arrived in the Naeshirogawa area of the Satsuma Domain 薩摩藩 in Kagoshima. *Chiri sankō* (*Research on Geography* 地理纂考) documents that

among these abducted Koreans, some possessed exceptional ceramic skills. Among them, such as those with the surnames Ahn and Jang, migrated to the technologically underdeveloped Ryūkyū Kingdom 琉球國 to impart their expertise (Noh 2014).

In 1663, the domain lord Shimazu Mitsuhisa 島津光久 (1638–1687) resettled the descendants of the abducted Koreans residing in Kōrai-chō 高麗町 in Kagoshima to Naeshirogawa, offering them housing and relocation assistance.[45] In 1676, stringent regulations were enforced, prohibiting Koreans in Naeshirogawa from engaging in relationships with Japanese from outside regions, with individuals from other areas requiring permission before entering Naeshirogawa.[46]

By 1684, a Korean descendant was appointed as *shōya* 庄屋, the village head responsible for administrative duties in Naeshirogawa, while two officials were tasked with overseeing ceramic craftsmanship management.[47] Consequently, Naeshirogawa established a stable and independent administrative system, predominantly led by Koreans under direct domain control, laying the groundwork for the stable development of the ceramic industry.[48]

Meanwhile, Bak Pyeongui, renowned for his exceptional ceramic skills, established a kiln in Naeshirogawa, Hioki-gun 日置郡, in 1598, under the order of Shimazu Yoshihiro of the Satsuma Domain.[49] By 1603, he achieved success

45 For more details, see *Naeshirogawa yuraiki* (*Records on the Origins of Naeshirogawa* 苗代川由來記). The original text is as follows: "In the 3rd year of the Kanbun era, people of Korean heritage were ordered to move to Kōrai-chō. When the people who had moved to Kōrai-chō following these orders expressed difficulty [living there], the 83 people there were allowed to build houses in 83 sites, dig three wells, and were bestowed silver..." 寛文三卯年, 鹿兒島高麗町江被召置候朝鮮筋目の者迄, 一所に罷移可申旨被仰付候処. 高麗町江罷居候者共は御訴申出, 爰許罷居候者家内八拾三人居屋敷八拾三ヶ所被成下, 且又御引料銀迄被下罷移候, 只(且か)井戸三ツ御掘被下, [下略].

46 *Naeshirogawa shiryō* (*Naeshirogawa Material* 苗代川資料), "Naeshirogawa yuraiki" (Origins of Naeshirogawa 苗代川由來記), 608; 629.

47 *Naeshirogawa shiryō* (*Naeshirogawa Material* 苗代川資料), "Naeshirogawa yuraiki" (Origins of Naeshirogawa 苗代川由來記), 613–14; 634–35.

48 *Naeshirogawa shiryō* (*Naeshirogawa Material* 苗代川資料), "Naeshirogawa yuraiki" (Origins of Naeshirogawa 苗代川由來記), 615; 635–36; 638.

49 Tōkyō daigaku shiryō hensansho 1953, Entry of 9th year of Keichō 慶長 era, third lunar month. The original text is as follows: "Shimazu Yoshihiro orders naturalized Korean Bak Pyeongui to build a kiln in Naeshirogawa village, Hioki, and encourages him to continue to make ceramics" 島津義弘, 帰化朝鮮人朴平意等に命じて, 日置郡苗代川村に窯を築かしめ, 相継ぎて製陶の事を奨励す.

in ceramic production.[50] Honored with the name Seizaemon 清左衛門, he was appointed as *shōya* in Naeshirogawa.[51] He succumbed to illness at the age of 65 in 1624. Nonetheless, his descendants continued pottery production, preserving the family legacy under the domain's command.[52]

Similarly, in Arita, Yi Sampyeong's role in discovering white clay mines led to his descendants receiving land grants and mining rights for magnetite mines across generations (Imaizumi 1980, 41). He also assumed the position of administrator in the Ishiba 石場 area, overseeing approximately 150 Korean potters (Kim 1988, 9). With a solid foundation for his livelihood established, Yi Sampyeong passed away at the age of 75 in his home in Kamishirakawa 上白川 in 1653.

Conclusion

The 17th century brought immense challenges for Korean potters. Amidst two major wars and frequent natural disasters, the socio-economic landscape became dire, disrupting ceramic production at the government kilns. Tragically, some artisans faced starvation. Compounding these woes, the transition from the Ming to the Qing dynasties disrupted the supply of raw materials from China, rendering the production of blue-and-white porcelain unfeasible. As an alternative solution, porcelain with underglaze iron, utilizing iron-based pigments, emerged as a substitute. Additionally, the Imjin War resulted in the abduction of local potters, who were coerced into permanent exile in Japan, further exacerbating the hardships faced by the Korean pottery community.

50 For more details see Vol. 2, No. 2 of *Dai Nihon shiryō* (*Chronological Source Books of Japanese History* 大日本史料), the 3rd lunar month of the 9th year of Keichō era. The original text is as follows: "In the 3rd year of the Keichō era, he began to create pottery in Kushikino of Hioki, Satsuma, but he was unable to succeed. Six years later, he moved to Naeshirogawa and tried again but did not succeed…" 前略]慶長三年創陶于薩摩国日置郡串木野郷, 而不得其意. 後六年移苗代川, 更試之, 而不得其意. [下略].

51 *Kagoshima ken shi* (*Kagoshima Prefecture History* 鹿兒島県史), Vol. 2, Chapter 4, "Pottery Kilns," 538–41.

52 For more details see Vol. 2, No. 2 of *Dai Nihon shiryō* (*Chronological Source Books of Japanese History* 大日本史料), "Records of the History of Local Ceramics and Traditions of Potters" 府縣陶器沿革陶工傳統誌, Entry 149. The original text is as follows:"On the first day of the fifth month of the 1st year of Kan'ei era at the age of 65, Bak Pyeongui passed away. His descendants devoted themselves to the work of pottery, and generation after generation have earned the name Pyeongui" 朴平意, 寛永元年五月一日卒ス, 歳六十五, 子孫相續キ, 今尚ホ陶業ニ従事ス, 而ツテ代代平意ヲ以テ名トスルモノハ.

However, these challenges acted as a catalyst for the restructuring of the government kiln system, technological advancements, and changes in production methods. Initiatives were undertaken to ensure the allocation of cloth taxes for artisans, and the clandestine private production of government potters was effectively legitimized to optimize profitability for artisans. The stringent system of obligatory labor, whereby artisans were annually assigned, transitioned into a system allowing artisans to choose their own employment opportunities. Efforts were made to diversify the sources of raw materials to secure high-quality clay. In addition, the issues concerning the mobility of kilns, which had previously burdened artisans, appeared, leading to the proposal of the concept of fixed kilns.

In addition to these developments, there were advancements in porcelain production techniques and shifts in stylistic preferences. Significant endeavors were undertaken to refine the adept application of iron-red pigments, substituting for cobalt blue. This refinement is evident in the patterns of porcelain in underglaze iron crafted in local kilns, characterized by simple yet natural and bold designs. Kiln construction techniques also progressed, with the emergence of more sophisticated kilns featuring walls erected atop internal pillars for enhanced firing efficiency. Moreover, a kiln design featuring a chamber in a ladder shape, wherein the floor widens toward the chimney, originated from local kilns, subsequently serving as the prototype for government-operated kilns.

Meanwhile, artisans who were kidnapped or forcibly relocated to Japan found themselves dispersed throughout Kyushu, confronting unfamiliar surroundings. However, rather than yielding to these adversities, they acclimated to local circumstances and, capitalizing on their superior craftsmanship compared to Japanese artisans, devoted themselves to the creation of Joseon-style ceramics and tea bowl ware. Notably, artisans such as Yi Sampyeong pioneered Japan's inaugural porcelain production by uncovering new clay deposits. Additionally, the Sim Sugwan family of Satsuma upheld ceramic production across generations, emerging as a prominent family in the field of Japanese ceramics.

In the end, Korean potters of the 17th century encountered formidable obstacles both at home and in Japan, yet they met them with remarkable diligence and ingenuity.

Translated by Ja Kyung LEE

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Abstract

This study delves into the adversities and significant obstacles encountered by Korean potters during the 17th century and their endeavors to surmount these challenges by enhancing the government kiln system and refining pottery production techniques, drawing insights from an analysis of historical records and artifacts. Furthermore, it investigates the adaptation and resettlement experiences of Korean potters who were abducted to Japan. As part of the restructuring of the government kiln system aimed to improve the conditions of artisans, initiatives were undertaken to secure cloth taxes. Additionally, the system of mandatory labor shifted from mandatory labor assignments to artisans choosing their employment in the government kilns. Measures were taken to broaden access to high-quality clay by expanding raw material sources. Challenges related to kiln mobility, which encumbered artisans, prompted the proposal of fixed kiln establishments. Regarding production techniques, artisans exerted significant efforts to master the adept application of iron-red pigment, known as *seokganju*, as a substitute for cobalt blue. This endeavor resulted in the emergence of simple yet naturally bold designs evident in the patterns of porcelain crafted in local kilns using underglaze iron. Kiln construction techniques advanced with the introduction of more sophisticated kilns, featuring inner walls and pillars to enhance firing processes. Moreover, a kiln design characterized by a widened base ascending toward the chimney in a ladder-like formation, initially developed in local kilns, served as the prototype for government-operated kilns. Meanwhile, artisans who were abducted or forcibly relocated to Japan acclimated to various local environments across Kyushu. Leveraging their advanced skills compared to Japanese artisans, they focused on crafting ceramics and tea bowl ware in the Joseon style. Notably, artisans such as Yi Sampyeong played a pivotal role in Japan's inaugural porcelain production by discovering new clay deposits. Families like the Satsuma-based Sim Sugwan clan persisted in the ceramic production across generations, establishing themselves as prominent figures in the Japanese ceramic industry. Although the 17th century presented formidable obstacles to Korean potters, they met these challenges with remarkable diligence and ingenuity, pioneering new styles and technological advancements.

Keywords: 17th century, Joseon porcelain, the branch kin of Saongwon, potters, abducted Korean potters, the Imjin War, white porcelain in underglaze iron, production techniques

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