

Museum Guidebook



Arita History and Folklore Museum East
Arita Excavated Ceramic Museum

有田町歴史民俗資料館東館・有田焼参考館 展示ガイドブック 英語版

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Introduction: Natural Features and History of Arita Sarayama

Situated in the western part of Saga Prefecture, the town of Arita is surrounded by a rich and scenic natural landscape. Sites dating from during and after the palaeolithic era have been found in the western part of the town, where agriculture eventually developed as the principal industry. By contrast, kilns and ceramic production played the lead role in the eastern part of the town, particularly in modern times. Japan's first porcelain products were created here, as was Arita ware, a type of porcelain that would go on to earn worldwide renown.

The history of Arita Sarayama ('Sarayama' means a ceramic-producing area) is intertwined with ceramics, and the story of both begins with Korean potters who were brought back to Japan during the invasion of the Korean Peninsula by Toyotomi Hideyoshi from 1592 to 1598, an event known in Japan as the Bunroku Keichō campaign. In the easternmost part of Arita, there are traditional houses built along the long and narrow valley whose layout is often compared to 'the bed of an eel'. The area is known as Uchiyama district and was designated an Important Preservation Area for Groups of Traditional Buildings by the Japanese government in 1991. Following the discovery of rich deposits of porcelain stone at the present-day Izumiyama quarry, the Saga domain developed the area to specialise in porcelain, with the goal of fostering the industrialisation of porcelain production. It still retains the ambience of those times today.

Situated at the eastern edge of Uchiyama adjacent to Izumiyama quarry, the Arita History and Folklore Museum East features objects related to Arita's ceramic industry. The Arita Excavated Ceramic Museum, which shares the same site, offers a series of chronologically organised objects showcasing sherds excavated from the sites of former kilns and other locations in Arita. This guidebook introduces the permanent exhibitions of both museums.

We invite you to take this opportunity to explore the history of the town of Arita, which continues to enjoy renown in Japan and abroad for its ceramics.



Izumiyama quarry is visible to the right. The green-roofed building is the Arita History and Folklore Museum East, while the adjacent grey-roofed building is the Arita Excavated Ceramic Museum.

Arita Ware during the Edo Period (1603-1868)

After succeeding in producing porcelain at the beginning of the 17th century, Arita saw its products spread throughout Japan and subsequently to distant lands like Southeast Asia and Europe. There are several reasons that the Hizen area, and in particular Arita, developed into Japan's largest porcelain-producing region. First, advanced technologies reached the area from continental Asia; it is blessed with local sources of porcelain stone and it located comparatively close to the city of Nagasaki, which was the only port in Japan engaged in overseas trade at the time. Additional reasons include the establishment of an efficient, sustained system of production through the progressive subdivision of the manufacturing process and a tendency on the part of individual domains to view porcelain production as an important commodity. This led them to attempt to keep secret the relevant technologies and carefully manage the supply of raw materials.

Glazes and Pigments

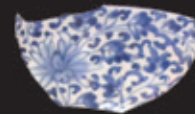
Glazes in a variety of colours along with pigments were applied to porcelain to create patterns and designs. Colours varied with the type and quantity of the metal ores they contained as well as the firing method (oxidisation or reduction) and the colour of the underlying clay.

During the Edo period, potters created porcelain in a variety of colours and designs using techniques and knowledge which had been mastered and passing down through practice and experience.

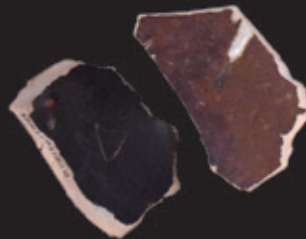
Cobalt blue glaze
Cobalt blue glaze is created by dissolving cobalt oxide (*gosu*) in glaze. The glaze is applied to bisque-fired porcelain bodies before main firing.



Underglaze cobalt blue
Designs were drawn with cobalt oxide (*gosu*) on bisque-fired bodies, which were then coated with a transparent glaze and fired.



Overglaze polychrome enamelling
Overglaze polychrome enamels were applied to glazed porcelain bodies after the main firing, and then the vessels were fired again at a lower temperature.



Iron glaze (left)

Iron content in an iron glaze turns brown or black when fired. Celadon glaze contains minuscule amounts of iron, which give fired products a blue-green or green colour.



Celadon glaze (right)



White porcelain

Bisque-fired bodies were covered with a transparent glaze and fired.

Glossary

Porcelain stone: This white stone composed of primarily kaolinite or sericite is used to create porcelain.

Kiji: The term '生地 (*kiji*)' refers to ceramic bodies that have been formed but not yet fired, while the term '素地 (*kiji*)' refers to bodies prior to the main firing or after the main firing but prior to overglaze enamel decoration.

Glaze: Glazes are used to create a glass-like coating on the surface of ceramic bodies.

Pigment: Similar to dyes, pigments are substances that impart colouration; differing from dyes, they do not dissolve in water or oil.

Gosu (cobalt oxide): *Gosu* is a mineral containing cobalt compounds used to decorate underglaze cobalt blue porcelain and to make cobalt blue glaze.

Kamayaki (ceramic producer): Ceramic producers known as *kamayaki* were responsible for porcelain production up to and including the main firing in climbing kilns during the Edo period.

Decorative techniques

A variety of techniques can be used to execute designs on ceramics, and craftspeople during the Edo period were no exception, utilising numerous methods. For example, painted designs which are the most typical form of decoration on Arita ware, included both hand painting and a variety of printing techniques employed at different times.



Production structures

Arita ware was the subject of both generous protection and rigorous management by the Saga domain. For example, the domain managed the number of craftspeople and benefited from a stable tax revenue by requiring workers to be licensed before they could participate in any of the industry's subdivided production processes. The segmentation of technology resulting from the strategic division of labour helped to prevent the overall technological infrastructure of the industry secret from outsiders.



Kamayaki nadaifuda (license for the production of ceramics) and associated licenses: *Saikufuda* (license for form-makers), *ekakifuda* (license for painters), *sokotorifuda* (license for reusing excess clay removed during the trimming process), and *mizuusutōrifuda* (license for carrying refined porcelain clay to workshops)

All would-be *kamayaki* had to acquire a *kamayaki nadaifuda* (license for the production of ceramics) as well as the associated licenses for each production process. At the same time, the craftspeople employed by the *kamayaki* had to be licensed for each process they performed. License-holders were required to pay a miscellaneous tax known as *unjōgin*.



Copy of a 1706 domain order

This historical document records the *unjōgin* (miscellaneous tax) for each *saikufuda* (license for form-makers) and other licenses issued in connection with *kamayaki nadaifuda* (license for the production of ceramics).

From Early Modern to Modern Times

From the Bakumatsu era (1853-1868) to the Meiji period (1868-1912), Arita embarked on a process of modernisation during which craftspeople struggled to adapt to a new era. The collapse of the Tokugawa shogunate's domain system forced artisans to take the initiative in creating new systems for their field, enabling Arita ware production to transition to an independent industry. The process required modernisation for not only technology, but also for every aspect of the industry's operations, including procurement, production, and distribution systems.

The resumption of Arita ware exports to Europe at the end of the Bakumatsu era encouraged encounters between traditional Arita ware and Western industrial technologies, triggering the technological modernisation of Arita ware.

Introduction of technology from Europe

Nōdomi Kaijirō and a number of others trained at the Elbogen (Loket) porcelain factory (in the present-day Czech Republic) during their visit to the Vienna World Exposition in 1873, studying modern ceramic technology and then bringing it back to Japan. Attendees from Japan observed Western technology and related equipment used at subsequent World Expositions. They went on to purchase ceramic manufacturing equipment and brought it back to Arita. Technology and knowledge obtained in this manner were incorporated into Arita ware through a process of trial and error.

Changes in production structures

Families like the Hisatomi and Tashiro launched trading company-like ventures during the Bakumatsu era as the Tokugawa shogunate domain system weakened. Production extended beyond the domain framework as the families had multiple suppliers use their brand name (mark) and sourced undecorated porcelain from Mikawachi in the neighbouring Hirado domain. During the Meiji period, when domain-led management of the industry crumbled, *kamayaki* (ceramic producers) established the Tōgyōmeiyaku, a system of ceramic industry regulations governing aspects of production such as the handling of Izumiya porcelain stone. In short, they adopted a corporate-style organisation.

Changes in raw materials



Izumiya porcelain stone
Discovered around 1630, porcelain stone from Izumiya in Arita was originally formed when rhyolite was exposed to hot water emanating from a hot spring.



Amakusa porcelain stone
Porcelain stone from Amakusa in Kumamoto Prefecture has fewer impurities and greater viscosity than Izumiya porcelain stone.

Gottfried Wagener

(1831-1892)



The German chemist Gottfried Wagener came to Japan in 1868 and visited Arita at the invitation of the Saga domain in 1870. Wagener served as a standard bearer for modern Japanese industry, offering instruction on numerous topics such as the use of coal kilns and artificial cobalt oxide. He exerted considerable influence on Arita ware production, as craftspeople up until this point had traditionally relied on individual experience.



Marks on Edo-period porcelain

Edo-period products bearing marks on the bottom or in the footring are copies or modifications of original Chinese marks, as potters as a rule did not add their own marks onto their work.



Pictured is a product (top) of the Hisatomi family, who resumed trade with the Netherlands in 1841, and a porcelain (bottom) from the Tashiro family, who obtained an exclusive export license from the Hisatomi family. The products bore marks like the Zōshuntei Sanpozō ('made by Zōshuntei Sanpo') and Hichōzan Shinpozō ('made by Hichōzan Shinpo').

During the Edo period, Izumiya porcelain stone was used exclusively as the raw material for Arita ware. However, during the Meiji period, producers began to use Amakusa porcelain stone that was transported a considerable distance from another prefecture. Widespread adoption of Amakusa porcelain stone, as can be seen today, was spurred by the discovery during the Taisho period (1912-1926) that the material was well suited to porcelain produced for export. In addition, Amakusa stone was found to be cheaper and easier to use than similar material from Izumiya, whose prices soared following the temporary cessation of quarrying due to periodic heavy rainfall.

Changes in pigments

Pigments (underglaze cobalt blue)

During the Edo period, natural cobalt oxide imported from China was used for the blue pigment in products made using underglaze cobalt blue designs. However, with the coming of the Meiji period, methods taught by Wagener led to the use of chemically refined cobalt. Although the process was initially characterised as a failure to properly employ the German chemist's techniques, producers gradually transitioned from *gosu* to the much more inexpensive artificial cobalt.



Underglaze cobalt blue using artificial cobalt



Underglaze cobalt blue using natural cobalt oxide (*gosu*)

Pigments (overglaze polychrome enamelling)

Overglaze polychrome enamelling during the Edo period was created by painting with pigments applied over the glaze. Research into underglaze decoration was carried out during the Bakumatsu era, but it took until the Meiji period for colours other than brown (greyish brown) to be perfected on advice from Wagener to yield *hongamanishiki* (underglaze polychrome colours). Western colourants that produced lustre much like that of an oil painting were also added to create refreshed overglaze pigments.



Left: Product with overglaze decoration
Right: Product with underglaze decoration



Changes in firing techniques

Arita ware from the Edo period was fired in firewood-fuelled climbing kilns that used a stepped linked chamber design. Climbing kilns, which had numerous firing chambers, were able to fire a large number of ceramics at once and were jointly operated by several producers. Multiple ownership imposed a disadvantage as it proved difficult to be flexible in approach and respond quickly to demand.

As a result, individual producers began to use single-chamber kilns during the Meiji period, and there was growing research into the adoption of coal kilns. Kiln structures underwent various changes as they were improved in response to new fuels such as oil and natural gas.



Model of a coal kiln

This wooden model, described as a rendition of 'Wagener's coal kiln', has two connected firing chambers. Unlike a climbing kiln, which burns fuel on the floor of the firing chamber, coal kilns used a fire grate-style structure in which heat and flames during the firing pass under the floor and through the firing chamber on their way to a smokestack.



Products of the Zōshuntei Hisatomi porcelain factory

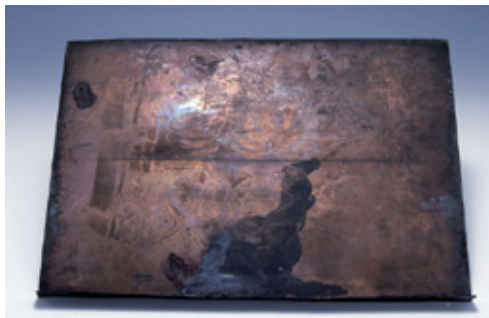
In 1915, Hisatomi Suekurō built a coal kiln using what at the time remained a prototype-stage design that was eventually adopted on a permanent basis for commercial production.

Changes in decorative techniques

Two of the most typical painting techniques used to execute designs on ceramics were hand painting and printing. During the Edo period, hand-painting was the most common decorative technique. Subdivision of labour in the hand-painting process made large-scale production possible. However, printing techniques gained increasing popularity with the start of the Meiji period as producers introduced methods such as *katagamizuri* (cut paper stencils) and copper plate transfer printing.



Koransha around 1911
(from the 'Saga Prefecture Photo Album')



Copper printing plate



Dish with a copperplate print design

In this method, paper on which a design had been printed with a copper plate using ceramic colourant was then applied to the surface of a vessel and moistened for the design to transfer to the ceramic body. In Arita, the use of this technique is believed to have started around 1886 to 1892.



Flower vase made using the *katagamizuri* technique

In this method, paper stencils were cut to depict the desired design and applied to a ceramic vessel. Colourant was then imprinted onto the vessel using a brush. The technique had been used in Arita from the end of the 17th century through to the first half of the 18th century, but entered into more general use during the Meiji period and became popular in porcelain-producing regions nationwide.

Arita Ware during Wartime

A substitute for metal

The increasingly long-lasting war led to a shortage of metal products throughout Japan, and the Japanese government adopted a policy of encouraging the production of substitutes for metal. As a result, ceramic-producing areas nationwide created ceramic replacements for metal objects.



Ceramic postbox

This postbox was produced as a sample by the Sagaken Yōgyōshikenjō (the current Saga Ceramics Research Laboratory)



Hand grenades

Made from porcelain, these hand grenades were made with or without glaze.



Ceramic food containers

Devised as a substitute for tin cans used in storing food, these containers were sealed by closing them with a gasket sandwiched between the rim and the lid. These containers were actually put into use.



Ceramic coins

Porcelain currency (ceramic coins) were produced just before the end of World War II. They were manufactured at three sites -- Kyoto, Seto, and Arita -- where branches of the Japan Mint were established. These coins were never actually in use.



Ceramic water bottle

This ceramic water bottle was made by the Imaemon kiln during World War II as a substitute for conventional metal containers. Even renowned kilns had to produce objects such as this example to support the war effort.

The munitions industry and the controlled economy

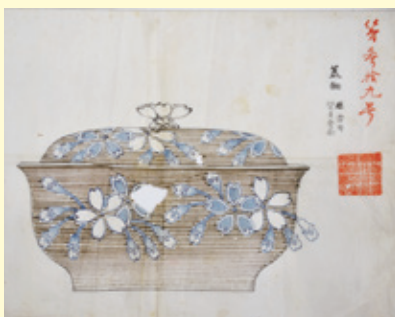
Arita's ceramic industry was brought under national control with the promulgation of the National Mobilisation Law in 1938, which imposed a ration system for ceramic raw materials and coal used as fuel for the kilns at the time. The following year saw the implementation of a price control ordinance that established a system of regulated prices and assigned each kiln a control number. However, the prices for artistic items (so-called *marugei*) and works with sophisticated techniques that needed to be preserved (*marugi*) were not regulated. In Arita, Matsumoto Haizan received the *marugei* designation, while Kakiemon kiln, Imaemon kiln, Koransha, Fukagawaseiji, Kawanami Kisaku, and Mitsumatsu Sōichi received the *marugi* designation.



An "Ari-31" stamp and a product displaying the stamp

Design Improvements and Vocational Education

Members of the delegation to the Vienna World Exposition in 1873 studied Western technology and transmitted it to Japan as they soon became aware that Japanese arts and crafts industries and workshops would need to implement design improvements if they were to compete with their Western counterparts. Japanese kilns subsequently sought to create exceptional designs for the World Expositions and the National Industrial Exhibitions. It became essential that vocational education in Japan be enhanced to create exceptional designs while refining technologies for producing them and passing associated skills on to a new generation of craftspeople. The philosophy of the vocational school Benschūgakusha, which was founded in 1881, became a key part of the foundation of the ceramic industry in Arita, and it has been inherited by today's craftspeople.



Designs for products to be exhibited at the Paris World Exposition in 1900 and 'Lidded container with cherry design in overglaze polychrome enamels'

The headquarters of the Saga Association for the Ceramic Paris International Exposition was created in Arita to prepare for the upcoming World Exposition, and talented craftspeople and designers were invited to offer guidance to exhibitors concerning designs and production methods.

This lidded container is the only extant example of a product created that matches a corresponding design.



Sketch by Nōdomi Kaijirō

This sketch was made by Nōdomi Kaijirō, who travelled to the Vienna World Exposition and contributed to the improvement of designs after returning to Japan, earning him recognition as the 'father of vocational education in Japan'.



Design by Kawanami Kisaku

This detailed design was created by Kawanami Kisaku, one of Benschūgakusha's first graduating members and a prominent Arita artist who was active from the Meiji to the early Showa periods.

'Large Dish with Arita Sarayama Craftspeople Design in Underglaze Cobalt Blue': Production Processes and Tools



This section introduces basic technologies used to produce Arita ware and the tools used in each of the production processes depicted on the 'Large dish with Arita Sarayama craftspeople design in underglaze cobalt blue' (Arita Ceramic Museum), an Important Cultural Property of Saga Prefecture (historic material) which was made around the time of the Tenpō period (1831-1844).

Mining of porcelain stone



This scene depicts the mining of porcelain stone from Izumiyama quarry. The building seen in the centre is the office that managed mining operations.

The process of producing porcelain began with the mining of porcelain stone to serve as raw material. Porcelain stone, a valuable resource, was strictly managed. The mining method changed from underground mining during the Edo period to open-cut mining beginning in modern times.



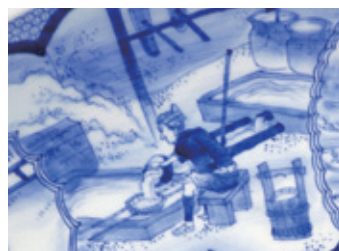
1. Pickaxe

Pickaxes were used to mine porcelain stone.

2. Ninyaatebo (pole carried on the shoulders)

Baskets containing porcelain stone were slung on poles carried on people's shoulders.

Clay preparation Elutriation



Top left: Porcelain stone is crushed in a water mortar shed. Such sheds were built in rivers because they made use of waterpower.

Top: Crushed porcelain stone undergoes elutriation. Water containing dissolved porcelain stone powder was ladled into a strainer in a process known as elutriation.

Left: Clay is kept in a storage area.

Mined porcelain stone was allowed to dry naturally for six to 12 months under the management of a craftsman known as a *kamayaki*. Once it had dried thoroughly, the porcelain stone was broken into fist-sized chunks and crushed by a water mortar (hammer mill). Next, the crushed porcelain stone was sifted and elutriated repeatedly for several dozen days. Then it was allowed to dry naturally and aged for several years in a clay storage area so that it gained viscosity, completing its transformation into clay.

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3. Supernatant scoop

This type of tool was used in place of a ladle. Precipitation was discarded, and only white supernatant was used.

Forming

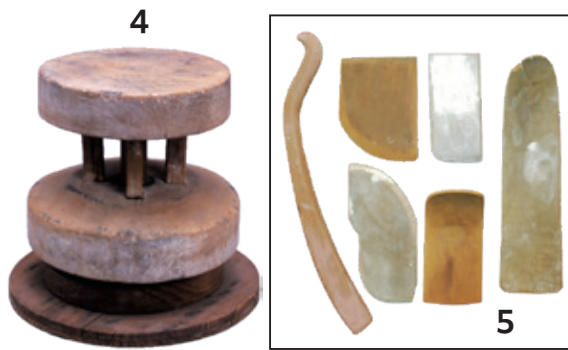


Next to the person responsible for spiral wedging of the clay (bottom) can be seen a person who is sitting in the working space for throwing and placing clay on a potter's wheel (top) as well as a person forming a bowl with a spatula (centre).



The bowl that is being thrown is in the process of being pressed with a mould to create a flower shape.

The shaping of ceramics is known as forming, and the task was carried out by a worker known as a form-maker. Various methods of forming include throwing, *katauchi seikei* (mould production using a wheel and an interior mould), and *kataoshi seikei* (mould production using a press mould). Today, slip casting, a technique in which clay slip is injected into a limestone mould, is also used.



4. Kick-wheel

This wheel for forming vessels was operated by a kicking motion with the foot.

5. Spatulas

Different spatulas were used during the throwing process depending on the desired shape.

6. Cutting string

String was used to remove the vessel from the wheel.

7. Harp cutting tool

This tool was used to cut off uneven portions of the rim during throwing.

8. "Dragon-fly" size gauge

This tool was used to check the diameter of vessels during the throwing process.

9. Pottery wheel for *katauchi seikei*

This wheel was used with the *katauchi seikei* technique (mould production using a wheel and an interior mould).

10. Paddle

This tool was used with the potter's wheel for the *katauchi seikei* technique.

11. Clay mould (for *katauchi* interior mould making process)

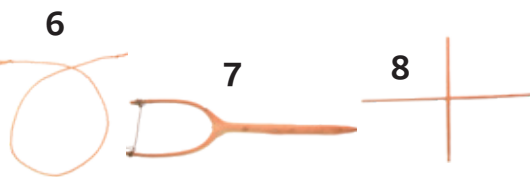
Moulds like this were placed on thrown vessels to give them the desired shape.

12. Clay mould (for *kataoshi* press mould making process)

Moulds like this were used when forming products by placing clay directly into a mould.

13. Wooden mould

Wooden moulds like this were used when forming products by pressing clay directly into a mould.



14. Trimming tools

These tools were used to trim formed and already dried ceramics in order to refine their shape.

15. Drying bat

Wooden boards and bats in different sizes and shapes are used for drying according to the size of products, in general boards were used for smaller objects and bats for larger ones.

Bisque firing



This scene depicts a kiln being loaded for bisque firing.

After the ceramics have dried, fully formed products were fired at a low temperature, about 900°C, in the workshop's bisque firing chamber. The bisque firing process strengthens the clay by allowing water to evaporate and absorbency to increase so that bisque-fired ceramic absorbs cobalt blue (*gosu*) and glazes more readily. It also helps impurities to burn off, giving the surface a more uniform colour during main firing, and reduces the overall shrinkage of the body, which helps to keep glaze from separating from the ceramic body and other types of damage.

Underglaze painting



Craftspeople are shown painting designs as they face a wall of bright windows.

Underglaze decoration was applied to bisque-fired products with cobalt blue (*gosu*). Underglaze painting refers to decoration executed beneath the glaze. The craftspeople responsible for underglaze painting were known as *ekaki*, and the process consisted of two tasks: drawing lines and outlines (*sengaki*) and filling in the outlined areas (*dami*).



16. Grindstone

This tool was used to grind cobalt blue (*gosu*).

17. Ushi stand

Stands like this were used to hold products such as large vases so that the craftspeople could paint them.

18. Line drawing brushes

These brushes, whose tips consisted of the fur or hair of various animals such as goats or weasels, were used to draw the outlines of designs onto the ceramic body.

19. Shading brush

Brushes whose tips were made from the hair of a deer's tails were used to fill the inside or outside areas of the outlined designs.

20. Mortar and pestle

Together, these tools were used to grind cobalt blue (*gosu*) that had been first ground with a grindstone into an even finer consistency.

21. Wheel for drawing

This wheel was used to draw circular lines on ceramics.

Glazing



Vessels are being glazed next to a child who uses a wing broom to dust them. The glazed products have been placed in rows on a drying board, and can be seen drying in the background.

Once the underglaze decorating process was complete, products were then glazed. After application, glazes are initially opaque, but the firing process causes the glaze to vitrify and become transparent. Prior to firing, underglaze decoration was temporarily concealed by the glaze.



22. Bowl (for glazing)

Bowls like this were used to apply glaze to products once the underglaze decorative process was complete. The bowl was filled with glaze, and products to be glazed were submerged in it.

Main firing



Climbing kilns had several firing chambers in which fires were lit one at a time, starting with the bottom. As a result, smoke was only present in the kiln in levels above the chambers with active fires in them.



Since Japanese red pine burns more readily and gives off less ash if its bark has been removed, workers carefully removed the bark with knives. The bark was apparently used as fuel in domestic settings.

The main firing marked the last step in the ceramic production process. Today, ceramic businesses have their own kilns for the main firing, but until modern times, climbing kilns built in the mountains were shared by multiple workshops.

The kilns were fuelled by Japanese red pine firewood, burned at high temperatures (around 1,300°C) by specialised workers called *kamataki*. The main firing process took anywhere from several days to several dozen, depending on the size of the kiln.

**23. Saggar**

This box-like tool, which was used when loading ceramics into the kilns, kept the product placed inside it from being covered with ash. It was primarily used for premium products.

24. Hama clay disc**25. Tochin clay stand**

These tools were used when loading ceramics into kilns. Ceramics were placed on a clay disc, which was then placed on a clay stand to efficiently pack the ceramics into the kiln.

Meiji-period climbing kiln (1/10 scale model)

Climbing kilns, which consisted of a series of several to several dozen firing chambers, were built on the sides of mountains. The lowermost chamber, known as a firebox, was employed to raise the kiln's temperature in advance of the firing and dry it out; it was not ordinarily loaded with ceramics.

The second and higher chambers were used to fire ceramics. One of the side walls in each chamber has a doorway through which firewood could be loaded. Each firing chamber was divided into a fire bed in which firewood was burned and a kiln floor where ceramics were placed for firing. The two areas were separated by a partition known as a *hidokozakai*.

Walls between chambers incorporated flue channels known as *onza-no-su*, allowing the flames and heat to move from lower levels to the higher levels in the kiln. A smokestack was not necessary as the entire climbing kiln fulfilled the role of a chimney. In most cases, climbing kilns were enclosed in sheds.

Overglaze painting

After the main firing, vessels could now be decorated with designs using variously coloured pigments. The process of overglaze decoration is known as *uwaetsuke*, or overglaze decoration as the designs are executed on top of the glaze; in Arita specifically, this process is also known as *akaetsuke*. During the Edo period, it was carried out by specialised overglaze enamel workshops. Craftspeople in these workshops were prohibited from also working as *kamayaki*, the recipe for the overglaze enamel process was a closely guarded secret.

**26. Brushes**

The range of brushes used included brushes for line drawing, brushes for shading, and brushes for in-filling outlined design.

27. Tsurube and shitamizuwan (brush rest and water bowl)

When not using a brush, craftspeople kept it in a *tsurube* (brush rest) and submerged it in a water-filled *shitamizuwan* (water bowl) so that the tip would not dry out.

28. Mortar and pestle

Together, these tools were used to mix paint and gelatine.

29. Mortar and pestle for overglaze enamel pigments**30. Mortar and pestle for grinding gold**

Together, these tools were used to grind overglaze pigments and gold.

31. Uma (small desk for painting)

This small desk was used for painting ceramics.

32. Gold scale

This scale was used to weigh gold for use in overglaze enamels.

Overglaze firing



These overglaze kilns were in use from the Meiji (1868-1912) to Showa (1925-1989) periods. (Preserved in the Arita History and Folklore Museum East)

Following overglaze enamel application, these ceramics were loaded into an overglaze kiln located in the overglaze enamel workshop and fired again at a temperature of about 800°C for between 10 and 20 hours.



25

25. Tiles and poles

These tools were employed for loading ceramics into overglaze kilns. Ceramics were placed on tiles which in turn were supported by poles to create three levels inside the kiln.

Inspection and shipment



This scene depicts workers inspecting the finished products inside a warehouse.

Finished ceramics were inspected for defects and the approved wares were then shipped onwards. Since it was generally forbidden for merchants from other domains to travel directly to Arita to purchase ceramics during the Edo period, ceramics were transported to Imari, where they were sold and shipped by sea to various destinations throughout Japan.



26

27

26. Small and large knives

These knives were used to cut straw during the packaging of ceramics.

27. Straw combing

This tool was used to comb straw when packaging ceramics.



28

28. Packing

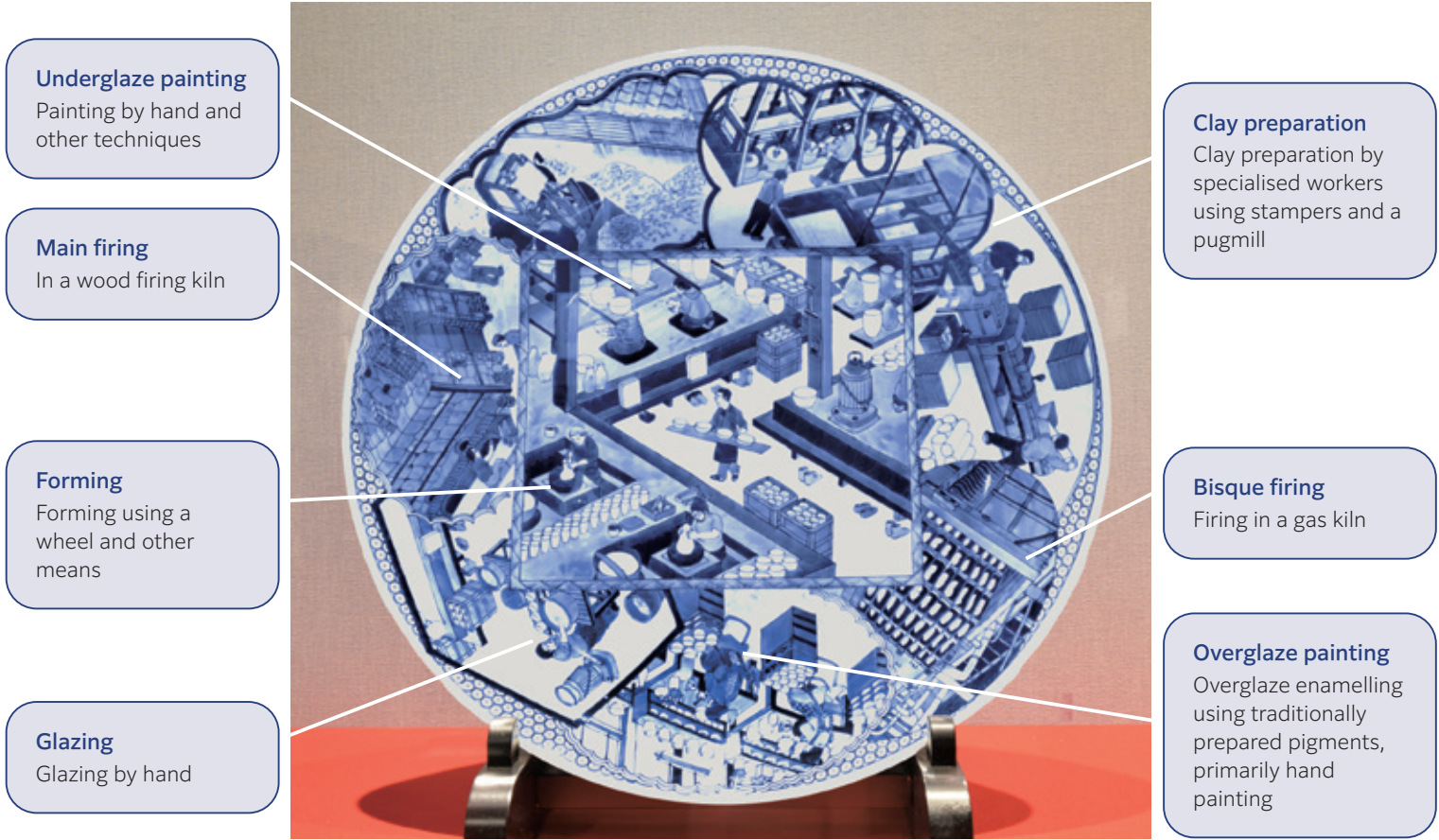
Ceramics were packaged using straw and other types of materials. Packing methods varied with each product.

'Heisei-era Large Dish with Arita Sarayama Craftspeople Design'

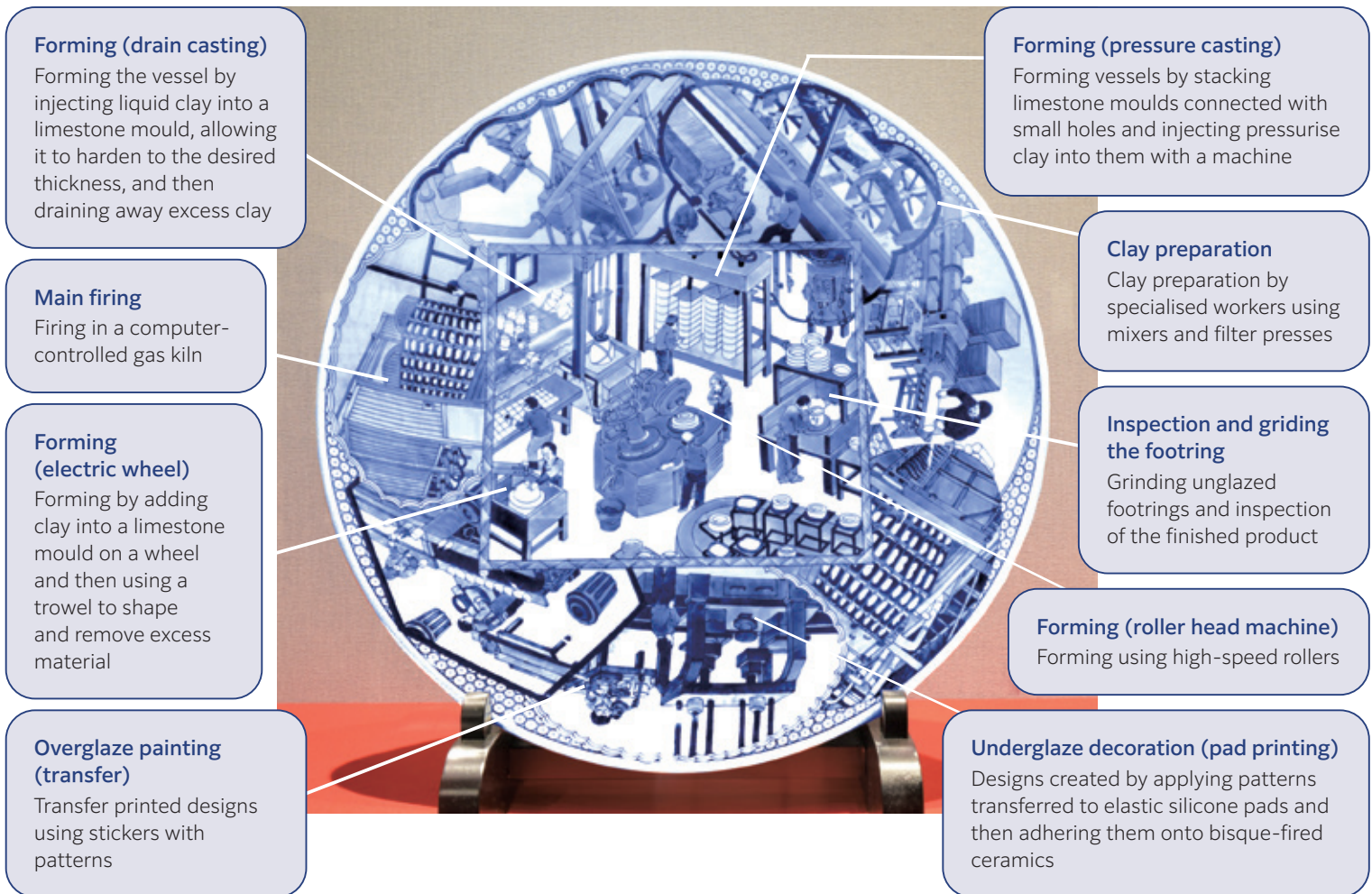
As part of the 2016 celebrations commemorating the 400th anniversary of the creation of Arita ware, an animation featuring a 'Large dish with Arita Sarayama craftspeople design in underglaze cobalt blue' was made to depict the porcelain production process. A pair of large dishes entitled 'Heisei-era large dish with Arita Sarayama craftspeople design' was created to depict present-day production techniques that corresponds to each of the Edo-period processes shown on the original work.

Why create a pair? Today, some kilns have redoubled their commitment to traditional techniques that have been passed down over the generations, while others have sought to embrace advanced technology in an effort to streamline production. In recognition of this reality, two versions of the dish were produced, one depicting traditional methods and the other, mechanisation and automation. Despite such differences in techniques and methodology, both approaches rest on the technical skill and spirit that has been passed down consistently in the Arita ceramic community for over 400 years.

Heisei-era Large Dish with Arita Sarayama Craftspeople Design (Traditional Techniques)



Heisei-era Large Dish with Arita Sarayama Craftspeople Design (Mechanisation and Automation)



Daily Life in Arita Sarayama

In Arita's Uchiyama district, which developed as a porcelain manufacturing area, craftspeople and merchants played a lead role in the community's prosperity. Among the stately, plaster-walled Japanese-style buildings that still line the streets of the Uchiyama, designated by the Japanese government as an Important Preservation Area for Groups of Traditional Buildings, can be found occasional Western structures and designs. These structures often incorporate materials quite advanced for the time of construction, highlighting the enterprising spirit of the people who lived in this area.

The spirit of the place is aptly captured by the implements that were used by its residents in their daily lives. Here they have enjoyed extensive exchanges with other areas in Japan and distant overseas lands since early modern times through the production and distribution of porcelain despite its remote and rural location in Kyushu. Various objects including a bowler hat signal the effort to swiftly adopt urban fashions; a state-of-the-art, foreign-made film projector; and school backpacks, which were premium-priced items at the time. The community's status as a centre of porcelain production is also recognisable in unique items that have no other parallel, for example ceramic hot water bottles and bags made for use in selling ceramics.



Actual interior of a merchant's home



Floor plan for a merchant's home (with the living room in the centre)



Interior of a merchant's home as reproduced for display

1. Staircase chest (*kaidan dansu*)

2. Merchant *tansu* chest

Both items were used to store important documents like account ledgers. Here, the staircase chest sports an exceptionally elaborate design.

3. Household *Shintō* altar

The altar enshrines a talisman dedicated to prosperity in business along with other items.

Folk materials from Arita's Uchiyama district





4. *Kamishimo* (formal Japanese traditional costume for men)

This traditional garb was worn by warriors during the Edo period and later at rituals and other ceremonial occasions during the Meiji period.

5. Pillow

Pillows like this were positioned to provide support at the nape of the neck so that they would not interfere with the user's hair.

6. Letter box

Lacquered boxes like this one were used to contain letters.

7. Tobacco tray

This tray includes smoking implements for use with cut tobacco.

8. Bowler hat

Western hats like this one came to Japan from the United States and Europe beginning with the Meiji period. This example bears a gold label that reads 'BATTERSBY & CO. LONDON'.

9. Tooth-blackening tools

These implements were used to blacken teeth. The custom, which originated in during the Heian period, was employed by commoners during the Edo period to indicate that a woman was married; it was subsequently prohibited among the nobility during the Meiji period and then gradually fell from use among the general populace.

10. Hot water bottle

This ceramic hot water bottle would have been filled with hot water for use in providing a localised source of heat.

11. School backpacks

These school backpacks originated as bags carried on the backs of soldiers. These particular backpacks retain their original price tags, offering a fascinating glimpse into the high cost of such belongings at the time.

12. Bag for sample products

In an age when catalogues did not exist, merchants used purpose-made bags like this to carry sample ceramics as they travelled around the country to sell their wares. Such bags remained in use until the beginning of the Heisei period (1992-2019).

13. Film projector

Designed for use by individuals and families, this French-made "Pathe Baby" film projector was extremely expensive at the time it was imported.

14. Sewing machine

This American-made sewing machine dates to around 1930.

15. Candle stand

Candle stands such as this one were used indoors to provide light.

16. Mirror stand

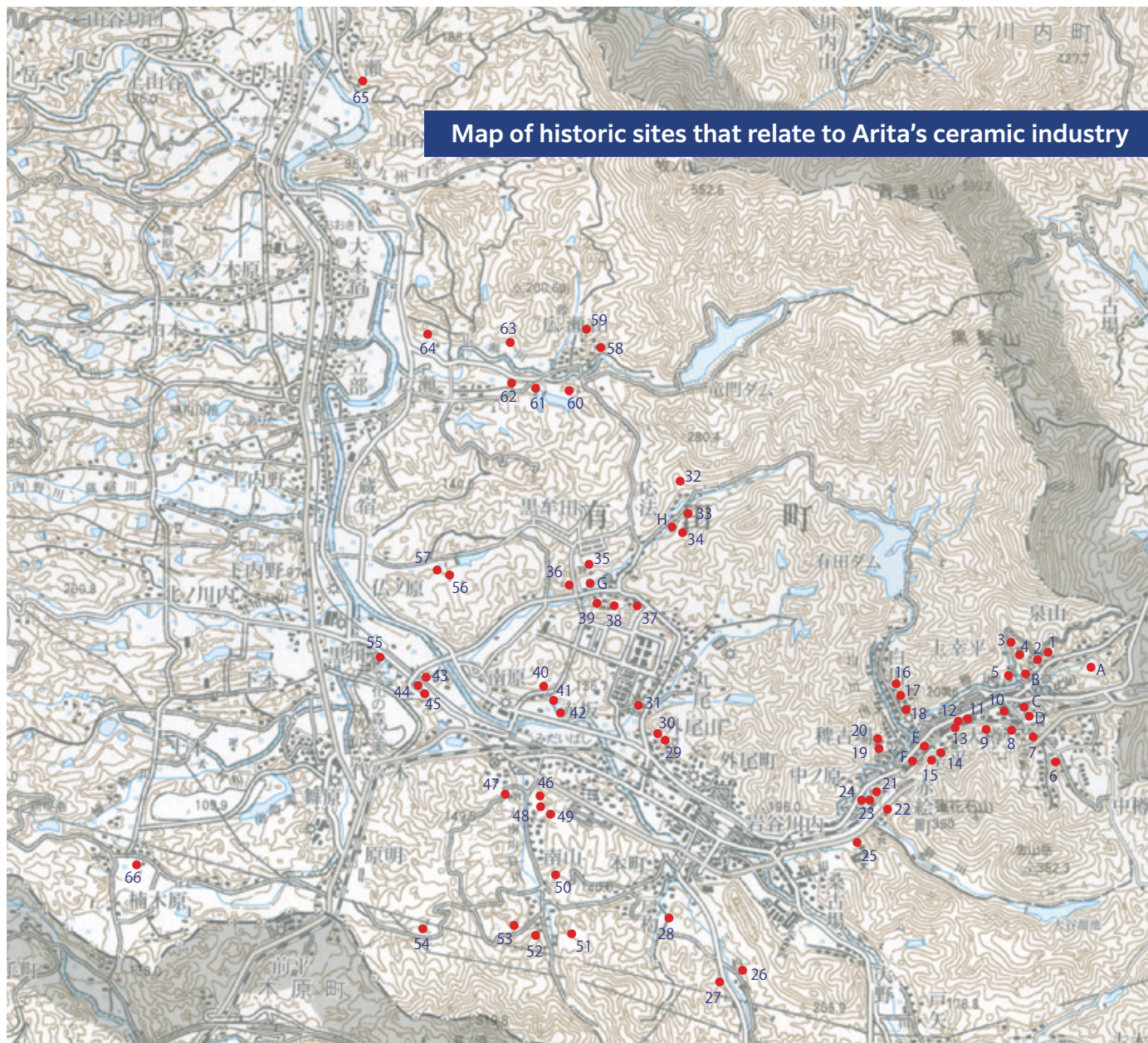
Full-body mirrors like this one were used to check on one's appearance.

17. Brazier

People burned charcoal in braziers to provide heat and also boil water.

18. Bathtub made of porcelain

This porcelain bathtub is said to have been made for use by Emperor Taishō on the occasion of a special, large-scale military parade held in Saga at the military drill court on November 19, 1926.



Map of historic sites that relate to Arita's ceramic industry

- | | | | |
|---------------------------------------|--|--------------------------------------|---|
| 1 Kusunokidani kiln site | 28 Mukainohara kiln site | 54 Haraake kiln site (national) | A Izumiyama quarry |
| 2 Gezuyabu kiln site | 29 Hokaoyama kiln site | 55 Noborankatsuji kiln site | B Izumiyama-kuchiyabansho (former guard house) site |
| 3 Toshikidani No 1 kiln site | 30 Hokaoyama-byôsodan kiln site | 56 Mukaenohara kiln site (municipal) | C Izumiyama icchôme site |
| 4 Toshikidani No 2 kiln site | 31 Maruo kiln site | 57 Mukaenohara-kôraiijin kiln site | D Nakadaru icchôme site |
| 5 Toshikidani No 3 kiln site | 32 Kakenotani kiln site (municipal) | 58 Kôtake kiln site | E Kôbira site |
| 6 Kodaru No 1 kiln site | 33 Yagenji kiln site | 59 Moemon kiln site | F Akaemachi site |
| 7 Kodaru No 2 kiln site (prefectural) | 34 Kamanotani kiln site | 60 Hirosemukai kiln site | G Yanbeta site |
| 8 Yamagoya kiln site | 35 Yanbeta kiln site (national) | 61 Shishikawa kiln site | H Chokodani single chamber coal kiln site (municipal) |
| 9 Myâmâyadan kiln site | 36 Yanbeta-nishi kiln site | 62 Benzaiten kiln site | |
| 10 Nakadaru kiln site | 37 Kuromutashin kiln site | 63 Komori kiln site | (): Designated historic site |
| 11 Maenobori kiln site | 38 Tataranomoto kiln site | 64 Kuramoto kiln site | |
| 12 Nishinobori kiln site | 39 Tatara No 2 kiln site | 65 Ninose kiln site | |
| 13 Ôdaru kiln site | 40 Komizoue kiln site | 66 Kusunokibaru kiln site | |
| 14 Shirayaki kiln site | 41 Komizonaka kiln site | | |
| 15 Tani kiln site | 42 Komizoshita kiln site | | |
| 16 Tengu-dani kiln site (national) | 43 Seirokunotsuji No 1 kiln site | | |
| 17 Nakashirakawa kiln site | 44 Seirokunotsuji-taishidôyoko kiln site | | |
| 18 Shimoshirakawa kiln site | 45 Seirokunotsuji No 2 kiln site | | |
| 19 Hiekoba kiln site (municipal) | 46 Komonnari kiln site | | |
| 20 Tenjin'yama kiln site (municipal) | 47 Tenjinmori kiln site | | |
| 21 Tenjinmachi kiln site | 48 Hiradoko kiln site | | |
| 22 Sarugawa kiln site | 49 Nangawara kamanotsuji kiln site | | |
| 23 Yamagoshi kiln site | 50 Kakiemon kiln site (national) | | |
| 24 Iwanaka kiln site | 51 Mukurodani kiln site | | |
| 25 Chôkichidani kiln site | 52 Higuchi kiln site | | |
| 26 Zenmondani kiln site | 53 Genjâmon kiln site | | |
| 27 Ipponmatsu kiln site | | | |

The history of Arita ware stretches back more than 400 years. Throughout that journey, craftspeople accumulated a range of expertise and experience that continue to serve as the driving force behind the current ceramic industry. Today, materials excavated from sites such as historical kilns graphically bring the history of Arita's ceramic industry to life. The Arita Excavated Ceramic Museum uses excavated objects to offer visitors a window into Arita ware's 400-year history.

I. Beginnings

Establishment of the ceramic industry

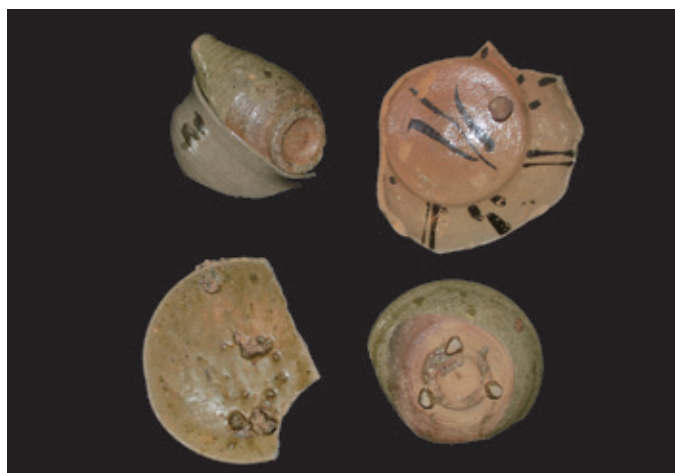
There were no noteworthy ceramic-producing areas in Kyushu until medieval Japan. One major reason for this absence was geographic: It was relatively easy to obtain ceramics from China and the Korean peninsula. However, kilns suddenly appeared at the foot of Mt. Kishidake (in present-day Karatsu City, Saga Prefecture) between the second half of the 1580s and the early 1590s and they began to fire high-grade glazed stoneware that was unusual in the domestic market at the time. The products of those kilns were made using technology from the Korean peninsula, where glazing was already in common use, and they differed from what could be produced with domestic techniques. Additionally, kilns were established across Kyushu by potters who had been brought back to Japan during the invasion of the Korean Peninsula by Toyotomi Hideyoshi from 1592 to 1598, an event known in Japan as the Bunroku Keichō campaign. Among the many Koreans brought back to the Hizen area were numerous potters, who began producing stoneware primarily in the area around Imari City.

Because potters began to produce stoneware made with advanced technologies from the continent in large-scale climbing kilns, which were not in use in Japan until then, Hizen rapidly became one of the country's leading ceramic producing areas. Early modern stoneware from Hizen was known collectively as Karatsu ware, after the name of the port from which ceramics produced at the Kishidake kilns were initially shipped, and similarly, porcelain, which was production started in Arita, was known as Imari ware after the port from which it was shipped as well.

Kilns spread into the surrounding area during the 1600s as demand grew, and it was during this period that ceramic production proliferated in Arita. Early kilns produced low-end products since they were located far from the heart of the industry in Imari. It remained difficult at the time to make a living exclusively from ceramic production, and until around

1630s, kiln sites were scattered around the western part of town, where farming was the primary way of life.

However, it was not long before kilns in the Nanbaru district began to distinguish themselves with exceptional wares. Kilns based on the same technologies were built in the area around the Komizoue kiln site and the Tenjinmori kiln site. Examples include the Haraake, Komonnari, and Yanbeta kiln sites. The technologies employed at the Komizoue kiln and the Tenjinmori kiln, operating in a newly developed area in which ceramic production played the principal role in people's livelihoods, led to the creation of Japan's first porcelain, which soon led to the rapid expansion of Arita's ceramic industry.



Stoneware unearthened at the Komizoue No. 1 kiln site (1600 to 1610s)

The birth of Japanese porcelain and the kiln where porcelain was fired for the first time

Japanese porcelain was made possible by the technology used to produce Karatsu ware, which had taken root in Arita. At the time, porcelain being distributed in Japan was mostly made in China. As a result, potters producing the first porcelain in Arita strove from the beginning to create Chinese-style products while drawing on techniques from the Korean peninsula. The principal difference between Korean and Chinese porcelain was that the former consisted primarily of undecorated white porcelain and the latter of underglaze cobalt blue known as *seika*. Most Japanese porcelain incorporated underglaze cobalt blue designs, and potters rarely fired undecorated white porcelain. Contacts with Chinese technology can be inferred from the fact that the Korean peninsula at the time did not use the *katauchi seikei* (mould production using a wheel and an interior mould) technique and that potters were able to obtain cobalt blue (*gosu*), which was not produced in Japan. However, potters at sites that produced porcelain also used unmodified techniques from the Korean peninsula, and they fired porcelain and stoneware in the same firing chambers, using the same kiln tools.

Records pertaining to people who were involved in early porcelain production, for example Kanagae Sanbei (popularly known as Ri Sanpei) and Ienaga Shōemon, concur that those individuals first moved to the Nanbaru district before discovering Izumiyama and that the Tengudani kiln was the first kiln to be built. Archaeological excavations indicate that the Tengudani kiln produced exclusively porcelain from the start and that it was established during the first half of the 1630s, which suggests that the discovery of Izumiyama predates the construction of the kiln by a short period of time. Since the start of porcelain production is thought to have occurred around the mid-1610s based on archaeological evidence such as stoneware and porcelain fired together, the fact that Izumiyama porcelain stone source had not yet been discovered suggests that another source of porcelain stone was initially employed.

Kilns including the Komizoue, Tenjinmori, and Komonnari were located in the Nanbaru district, and all of them fired stoneware along with porcelain. Among these sites, Komizoue produced porcelain with the same composition as earlier stoneware, making it highly likely that it was there that porcelain was fired in Arita for

the first time. The Komizoue and Tenjinmori kilns far outstripped the other kilns in terms of technology and the range of products, clearly marking them as the leading kilns in Arita at the time. Artisans at the Komizoue kiln site were proficient in techniques for producing large-scale items such as large dishes and firing methods for large scale production such as employing stacking methods using sand wads to separate the wares during the firing process. Artefacts excavated from the site include large dishes with a diameter of greater than 30 to 40 centimetres and dishes with sand wad marks in a variety of shapes and with a range of patterns. These were techniques that were virtually unheard of at other kilns at the time. By contrast, the Tenjinmori kiln site, which fired mostly small and medium-size wares, stood out for its production of high-quality porcelain that reveals precise knowledge of Chinese Jingdezhen porcelain.



Komizoue No. 1 (right) and No. 2 (left) kiln sites



Stoneware and porcelain unearthed at the Komizoue No. 1 and 2 kiln sites (1610s to 1620s)

Expansion of porcelain-producing kilns and the discovery of Izumiyama

With the advent of porcelain production in the Nanbaru district, the area saw rapid growth in the number of local porcelain producing kilns. Porcelain production technology was soon transmitted to the town of Hasami (in the Ōmura domain), Mikawachi (in the Hirado domain), Takeo City, and other nearby areas. These subsequently established kilns produced a narrower range of products that were similar to ceramics produced at kilns such as the Komizoue and Tenjinmori. Although the proportion of porcelain being produced rose gradually, stoneware still accounted for the lion's share of ceramic production at this time. Since it required a special type of raw material to produce, porcelain production depended not only on production techniques, but also on a steady supply of raw material, suggesting that the risks of specialisation remained high.

A source known as the Ienaga Family Document describes how Ienaga Shōemon, who lived in Komizoppara, Nanbaru and produced ceramics, discovered Izumiyama as he searched for a source of clay when he ran out of his own supply and was unable to fire porcelain. It appears that Izumiyama was discovered when the supply of raw materials for porcelain began to dry up sometime between 10 and 20 years after the initial start of porcelain production, spurring potters on to search look for a new source of porcelain stone. While it remains unclear who actually discovered the site, it's clear that the Kanagae family was involved since they were subsequently entrusted with the site management.

In any case, a rich source of high-quality raw material was discovered at Izumiyama, definitively resolving a key issue for porcelain production. The Tengudani kiln, which is located relatively close to Izumiyama in the Shirakawa district, was established to make ready use of the newly discovered raw material and to develop this sustainable resource to create a systemised way to create the specialised production of porcelain. In this sense, the Tengudani site can be described as the second kiln to fire porcelain for the “first” time, laying the foundation for the manufacture of porcelain in Arita and initiating the unbroken line of porcelain technology transfer that has been passed down through the generations in Arita to contemporary times.



Tengudani kiln site



Porcelain unearthed at the Tenjinmori kiln site (1620s to 1630s)



Izumiyama porcelain stone quarry

Organisation and consolidation of kilns

According to a source known as the ‘Yamamoto Jin’emon Shigesumi Chronological Record’, the rapidly growing number of potters who were building kilns in Imari and Arita resulted in deforestation along the mountainsides. This led to Yamamoto Jin’emon, who served as the local inspector, to report on the situation to the lord of the Saga domain in Edo, Nabeshima Katsushige. Katsushige in 1637 ordered Taku Mimasakanokami (Shigetoki) to banish all the Japanese nationals who were not assisting Korean potters. Yamamoto conducted a survey in response to the order and found that 826 people (including 532 men and 294 women) were banished from the ceramic industry. In short, potters were banned from the industry in order to protect the area’s woodlands.

Incidentally, the Ienaga Family Document notes that around the time Shōemon was producing ceramics at the Tengudani kiln, a Korean who had been brought to Japan by Taku Mimasakanokami (formally Taku Yasutoshi, Nagatonokami) and who produced high quality porcelain requested that Japanese potters be banned because he wanted to eliminate the competition. This Korean was most certainly Kanagae Sanbei (Sanbe’e) as is corroborated by the Kanagae Family Document; the establishment of the Tengudani kiln in the 1630s does not contradict this account. This version of events characterises the banning of potters not as a matter of protecting woodlands, but rather as an attempt to reform the structures that underpinned the nascent ceramic industry.

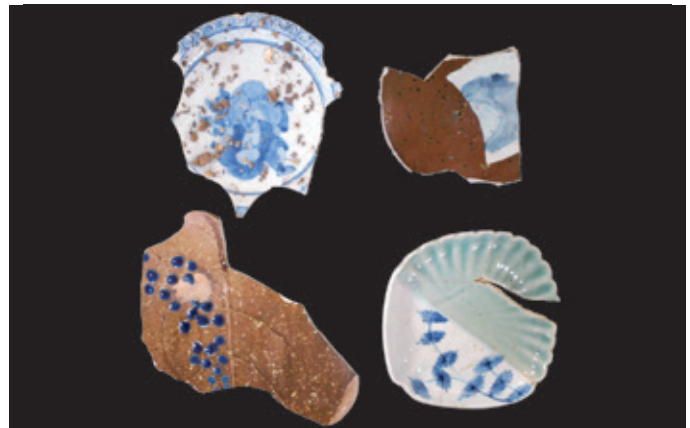
The ‘Yamamoto Jin’emon Shigesumi Chronological Record’ relates how the banning of potters was followed by the closure of all four ceramic production areas in

Imari and seven ceramic production areas in Arita, consolidating production to 13 sites in eastern Arita. In other words, kilns were concentrated in the eastern part of the town of Arita, bound by Izumiyama (Toshikiyama) to the east. These changes signalled the abandonment of ceramic production in the western part of town, separating it from the previous agriculturally-dominated lifestyle that incorporated ceramic production. The porcelain industry became from this period onwards that mainstay of the potter’s livelihood.

Whatever the motivation for the banning of potters, the relocation of kilns appears not to be directly related to the protection of local woodlands. Additionally, the banishment applied to potters who had come from outside the community, even Koreans nationals, while potters with an established record of activity in the industry such as the Ienaga family, were exempt, even if they were Japanese nationals. In fact, the policy was undertaken specifically to address conditions in the ceramic industry, even if it nominally sought to protect forestland. It was presumably engineered by Yamamoto, who had already realised that porcelain production was an effective financial tool of domain policy. The Saga domain at the time did not yet recognised ceramic production as a local industry, and it was possible that had the proliferation of kilns proceeded in an unregulated matter, kilns would have ended up being abolished anyway to protect the woodlands.



Artefacts unearthed at the Hokaoyama No. 1 and 2 kiln sites (1630s to 1640s)



Artefacts unearthed at the Yamagoya kiln site (Nakadaruyama) (1640s to early 1650s)

Kiln sites where copper red decorated porcelain have been found

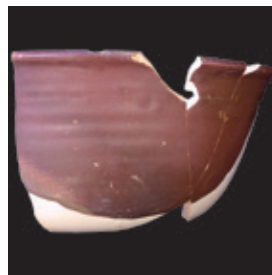
Copper oxide in glaze or in underglaze colourants to impart a red hue or design on porcelain is known as 'copper red' (*shinsha*). The name originally derives from the word for a red mineral that forms from mercury sulfide, and it is the copper content that produces the red colour during a reduction firing. In China, ceramics whose red colour derives from mixing copper oxide with glaze are known as copper red glaze wares, as opposed to ceramics where the substance is used for underglaze decoration, and these are known as underglaze copper red wares; in Japan, the same term, copper red, is employed for both variants.

Copper red was the only method for creating a red hue before the establishment of overglaze polychrome enamelling. The technique is known to have been in use before the 1630s, and it reached its heyday during the 1640s before disappearing during the 1660s following the widespread adoption of overglaze polychrome enamelling. In short, copper red products are extremely valuable because their production was limited to a period of 20 to 30 years. Moreover, such products have not been found at all kilns, rather production was quite limited.

Copper red glaze was in use prior to the 1630s before being replaced by underglaze copper red

during the 1640s. Examples of the technique dating to the 1630s and earlier have been unearthed at the Komizoue kiln site and the Seirokunotsuji No. 1 kiln site, among other sites, but only in small quantities. Such products became somewhat more common during and after the 1640s, but it remained extremely rare to discover large numbers of such artefacts together. They have been found at the Yamagoya kiln site in the *uchiyama* (inner) area, and at the Hirosemukai kiln site in the *sotoyama* (outer) area. Copper red products from the two kilns differ considerably; in contrast to the exquisitely beautiful products from the Yamagoya kiln site, the bolder products from the Hirosemukai kiln site stand out due to their strong brushwork. The Yamagoya kiln site is also remarkable for its combined use of copper red and underglaze cobalt blue, but few such artefacts have been found at the Hirosemukai kiln site.

Types of copper red



Copper red glaze



Underglaze copper red

II. Establishment of Structures for Production

The significance of the organisation and consolidation of kilns in Arita

The organisation and consolidation of kilns did not merely reduce the number of potters and limit the locations where ceramics were produced. The policy's most important objective was to put in place production structures to ensure the area's ability to produce porcelain in a professional and exclusive manner into the indefinite future. The discovery of Izumiyama and the accumulation of porcelain-specific technologies at the Tengudani kiln eliminated enough risk that it became possible to undertake such a decisive and ambitious project. Korean potters presumably remained to play

a lead role because the policy favoured craftspeople with long experience in porcelain production and technical skill. Furthermore, production of stoneware was in principle abandoned in Arita, and low-grade porcelain wares with stacking marks on their surface disappeared. In short, structures were established which allowed skilled craftspeople to produce premium porcelain products using high-quality raw material from Izumiyama.

The eastern part of the town of Arita, where the organisation and consolidation took place, was also ideal from the standpoint of safeguarding these nascent porcelain technologies. Unlike the western part of the community, where the ceramic industry had previously been concentrated, the eastern area did not directly

border the ceramic-producing areas of Hasami or Mikawachi, which were controlled by other domains. A new town was built in a valley sandwiched between the hills to the north and south. The area could be protected and managed simply by controlling access from the east and west, and it offered the further advantage of being close to Izumiyama, which supplied the raw material. In addition, the Arita Saraya ('ceramic production area') was established. In the past, individual kilns which operated independently had been treated as ceramic producers. However, that approach made it difficult to implement integrated policies, and there were concerns that an excessive level of internal competition might occur harming the overall industry. To avoid those issues, the entire Arita area was grouped together to create the Arita Saraya, with individual kilns operating within it and were each labelled as 'Yama'.



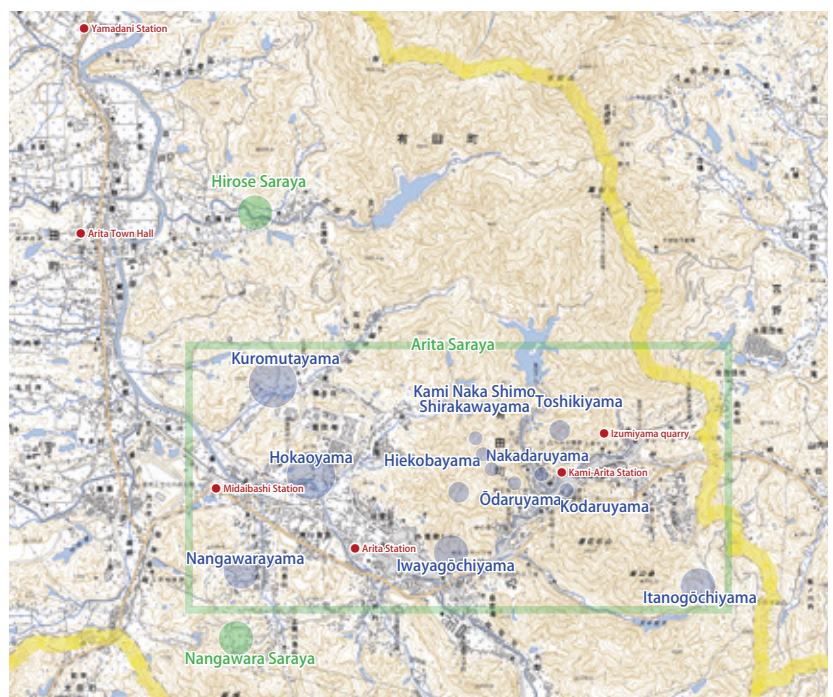
Photograph of the entire Arita Uchiyama area

The creation of new production centres and scope of the Arita Saraya

production area but does not include the Hirose Saraya and Nangawara Saraya in the initial Arita Saraya, even though they were established kilns in Arita.

Although many potters were banished as part of the general kiln organisation and consolidation, some potters were subsequently permitted to return. While abolished kilns did not resume operations, new climbing kilns were established in areas that were allowed to continue operating, and new porcelain centres were created primarily in the western section of the town of Arita where ceramics had not previously been made. This region later was labelled as the Sotoyama area.

While no records remain on the 13 production centres that resulted from the re-organisation and consolidation, the Record of Saga Domain Tax Revenue of 1653, which is the earliest source to record these changes, describes 14 production centres in the Arita Saraya, indicating an increase of one. The source goes on to describe the ceramic



Production centres recorded in the Record of Saga Domain Tax Revenue

Establishment of Saraya magistrate

In Arita during the 1640s, the development in the ceramic-producing area formed as a result of the organisation and consultation of kilns centred on what would later become the Uchiyama district, but the miscellaneous tax (*unjōgin*) collected by the domain was not sufficient to earn the sector official recognition as an industry. Consequently, the Saga domain residence in Edo ordered the abolition of some ceramic production areas once more in 1647 to protect the surrounding forestland.

In response, local Saga officials, who were concerned about the impact on potters' livelihoods and domain finances as well as dissemination of ceramic technologies, held frequent discussions with ceramic producing area representatives to ask that they accept an increase in the miscellaneous tax, but the negotiations broke down. Although the subsequent course of events still remains unclear, the lord of the domain in Edo ultimately appointed Yamamoto Jin'emon to serve as the first Arita Saraya magistrate (a title that was later changed to 'Sarayama magistrate') in December of that year, making him responsible for the ceramic industry operations.

The creation of the position of Saraya magistrate signified the domain's official recognition of the ceramic industry. Miscellaneous tax collections rose from about 8kg of silver in 1637 to about 291kg of silver in 1648, an increase of almost 3,700 percent in 10 years. The figures demonstrate that the local ceramic industry grew rapidly

enough so that the domain could not afford to ignore it and highlights the importance of the organisation and consolidation of kilns.



Kusunokidani No. 1 kiln site (Toshikiyama) (late 1640s to mid 1650s)
Top: Shoki Imari style
Bottom: Ko-Kutani style

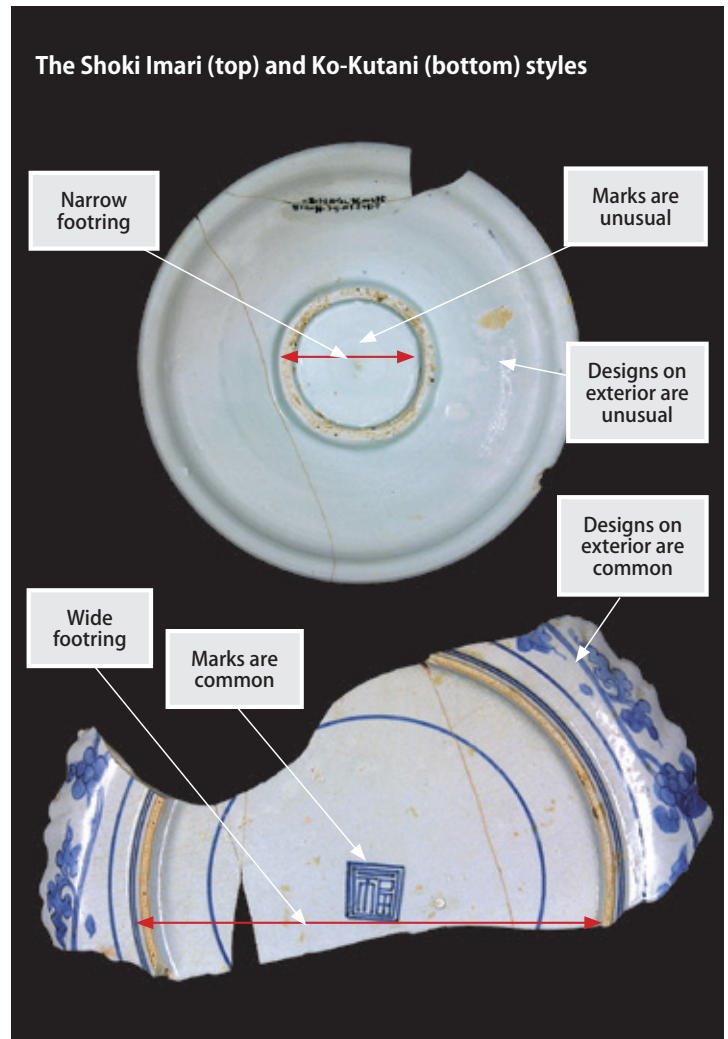
Shoki Imari and Ko-Kutani styles

Initial Arita porcelain produced during the 1610s is known as Shoki Imari (Early Imari). The style is characterised by thickly potted bodies and powerful designs executed in bold lines. The surface of many of these ceramics has a distinct blue hue. Dishes and similar objects as a rule were potted with a small footring diameter, and in general, porcelains did not sport marks inside the footring or on the exterior. The next style to develop in Arita was the Ko-Kutani style. It emerged around the mid-1640s and became popular during the 1650s. So named because it was originally

thought to have been produced in Kutani, Ishikawa Prefecture. The style is now known to have been created in Arita. The name Ko-Kutani is strongly associated with overglaze polychrome enamelling, but in fact it refers to a comprehensive set of production technologies that started with clay preparation and included the overglaze enamel technique. As a result, the Ko-Kutani style emerged as a new brand characterising premium products that soon replaced the previous Shoki Imari style, including wares with underglaze cobalt blue designs and other styles.

The Ko-Kutani style incorporated Chinese Jingdezhen porcelain motifs and shapes, which was then considered to be the best porcelain in the world. Dishes typically had a wide footring with marks in the interior, and designs on the exterior of the vessels. Additionally, the introduction of techniques such as bisque firing led to thinner, whiter bodies. Contemporary Arita ware can be traced back to this seminal style.

Initially, craftspeople were engaged with both processes, namely creating porcelain body and then applying overglaze painting decorations. However, the subsequent division of labour led to the establishment of an overglaze enameller workshops, *Akae-ya* that was responsible primarily for overglaze decoration on ceramics. The addition of new overglaze polychrome enamelling techniques resulted in the establishment of technologies and products that could compete on an equal footing with Jingdezhen porcelain in terms of range and quality of products, indicating the realisation of an environment that would later allow Arita ware to take the world by storm through overseas exports.



Reorganisation of kilns and local colour

Archaeological investigations suggest that porcelain production in Arita underwent a major reorganisation from around the mid-1650s to the early 1660s. This reorganisation consisted of the development of a system for the efficient mass-production of products to uniform standards throughout Uchiyama area as part of an effort to prepare for an era in which overseas trade took on a key role and to ensure that the Uchiyama would serve as a central base for production of export wares. It can be inferred that the Hirose and Nangawara ceramic production areas were incorporated into the Arita Saraya as part of this reorganisation. At the time, potters who did not fit into the Uchiyama specifications moved to the Sotoyama area. This process had a considerable impact on the formation of each area's distinctive characteristics. As a result of the influx of people producing porcelains in the premium Ko-Kutani style, Shimo-nangawarayama rapidly transformed from

an area that produced low-grade ceramics to an area that produced porcelain of the highest quality. At the same time, the distinctive characteristics of individual production centres in the Sotoyama area became set as producers of Shoki Imari products moved to kilns such as Hiroseyama and also established new centres at sites such as Ōbōyama.



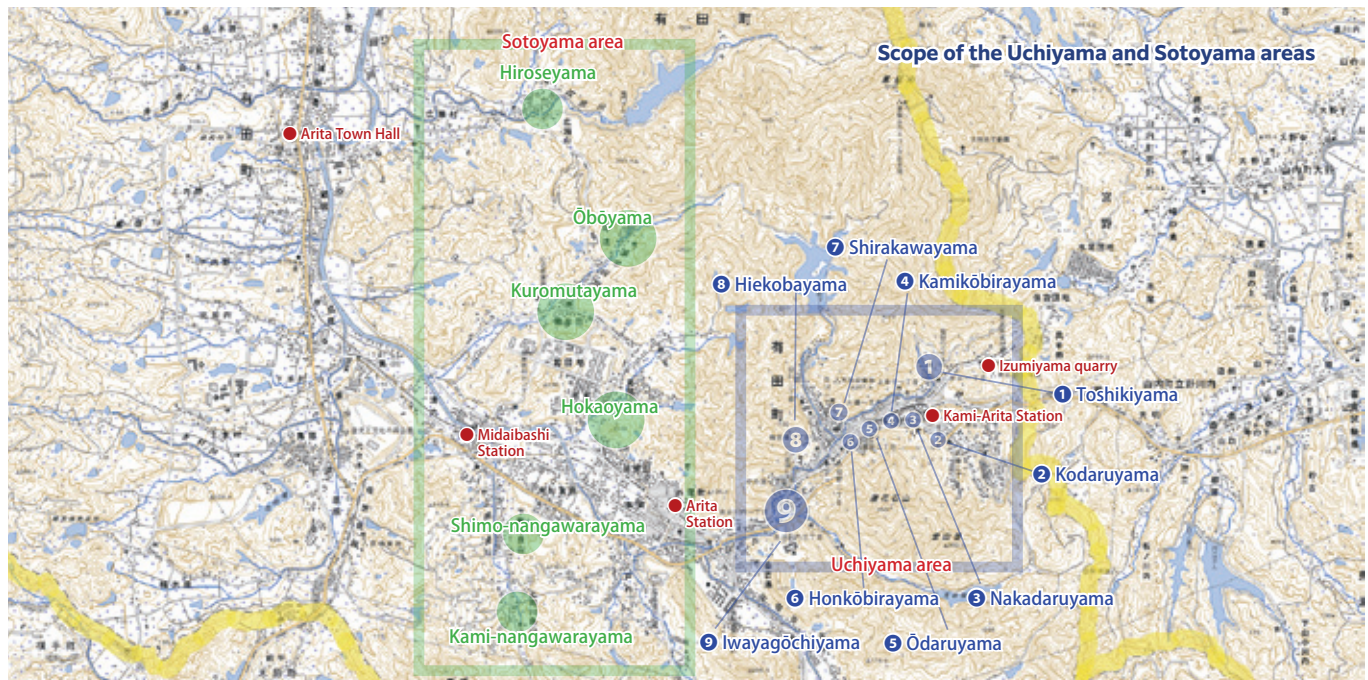
Kōtake kiln site (Hiroseyama) (late 1650s to 1680s)

The Uchiyama and Sotoyama areas

The kilns managed by the Sarayama magistrate were divided into three categories: Uchiyama area, Sotoyama area, and Ōsotoyama area. The Uchiyama area consisted of the eastern half of the ceramic-producing area created by the organisation and consolidation of kilns, while kilns in the rest of the Saga domain territory in Arita and Imari were classified as part of the Sotoyama area. The Ōsotoyama area consisted of Saga domain kilns outside the main territory, in locations such as Takeo City and Ureshino City.

As a result of the reorganisation of kilns that occurred around the late 1650s, production structures were established that enabled the entire Uchiyama area to

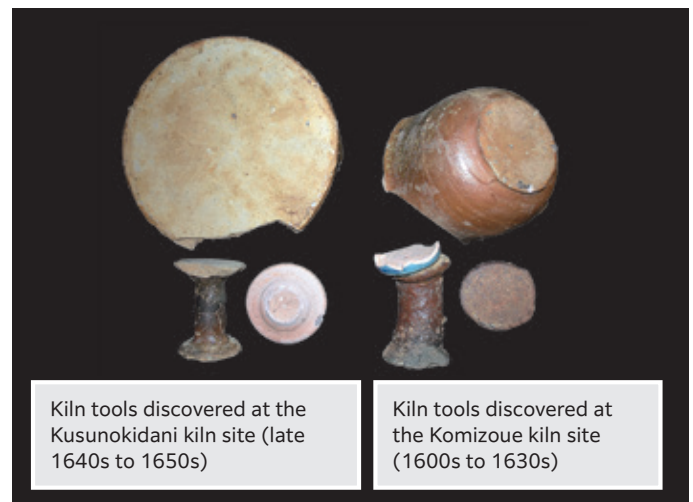
function collectively as a single kiln to produce premium products at volume. Consequently, the area achieved a highly uniform level of quality while sacrificing the ability to fulfil a more diverse range of demand. Kilns in the Sotoyama area played a complementary role. In the Sotoyama area, individual production centres exhibited individual characteristics; for example, Nangawarayama produced premium products, while Hiroseyama and Ōbōyama specialised in mass-produced products. Thanks to the complementary relationship of the Uchiyama and Sotoyama areas, Arita as a whole was able to put in place structures that allowed it to supply a variety of products for different markets and price ranges.



III. The Era of Overseas Exports

A changing of the guard in porcelain production

During the decades following its establishment, Arita's ceramic industry was led by a first generation of craftspeople who had mastered technology from the Korean peninsula. However, Kanagae Sanbei, a leader in the industry, died in 1655, and Hyakubasen, who had produced porcelain in Hiekobayama, died the following year. Around the 1650s, leadership shifted to a second generation of craftspeople who had learned



Arita-style techniques from the very beginnings of their careers, as opposed to starting with techniques imported from the Korean peninsula. This changing of the guard coincided with the disappearance of elements of the Joseon (dynasty) style from Arita porcelain and a rapid transition to Jingdezhen-style products. Even at production sites that were extremely conservative,

The era of overseas exports

Arita porcelain export began by 1650, and the era of mass export started in 1659. This development came when the export of Chinese porcelain faced difficulties in the confusion that followed the end of the Ming dynasty in 1644, leading to Arita porcelain being chosen as a substitute for Chinese porcelain. In Arita, the kilns had succeeded in already manufacturing mass-producing porcelain (in the Ko-Kutani style) whose quality was comparable with that of Jingdezhen porcelain around the first half of the 1650s, enabling them to be able to fulfil overseas orders. At the time, demand for porcelain in the domestic market was still limited. For Arita, which had achieved the ability to mass-produce porcelain but faced limits on the growth of the industry over a lack of

Production structured around overglaze enamel workshops

Eleven overglaze enamel workshops were established in the vicinity of what is now Akaemachi, nine of which are thought to be located within the Akaemachi and the remaining two were located in the Kōbira district. Archaeological study of the Akaemachi site and the Kōbira site, where two of those workshops are thought to have been located, indicates that overglaze enamel workshops emerged sometime during the mid 1650s. The system of overglaze enamel workshops was previously believed to have represented a division of labour in the overglaze painting process throughout Arita, but today experts speculate that the division of labour as practised during the second half of the 17th century applied primarily to the Uchiyama area. It is possible that the establishment of the workshops attracted experienced and successful potters throughout Arita. It is interesting to note that small quantities of overglaze-enamel decorated porcelain from Sotoyama kilns as well as

we see the emergence of elements such as Chinese-style techniques for loading kilns, new kiln tools, and techniques such as *itokirizaiku* (a mould production method in which the potter's wheel is not used and the footring is attached separately).

internal consumer demand, the overseas trade market represented a major opportunity.



Left (1 object): Kōbira site
Right (4 objects): Akaemachi site
(second half of the 1650s to the 1680s)

undecorated porcelain wares that had not yet undergone the overglaze painting process have also been uncovered at the workshop sites. At the same time, locations such as the Yanbeta and Maruo kiln sites, both prominent producers of overglaze polychrome enamels in the Sotoyama area, were closed down.

Incidentally, elutriation equipment used in clay preparation has been found at the Kōbira site, and artefacts unearthed at the Akaemachi site include



Clay moulds for *oshigata seikei* (mould production using a press mould)
Left and lower right: Akaemachi site
Top right and middle: Kōbira site (1660s to 1690s)

large quantities of clay moulds such as those used to produce dolls as well as porcelain that had not yet undergone overglaze enamel decoration and overglaze-decorated products that were created using those exact moulds. However, the moulds were used only in wheel-less mould forming process, and not in *katauchi seikei* (mould production using a wheel and an interior mould). These facts make it clear that the overglaze enameller

Products exported from the Uchiyama area

Kilns in the Uchiyama area bore the principal responsibility for exports. Production initially focused on basic wares for the Southeast Asian markets but gradually transitioned to more high-quality items for Europe, expanding their range to encompass an extremely diverse array of types and shapes, including dishes, bowls, and bottles, in response to overseas demand. Products included objects that were unfamiliar in Japan at the time, including barber's basins, ink pots, and seasoning sets, as well as unique items bearing motifs featuring tulips and letters of the alphabet.

The Kakiemon style

The Kakiemon style was named because the products in question were thought to have been produced by the Sakaida Kakiemon family. However, the style is now believed to have been established during the 1670s in Shimo-nangawarayama, an area that included the Sakaida family. In other words, it can also be described as Nangawara style.

Kakiemon style wares are characterised by the incorporation of ample amounts of white space in their designs and feature primarily asymmetrical compositions. The style's use of the colour white was about more than just empty space; rather, Kakiemon style craftspeople created pictures incorporating white or empty spaces. Unlike styles produced at the Chinese official kilns at

workshops of the time did not specialise exclusively in overglaze painting, but rather were involved in the entire production process for products made without the potter's wheel, starting with clay preparation and including production of clay moulds.

While the mix of products for export abroad shifted gradually over the course of time, which lasted for about a century, certain items, for example Kraak-style dishes, were constantly exported in large quantities throughout this period. At an early stage, Kraak-style dishes faithfully copied the original Chinese models but over time came to incorporate original designs developed in Arita, as the area rose in prominence to become a worldwide centre of porcelain production.

the same period, which featured powerful pictorial and narrative designs and detailed patterns, the Kakiemon style embraced a quintessentially Japanese sensibility in its avoidance of excessive assertiveness. As a result, the merits of porcelain created in the style can be challenging to appreciate, and perhaps because lower-quality variants appeared not meticulous in execution, this style was somewhat limited in its manufacture when compared with other Arita ware porcelain styles. Although the Kakiemon style was produced by some kilns in the Uchiyama area, which was second only to Nangawara in the Sotoyama area in the manufacture of premium products, there are no other examples of items of this style yet found in the Sotoyama area.

Product rankings and saggars

The number of saggars (box-like containers that can be used when firing ceramics) unearthed at various kiln sites can help to infer the ranking of the products

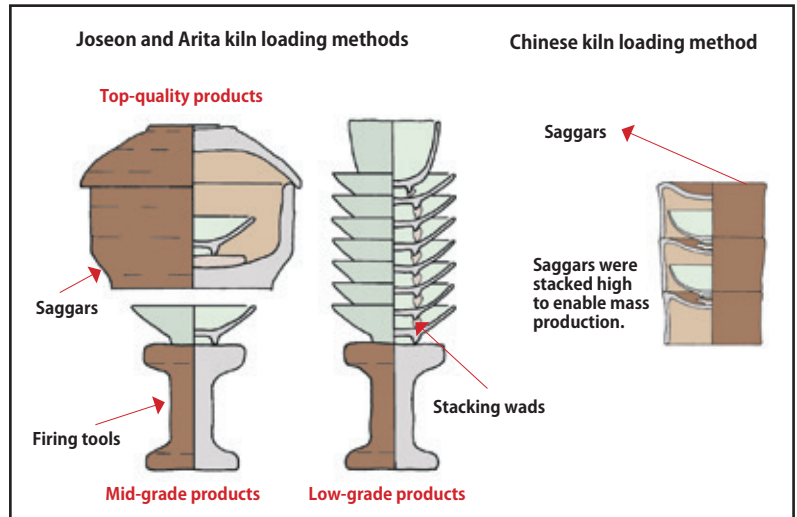
that were fired. Because Arita kilns had based their kiln operations on Joseon dynasty technology, saggars were not used for mass-produced items as they were in Chinese kilns which would stack the boxed ceramics high in kilns to be efficient, but they were used sparingly

to fire premium items, and as such are a useful indicator of the extent to which premium works dominated production at any given site and time period.

With few exceptions, saggars have been unearthed at all sites associated with the Shoki Imari production up until the 1640s. Their prevalence reflects the high value placed on porcelain itself and the fact that there was limited differentiation between kilns at the time. However, differences in kiln and area approaches began to become more pronounced beginning in the 1650s. The Kusunokidani kiln site in Toshikiyama located in the Uchiyama area accounted for more saggars than any other site during the 1650s. It is believed that Kakiemon I (Kisōemon) developed overglaze enamelling at this site. After the workshop was transferred to Nangawarayama, as techniques matured new designs were developed and the style that we now know as Kakiemon style emerged. As confirmation, an extremely large number of saggars have been discovered at the Kakiemon

kiln site in Shimo-nangawarayama.

By contrast, although potters at the Hirosemukai No. 6 kiln site in Hiroseyama, which produced primarily low-grade products, used saggars around the 1640s, few have been found at kiln sites in the area dating to the 1650s or later. Similarly, almost no saggars have been discovered at Ōbōyama, which was established during the 1650s.



Products exported from the Sotoyama area

During the second half of the 17th century, export ceramics were also mass-produced in the Sotoyama kilns area. Kilns like Nangawarayama were producing high quality porcelain that rivalled or excelled work from the kilns in the Uchiyama area Hokaoyama and Kuromutayama, whose mid-grade products ranked next in quality after those of the Uchiyama area, produced some ceramics for export to Europe in the same manner as Uchiyama area kilns. Most porcelain produced in the Sotoyama area kilns were destined for Southeast Asia. Typically, porcelain destined for Southeast Asia was of lower quality. An extremely limited number of types supplied the Southeast Asian market, namely small dishes with a design of the Chinese character (*hi*) in the central medallion surrounded by a phoenix design; rough

Kraak-style dishes; and bowls with dragon, phoenix and choppy waves design, which included a carp looking from between waves in central medallion, along with phoenixes and dragons on the exterior of the vessel.



Left and bottom: Hirosemukai No. 1 kiln site
 Right: Hokaoyama kiln site
 (Second half of the 1650s to the 1680s)

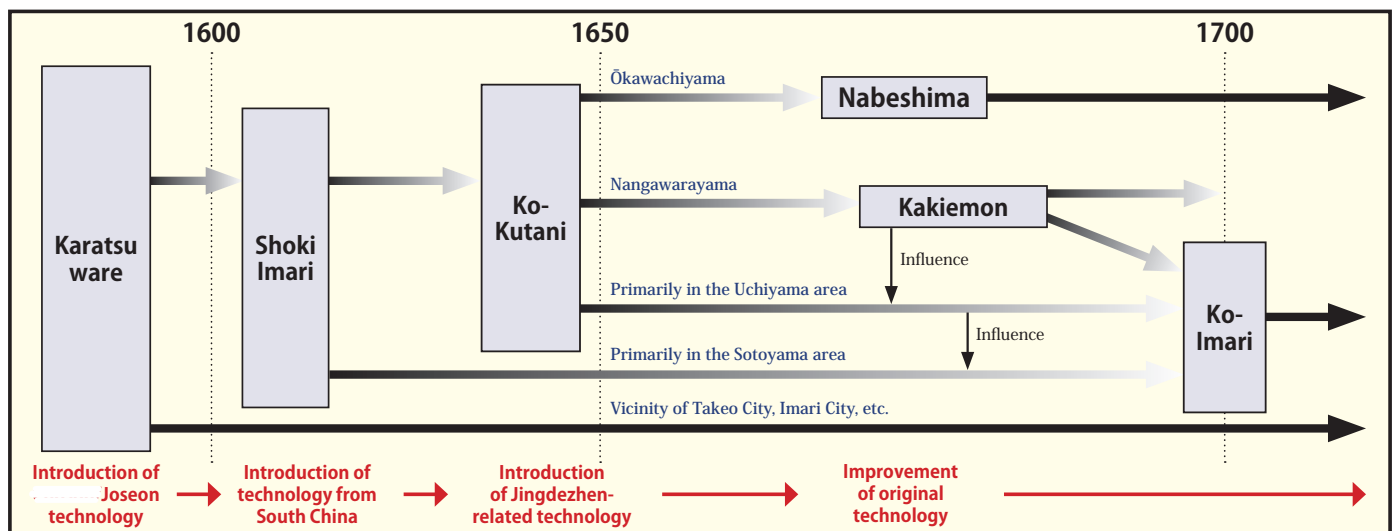
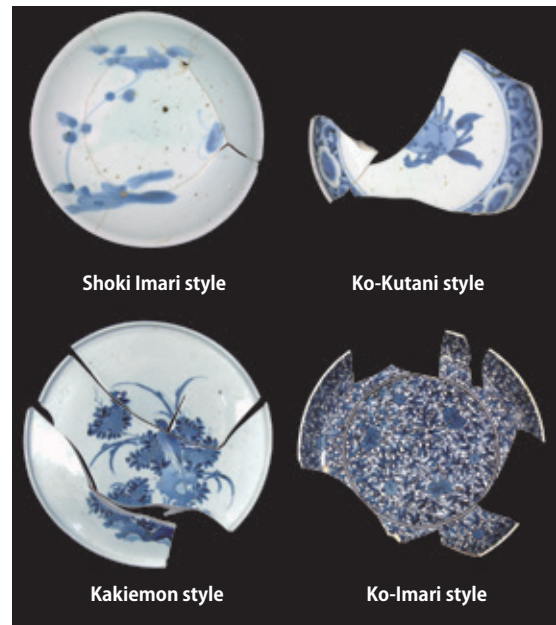
Product styles during the second half of the 17th century

The Shoki Imari style and the Ko-Imari style, which was established during the 1680s, enjoyed considerable popularity and were broadly employed in the Arita kilns.

The period that falls between the Shoki Imari and Ko-Imari styles created diverse range of styles including the Ko-Kutani and the Kakiemon, which makes it difficult to attach a stylistic name to each of the products. New styles were at the leading edge at any given time, providing the technologies that made possible the premium products of their respective periods.

Consequently, older technologies were in general used to manufacture lower-ranked ceramics. Technologies that were older remained in use for even lower-ranked products. However, the partial adoption of new technologies in combination in each era led to an infinite variety of wares.

The more premium porcelain a kiln produced, the shorter was their life span, whereas kilns that manufactured low-grade wares were able to continue making the same products over long periods of time. In this way, differences in the technology that the kilns used created differences in ceramic's ranking during the second half of the 17th century.



IV. Fulfilling Domestic Demand

Mass-production and efficiency-boosting technologies during the 18th century

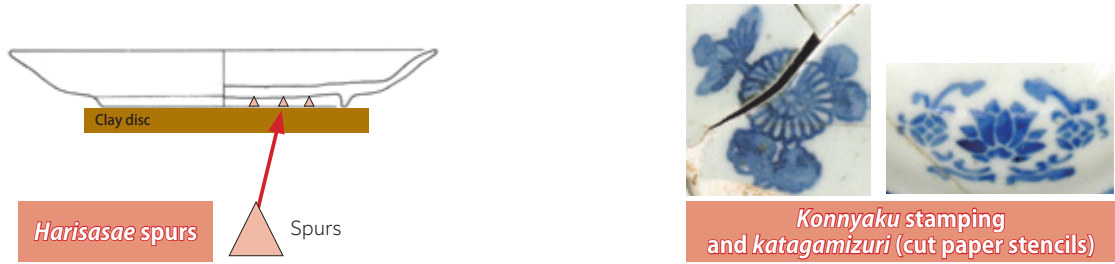
Kilns that produced products for the mass market, for example Hiroseyama, employed a variety of creative measures to control production costs. Similar measures were utilised in the Uchiyama area, but mass market-oriented kilns carried out these measures out even more thoroughly while simplifying the production process.

In decorating ceramics, for example, patterns were simplified, and printing techniques were commonly

used. *Katagamizuri* (cut paper stencils) were sometimes used, but *konnyaku* stamping was the most commonly employed technique. Whereas kilns in the Uchiyama area used large *konnyaku* stamps, sometimes in conjunction with hand painting, kilns producing wares for the mass market used only small *konnyaku* stamps. Kilns often removed the glaze from the interior central area of vessels, creating an unglazed area in the shape of a snake or bull's eye, so that the vessels could be stacked directly on top of one another when loaded into kilns for firing. In the Uchiyama area, craftspeople

applied overglaze enamel designs to the areas where the glaze had been removed after the main firing to make these areas less noticeable, but no such processes were taken for the mass produced wares. A technique known as spurs were used to prevent the bottom of vessels

such as dishes from sagging when a wide footring was used, but kilns producing products for the mass market sometimes omitted this step and opted instead to use a narrower footring.



Harisasa spurs

When using spurs, multiple circular cone-shaped sections of porcelain clay known as spurs were placed in the footring of larger ceramics to prevent the ware from warping or sagging during the firing process.

Konnyaku stamping and katagamizuri (cut paper stencils)

A technique known as *konnyaku* stamping (left) was widely adopted, although details such as the material from which stamps were made remain unknown. A technique known as *katagamizuri* (right) was used around 1700 in limited quantities.

Birth and spread of the Ko-Imari style

Once the Shoki Imari style ceded its dominance, no single style unified products in Arita for close to half a century. The Ko-Imari style, which was born during the 1680s, became the first overarching style to be adopted by potters and kilns, regardless of rank. Typified by the Kinrande (gold brocade) style that emerged during the 1690s, this style, which was modelled on products dating from around the Jiajing period to the Wanli period (1522 to 1619) in Ming China, was characterised by symmetrical compositions in which designs filled most of the vessels' surfaces. It was typical for products featuring overglaze polychrome enamelling to combine underglaze blue and overglaze enamel designs, the latter of which was executed over areas that had been left intentionally blank.

During the Genroku period (1688-1704), when this style spread widely, developments such as the emergence of townspeople as a unified social class and the growth in demand for tea gathering ceramics

combined to create new opportunities for copying Chinese porcelain. Such techniques initially were used primarily for high-grade ceramics produced for the domestic market and wares made for export, but they gradually came to be employed for standard domestic products. As underglaze cobalt blue designed porcelain adopted the same compositions as overglaze polychrome enamel decorated ware, Arita as a whole entered upon the era of the Ko-Imari style.



Akaemachi site (1690s to 1710s)

From differences of style to differences of quality

Widespread adoption of the Ko-Imari style led to a significant shift in the approach of ranking products

by style, which had been standard practice during the 17th century. Since products from all ranks came to be produced in the same style, the change signalled the advent of an era in which ceramics were ranked instead on the basis of their quality of manufacture.

Generally speaking, the more premium a product's quality, the more elaborate its design, while ceramics made for the mass market featured less-time-consuming patterns that incorporated significant amounts of white space. However, differences in quality are less recognisable than differences in style. At kilns such as Nangawarayama in the Sotoyama area, which produced super-high-grade porcelain, craftspeople experimented with distinctive designs, but their designs were imitated quite quickly by kilns in the Uchiyama area, making it difficult for kilns to establish distinctive characteristics.

Inclusive as it was of lower-level products, the Ko-Imari style was a boon for kilns that produced ceramics for the mass market, but to the extent that kilns relied on decoration, there were limits as to how far the drive towards simplification could proceed. By the 18th century, kilns in Hasami had seized the initiative in the production of low-grade products, and kilns that produced porcelain for the popular market took steps to facilitate mass production, for example by limiting the number of types of objects they produced.

It was during the Meiji period that the values and

technologies that characterised the Ko-Imari style reached their zenith as craftspeople filled the surfaces of vessels with elaborate designs that gave full play to their impressive skill set. Fundamentally speaking, contemporary Arita ware embodies an extension of the same stylistic trajectory.



Mukurodani kiln site (Kami-nangawarayama) (1690s to 1740s)

Reforms to Arita's production structure

Around the second half of the 1650s, a series of changes can be observed in kilns throughout Arita as part of production reforms production in the Uchiyama area. Archaeological research suggests the possibility that there was a reassessment of production structures undertaken during the 1690s.

Those changes involved the application of measures that implemented a division of labour in the overglaze enamel process, which previously had been limited to the Uchiyama area, to the Sotoyama area, and this most likely made the production of overglaze polychrome enamels impossible there. With the coming of the 18th century, overglaze polychrome enamel porcelain completely disappeared, even from kilns in the Sotoyama area where small numbers of polychrome enamel works dating to the second half of the 17th century had previously been found. Recognisable specimens of porcelain from before the overglaze enamel process also disappeared.

At the same time, it's likely that overglaze enamel workshops at the Kōbira site also shut down, and clay

moulds disappeared from the Akaemachi site around the same time, as did all traces of the production of porcelain bodies that were at a stage prior to applying overglaze decoration. In other words, it seems that overglaze painting was exclusively executed by overglaze enameller workshops as the entire area of Arita began to operate under the single manufacturing system.



Tataranomoto C kiln site (Kuromutayama) (1690s to 1700s)

The last example of overglaze enamelled sherds, and underglaze blue sherds before applying overglaze decoration to be found in the Sotoyama area.

The Sotoyama area during the 18th century

During the second half of the 17th century, the Sotoyama area produced numerous products for export to Southeast Asia. However, with the resumption of exports from Qing China in 1684, kilns in the Sotoyama area suffered a major blow as the Chinese ships that had been transporting Hizen porcelain to Southeast Asia began instead to carry Chinese porcelain. In response, kilns in the area undertook a concerted effort to switch to the domestic market that they had been fostering. Initially, a diverse variety of wares was made in relatively high quality with a primary focus on bowls and dishes. However, individual production centres gradually established their own characteristics. Whereas kilns such as Nangawarayama, Hokaoyama, and Kuromutayama, all of which were associated with production of premium and middle-grade products, continued to produce a relatively large range of objects, Hiroseyama and Ōbōyama, which produced mostly wares for the mass market, quickly narrowed the range of their offer with bowls (in the case of the former) and bottles (in the case of the latter) accounting for most of the volume of production.

By contrast, kilns in the Uchiyama area were not affected by the resumption of Qing China exports to the extent that their counterparts in the Sotoyama area were, and they continued to engage in overseas trade during the 18th century since the Dutch East India Company continued to transport Hizen porcelain to Europe.



Akaemachi site (1710s to 1740s)

Transition to products for the mass market

As the decline in exports became apparent at the beginning of the 18th century, kilns in the Uchiyama area, which had catered for overseas demand as a production centre for large volumes of premium wares, strengthened their production focussed on the domestic market. As part of that shift in strategy, most of the kilns that had been making low-grade products in the Sotoyama area had no choice but to start to produce items for customers that had not used porcelain before, namely for the domestic mass market.

Ceramics whose quality had rapidly deteriorated were apparent at Hiroseyama, whose craftspeople executed simple designs in dull-coloured cobalt blue (*gosu*) on thick bodies that had a blue hue. Around this time, it became standard practice for kilns in Hasami, whose products had exhibited even more mass-market characteristics than Hiroseyama, to produce thickly potted wares known as *Kurawanka* bowls. While

few ceramics as roughly potted as those produced in Hasami are seen in Hiroseyama, several objects with underglaze cobalt blue over white slip on stoneware clay bodies, which are often seen at kilns like Hasami and Mikawachi, have been unearthed at the site.



Hirosemukai kiln site (Hiroseyama) (second half of the 18th century)

V. The Spread of Porcelain Production Technology

Technology for Mass-production in the 19th century

With the coming of the 19th century, *konnyaku* stamping, which had been a pillar of efficient mass production until that time, disappeared from the kilns in Arita. There was also an abrupt decline in the number of vessels with the glaze removed in their interior to facilitate stacking. These type of objects practically disappeared from the Sotoyama area.

Instead, clay discs with feet (*ashitsuki hama*) appeared and entered into wide use as a method for stacking objects during firing. These discs, each of which had three or four small (cone shaped) porcelain clay feet, were placed in vessels' interior central area feet-down so that the next product could be stacked on top. The technique leaves small marks from the feet in each vessel's interior central area. The technique existed in the 18th century but only entered into widespread use during the 19th century.

A technique known as *tenbinzumi*, a firing method for mass-production also entered into use during the 19th century. In this method, a large clay disc (*hama*) was

placed on a large clay stand (*tochin*), and then another level was similarly constructed on top of that, so that products could be arranged around each clay disc. While the clay discs used in Arita were usually shaped like inverted trapezoids, cross-shaped clay discs with feet known as *takoashi hama*, the tool used at kilns in Hasami, had been found exclusively in Hiroseyama.

However, there were limits to Hizen's mass-production technology. Because Arita's producers had merely increased the size of their kilns and kiln tools since the beginning of the Edo period, their efficiency was significantly lower than other ceramic producing areas like Seto (in Aichi Prefecture) and Mino (in Gifu Prefecture), where manufactures used the firing method of stacking saggars all the way up in the kiln and a technique called *tanaitazumi* (a method of firing ceramics stacked on clay shelves). This issue was eventually resolved in Arita during the Meiji period.

Spread of porcelain

From the end of the 18th century to the beginning of the 19th century, porcelain had reached all corners of Japan, and products no longer provided added value simply by virtue of being made of the material. As demand grew, porcelain-producing kilns were established throughout Japan to fulfil regional demand. Porcelain products distributed across a large geographical area appeared, such as Seto and Tobe (Ehime Prefecture). Arita's competition was no longer restricted to Hizen, and producers there came under pressure to adopt a coherent strategy as a porcelain producing region. To that end, Arita focused its energy on high-quality, high-added-value products and undertook an effort to raise the bar throughout the arena, allowing differences to remain in terms of the number of types of products fired by individual kilns but eliminating differences of

quality. As a result, the old quality-based geographical distinctions among producing areas that had continued since the second half of the 17th century were no longer feasible, and gave way to distinctions based on the principal types of ceramics produced.



Kuromutashin kiln site (Kuromutayama) (19th to 20th century)

Characteristics of 19th-century porcelain

Stylistically speaking, 19th-century porcelain carried on with the Ko-Imari style, which was initiated at the end of the 17th century. However, products in style made popular in Qing dynasty porcelain were also produced in Arita starting in the second half of the 18th century. This development reflects the influence of porcelain from Jingdezhen, which supplanted Arita to re-establish itself as the centre of the global porcelain industry. Initially, products in the style likely represented experiments in manufacturing the latest popular items by kilns like Nangawarayama in the Sotoyama area that produced premium products. However, the style soon spread to kilns in the Uchiyama area and elsewhere as craftspeople began producing an array of different ceramic types, and by the beginning of the 19th century, large quantities were being produced by kilns that manufactured mass-market products as well.

Characteristic products included objects made with designs consisting exclusively of thin, tightly spaced lines, rather than in-filling as was traditional, and designs that were unfamiliar in Japan, for example featuring motifs like bats, Sanskrit characters, and bracket fungus. Many products incorporated marks inside their footings imitating Qing porcelain, for example using the Qianlong reign mark (*Daishinkenryū*) or a simplified version in the form of a single character. Moreover, products bearing Ming-era marks like the Yongle (*Eiraku*) reign mark and the Wanli (*Banreki*) reign mark were not unusual as Qing craftspeople also imitated works from the Ming dynasty.

Climbing kilns in Arita

With the coming of the 19th century, historical sources offer insights into the number of climbing kilns in Arita. For example, an 1814 entry in the *Memoranda on Old Records of the Sarayama Magistrate* indicates that there were 12 climbing kilns in the Uchiyama area and seven in the the Sotoyama area that lay in the territory of Arita. The source indicates that the Izumiyamahon climbing kiln (Toshikidani No. 3 kiln site) had 29 firing chambers, the largest of any kiln in the area, and that those chambers at the time were 4 to 5 meters deep and 120 to 140 meters long, making the kiln quite voluminous. The Hirosemukai No. 3 kiln site, which dates to the second half of the 18th century, had even more firing chambers - between 30 and 33. Kami-nangawarayama and Shimo-nangawarayama had 13 and 14 chambers respectively at the time but as of 1864, the Kami-nangawarayama climbing kiln (Higuchi kiln site) had six firing chambers, while the Shimo-nangawarayama climbing kiln (Nangawara Kamanotsuji kiln site) had five, indicating that Nangawarayama alone shrank quite considerably.

Uchiyama area		Sotoyama area	
(Kiln name)	(Number of firing chambers)	(Kiln name)	(Number of firing chambers)
Izumiyamahon climbing kiln (Toshikidani No. 3 kiln site)	29	Hokao climbing kiln (Hokaoyama kiln site)	10
Izumiyamashin climbing kiln (Toshikidani No. 1 kiln site)	15	Kami-nangawarayama climbing kiln (Higuchi kiln site)	13
Nakadaru climbing kiln (Nakadaru kiln site)	25	Shimo-nangawara climbing kiln (Nangawara Kamanotsuji kiln site)	14
Kodaru climbing kiln (Kodaru No. 2 kiln site)	15	Kuromuta climbing kiln (Tataranomoto kiln site)	18
Mae climbing kiln (Maenobori kiln site)	22	Ōbō climbing kiln (Kamanotani kiln site)	20
Nishi climbing kiln (Nishinobori kiln site)	20	Hirosehon climbing kiln (Hirosemukai kiln site)	16
Higashi climbing kiln (Ōdaru kiln site)	25	Hiroreshin climbing kiln (Moemon kiln site)	19
Shirayaki climbing kiln (Shirayaki kiln site)	23		
Tani climbing kiln (Tani kiln site)	24		
Shirakawa climbing kiln (Shimoshirakawa kiln site)	22		
Hiekoba climbing kiln (Hiekoba kiln site)	17		
Iwayagōchi climbing kiln (Sarugawa kiln site)	13		

Table detailing numbers of climbing kilns in an entry dating to 1814 in the *Memoranda on Old Records of the Sarayama Magistrate*

Creation of new added value

As the Ko-Imari style became standard during the 18th century, it became difficult to create added value in the same manner that possible during the 17th century. Product quality exercised significant influence on value, and it was difficult to create objectively recognisable differences in quality. Craftspeople attempted to address the situation in a number of ways. Gokushin ware, made possible by the development of techniques for firing beautiful, lustrous products, represented an attempt to address the issue of product quality from a technical perspective. The technique is said to have been invented in 1811 by Tsuji Kiheiji IX, who fired ceramics made for the imperial household. This process involves making saggars out of the same expensive porcelain as the products and applying glaze to the area where the lid and body of the saggars meet. The glaze melts during firing and creates a seal so that the product can be fired in a vacuum. However, the saggars had to be broken after firing to extract the porcelain vessel, and as a result cost considerations prevented widespread adoption of this technique throughout Arita.

Another experiment in creating new added value in the form of individual brands began around the end of the Edo period, with manufacturers applying individual

marks to products. The approach augmented the quality of products with value in the form of consumers' preferences for products from particular producers, and the trust and confidence inspired by the marks had the effect of boosting products' value. A number of producers took up the new practice, which initially derived from a merchant's initiative, and during the Meiji period it spread throughout Arita.



Toshikidani No. 3 kiln site (Izumiyama) (19th century)

Decline of climbing kilns and local colour

Use of climbing kilns that were jointly operated by producers in the same area continued into the Meiji period. However, leading producers gradually acquired their own climbing kilns, which were known as 'single-chamber kilns'. As wealthy producers acquired their own kilns and left the cooperative arrangements, the small-scale businesses that remained as stakeholders in jointly owned kilns encountered difficulty in operating their facilities, threatening the livelihoods of the associated craftspeople. Then during the Taisho period, wealthy businessmen raised money to build a new type of facility: the rental kiln. As a result of these developments, the status of climbing kilns that were jointly operated by local producers sustained a major blow.

Notwithstanding the fact that they were jointly operated by multiple producers in a given area, climbing kilns fostered local colour by allowing individual production centres to develop distinguishing characteristics. The decline of jointly operated kilns in producing districts signified a retreat from this local colour. A new era of competition founded on the distinctive approaches of individual producers had dawned.

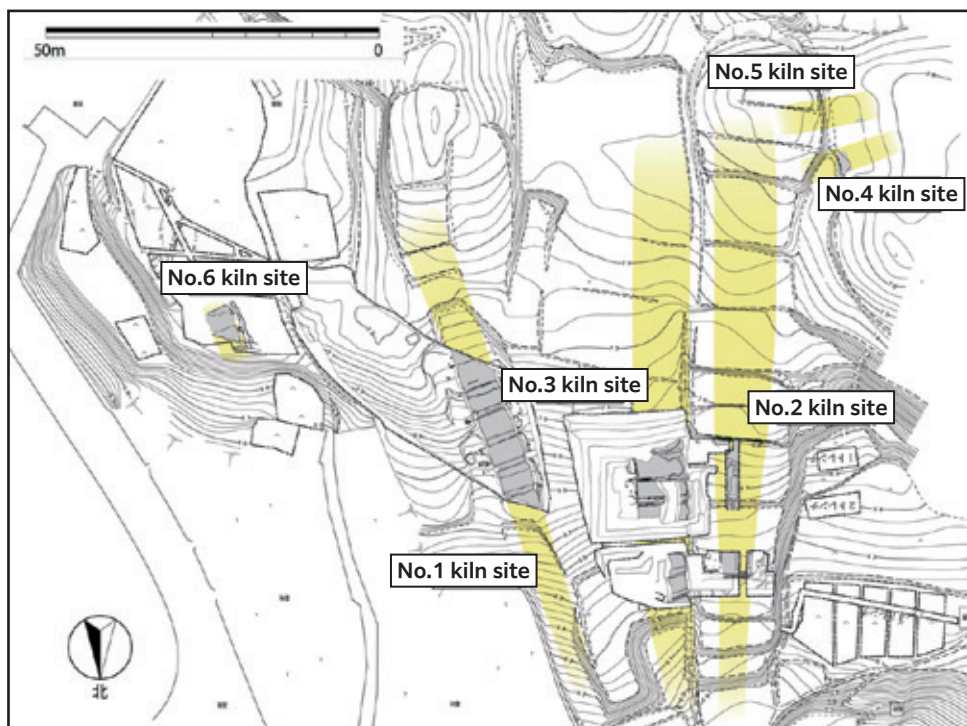
Disposal of Wasters (Failed Products) at Two Climbing Kilns (Hirosemukai Nos. 2 and 3 Kilns)



This cross-section was created by consolidating with resin the soil's stratigraphy on the wall of a trench excavated during an archaeological study. It includes waster (reject) ceramics from the No. 2 kiln (1787 to the Meiji period), which was built just to the right (west) of and slightly above the abandoned No. 3 kiln (1760s/1770s to 1787). The bottom of the cross-section consists of the floor of the No. 3 kiln's firing chamber, on top of which a scorched soil layer that does not contain ceramics has accumulated evenly to a thickness of 40 to 50 centimetres. This layer represents the collapsed ceiling of the No. 3 kiln.

On top of this layer can be found waster products from the No. 2 kiln, accumulating with the passage of each chronological period from the top right to the bottom left, appearing as if they had been thrown into the trench. As a result, debris initially accumulated (in the bottom layer) close to the No. 2 kiln but then, as the trench was filled in, the area built up over time in locations progressively farther from the kiln, forming the middle and upper layers. These soil layers accumulated over a period of between 10 and 20 years, but the ceramics changed very little over that period since the Hirosemukai kiln site produced only a few types of porcelain in large quantities for the mass market.

Layout of the Hirosemukai kiln site



No. 6 kiln site/No. 5 kiln site
(operational starting around 1640)
↓
No. 1 kiln site
(operational starting around the 1650s)
↓
No. 4 kiln site
(operational starting around the 1690s)
↓
No. 3 kiln site
(operational starting around the 1750s to 1760s)
↓
No. 2 kiln site
(operational starting around the 1787)

Arita History and Folklore Museum East | Arita Excavated Ceramic Museum

Museum Guidebook

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1-4-1 Izumiyama, Arita-cho, Nishimatsuura-gun, Saga Prefecture 844-0001

Phone: 0955-43-2678 Fax: 0955-43-4185

<http://www.town.arita.lg.jp/main/169.html>

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