

History of Japanese Colour: Traditional Natural Dyeing Methods

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Introduction

The family I was born into has followed a tradition of dyeing textiles for more than 200 years in Kyoto, the capital of Japan for about 1000 years until the Emperor moved to Tokyo in 1869. The dyeing technique I use to this day involves only natural materials including tree bark, flowers, seeds, roots and grass. This traditional dyeing method has been used in Japan for centuries, although since the invention of synthetic dyes in the 19th century, such processes are becoming less and less common. However, I strive to keep such traditions alive. I have discovered the importance of studying the history of dyeing and the use of traditional colours in Japan, learning a lot from my predecessors' achievements in textile dyeing.

Commencement of Dyeing and Weaving in Japan

It is believed that the skill of sericulture – or silk farming – came to Japan from China in around the 3rd century BC, about the time when the age of plantation agriculture started. However, at that time, people could not dye colourful yarn or weave beautiful patterns with a loom. Indeed, the repertoire of the time included only a few primitive dyeing and weaving techniques.

It is said that the Japanese people developed techniques for textile dyeing and weaving over the course of 2000 years. In fact, many dyeing and weaving implements were excavated from tombs of ancient and powerful clans of Japan. These tombs were constructed between the 1st and 7th century AD.

Moreover, a book written about the history of the Wei Dynasty (known as *Gi* to Japanese people) in China from the 2nd to 3rd century AD and it describes how the Queen of Japan called Himiko gave generous gifts of red and blue dyed fabric to the emperor of the Wei Dynasty. The book told of the Japanese craftsmen who weaved fabric using wood fibre such as hemp, paper, mulberry and wisteria that grew naturally in Japan. This took place alongside the development of sericulture in Japan. They may have dyed yarn and fabric with Bengala, a yellowish red colour pigment from the Bengal area in India, and vermillion for red and Gunjyo for blue pigment which comes from mineral ore containing copper.

Developing Skills of Dyeing and Weaving – Asuka Era

From the 3rd century, many craftsmen were invited from China and Korea and they contributed to developing the techniques of dyeing and weaving in Japan. About 1400 years ago, around the late 6th to 7th century, Japan's Emperor (established in Asuka) and the Imperial Court adopted Buddhism as the national religion. Asuka, the south of Nara city, was a small rural town at that time. Asuka became the capital where advanced cultures gathered.

Japan was recognised as 'a terminating station in the east of the silk road'. In fact, new cultural influences came from Persia, India, and West Asia via the Silk Road in those days to Asuka in Japan. As Asuka was influenced by Chinese and Korean culture, the development of unique Japanese cultural influences took hold during the Heian era.

In my opinion, the greatest historical treasure of the Asuka era is Horyu-ji temple. The temple was established in 607 by the Prince, Shotoku-Taishi. It was burnt down in 670 but reconstructed by the 8th century. This is the oldest wooden building in the world and it was registered as a site of UNESCO World Heritage in 1993.

Many examples of beautiful and exquisitely dyed and woven textiles are held at the Horyu-ji temple. The collection offers the opportunity to understand the colours typical of Japan during the Asuka era. To illustrate this, it will be useful to consider some examples from the Horyu-ji temple remains.

'Ban' is a kind of flag used in a Buddhist service. Some Bans made of brocade dyed red are believed to originate from China. The still vibrant red colour was achieved by dyeing cloth with madder. This rich colour must have enchanted people in Asuka.

In the reconstruction of the Kondo (Main Hall), wall paintings depict the image of Buddhist saints wearing red brocade (the originals were almost burned in 1949). From these examples, we are able to understand that our predecessors could dye and paint in any colour in the 7th century. As a Japanese citizen, I have pride in knowing that such precious treasures are real and that they have remained in the same place from which they were excavated many years ago.

Colours of the Nara Era

In 710, the capital of Japan moved to Nara. The colours of the Nara era are visually very appealing. It is fascinating to see that textile dyers were able to obtain such wonderful colours using simple techniques. These techniques have not been used since this time in the history of Japan.

During the middle of the Nara era, Emperor Shomu (r.724–749) who was a devout Buddhist planned to build an enormous statue of Vairocana Buddha (it means 'Buddha that shines throughout the world like the the sun') in a Great Buddha Hall. The statue (15m in height) is made from cast bronze, which was then plated with gold. The dimensions of the Great Buddha Hall are 57.7 m wide, 50.5 m deep and 57 m high. The width of the current building is approximately 33% smaller than that of the original structure, but it still ranks as the largest wooden building in the world.

The construction of the statue started in the year 745 and was completed in 751. In the year 752, the statue was consecrated and many people were invited to the ceremony. Foreign guests came from China, Korea, India and Persia via the Silk Road. Moreover, various adornments such as Bans, clothes, paintings, mirrors, dyed papers, woodworks were made for the ceremony.

Fortunately, many articles of clothing, textiles and also pigments for painting such as vermilion and dye such as Suou (sappanwood), Nikkei (cinnamon) have been well preserved. Old records include a listing of natural materials and the typical dyes produced from these materials. These historical records are in excellent condition and have been archived in the Shoso-in Treasury House of the Todai-ji temple for over 1200 years.

As disturbances of the Great War did not prevail during the Nara era, brilliant treasures and artefacts are available for research purposes and in particular provide an invaluable insight into the history of methods adopted by our predecessors and how the natural dyes developed the Japanese colour palette of the Nara era.

Origin of Japanese Sense of Colour - Heian Era

In 794, Emperor Kanmu (r.781–806) moved the capital from Nara to Kyoto, with Kyoto becoming the capital until 1869. The capital was called 'Heian-kyo'. Preceding this time, the influence of China and Korea was prevalent. However, patronage of the aristocrats at the Royal Court influenced the development of Japanese style and culture.

For example, 'Tales of Genji' written by a court lady Murasaki Shikibu about 1000 years ago was devoted to the descriptions of colours, and the amount of attention paid to colours on paper, clothing and flowers leads one to conclude that life at the court in those days was extremely colourful and that they were very conscious of colour. 'Tales of Genji' references more than 80 different names of colours (**see gallery images 2 and 3**).

One of the reasons for so many colour references has to do with the experience of the four seasons in Japan. The slow to evolve seasons allow people to enjoy the colouring of flowers in bloom during various stages of each season. Japanese people tend to be moved by the change of nature or beauty of impermanence. For example, when full-bloomed cherry blossoms scatter in spring, we feel the transience of life or when the leaves change colour from green to red or yellow in autumn, we feel sad because the season becomes lonely winter.

During the Heian era, people especially at Court, began to become sensitive to the changing elements of the natural environment during the distinct Japanese seasons. A new culture emerged where the Japanese psyche came to admire the natural environment.

The appreciation of the nuances of each season was reflected in the dyeing and weaving of goods. The craftsmen dyed clothes as if they dyed flowers that bloomed in season, and included the dyeing of textiles for kasane-layered clothing that are prototypes of kimono apparel and letter papers, to name a few items. With this direct internalisation of the seasonal changes in Japan, referencing nature and natural materials for the dyeing of textiles, influenced rapid progress in this industry.

Age of Geographical Discovery and the Colours of the Gion Festival

In late 12th century, the Samurai (warriors) gained power. However, they were deprived of political power from the Court. Nonetheless, over time, the Samurai came to assert political power until 1867. The political dominance of the Samurai was the result of power struggles during the Kamakura era (1192–1333) and also during the Muromachi era (1392–1573). Followed by the age of the Warring States period, during which several Daimyo (feudal lord) struggled for supremacy.

During 'the Age of Geographical Discovery' in Europe, the Portuguese were among the

first Europeans to visit Japan in 1543. Several European ships followed from Spain, Holland and England, for trade purposes and also for the propagation of Christianity. Although Japan continued to trade with China and Korea, the goods which the European ships carried made an impact on Japanese culture. European wares included carpets and tapestries from, Afghanistan, India or Sarasa (chintz-printed cotton) from India. The Japanese had never seen such gorgeous coloured fabric.

Of course, the Daimyo were interested in guns and bullets as they needed better weapons than those of their rivals but they were also fascinated with beautiful and exotic fabric. This also created a new league of merchants who competed with one another to buy the exotic wares from Europe.

The Gion Festival in Kyoto originated in 869 and is directly influenced by the introduction of the colourful wares of the Japanese merchants who traded with the Europeans. The Gion Festival takes place throughout the month of July and is very famous for 'Yama-Hoko (floats) Parade' on the 17th of July. The basic style of festival we see today has its origin in the 15th century and the present scale and splendour emerged in the 16th century. From around the 15th century the festival was conducted by towns people of Kyoto (called machi-syu) who accumulated powers through trade and commercial activities. Each float represents a certain part of the city and is owned, maintained, supported and paraded by the specific towns.

Each float is decorated with exquisite fabric. For example, one float is decorated with the tapestries that describe the story of the War of Troy, written in Greek mythology. These tapestries were produced in the 16th century at Brussels in Belgium. Another float features carpets styled with medallion motifs from India which was dyed with vivid crimson, whilst other floats showcase carpets crafted in Persia. These richly coloured carpets brought to Japan by European merchant ships would with no doubt, significantly influence Japanese craftsmen (**see gallery images 4–7**)

Present and Future Dyeing and Weaving

After the Warring States period, Tokugawa Ieyasu won political power and he opened the Bakufu (government) in Edo (Tokyo). The Edo era then continued for about 400 years. During the Edo era, townspeople became more affluent and they came to spend money to acquire clothing and belongings for their homes. Therefore, personal tastes were increasingly reflected in demanding the best quality and highly skilled dyeing and weaving of apparel. The improvement in the quality of the Yuzen printed kimono is one example of this.

However, the age of the Samurai terminated in the middle of the 19th century, and was followed by the onset of the modern period. At about the same time, chemical dye materials and pigments from Europe were introduced to Japan, and this had the effect of dyeing methods changing completely. Most traditional dyeing crafts in Japan stopped using natural dye materials as chemical dye materials were easy to use and less costly.

The influence of the introduction of chemical dyes to Japan, may be seen in the change in colour and style of Japanese paintings known as Ukiyoe (woodcut print). These changes impacted not only Japanese craft and culture but that of many cultures all over the world, with the loss of traditional skills of dyeing with natural dye materials.

Practice of Dyeing with Natural Dye Materials

There is no appreciable difference with mordant dyeing when carrying out operational steps for dyeing cloth or fibre. The steps include:

1. Acquisition of the plant material
2. Cleaning of the dye material
3. Extraction of the dye material
4. Watering of the dye
5. Dyeing
6. Rinsing
7. Mordant
8. Rinsing
9. Drying.

In order to colour the dye deeply and to achieve the desired colour, steps 5 to 8 have to be repeated several times.

To obtain specific colours on the fabric, a range of traditional natural dye materials are used, as outlined in the next sections.

Purple (murasakiso)

The colour purple was respected as the high class colour in Japan. In East Asia, the dye for the colour purple is extracted from the plant *Leptospermum erythrorhizon*. The Japanese name for the plant is 'murasakiso', literally, purple herbage. The roots are used for dyeing purposes. These roots are known in Japan as 'shikon', literally purple roots. Unfortunately, this plant is very weak so it is difficult to see in the natural environment these days (**see gallery image 8**).

Indigo blue (tadeai)

Unlike most other plants from which natural dyes are derived, it is possible to dye all types of fibre with indigo. Above all, cellulose fibers take well to the indigo dye and are otherwise difficult to dye with other dye materials. Furthermore indigo is one of the more non-fading and wash-fast natural dyes (**see gallery image 9**). Two indigo dye procedures are used in Japan; dyeing with fresh green leaves of the Tadeai plant and a vat dye, on which one sets the vat from the fermented dried plant material (called sukumo). Often, mixtures of dyes can be used, e.g. tadeai leaves and *Miscanthus tinctorius* (**see gallery image 10**).

Crimson red (benibana)

The benibana, literally 'red flower', is one of the oldest plants used for dyeing. It is said that Ethiopia is the original home of this plant and it belongs to the family of the chrysanthemums which is similar to the thistle. The plant came from China to Japan in the 3rd to 5th century.

The dye is extracted from the deep orange dried blossom leaves of the plant. As one can already see from the orange colour of the blossom leaves, these contain yellow as well as red dye. For dyeing however only the red dye is used. For this reason, the slightly water-soluble yellow dye must be washed out of the blossom leaves first (**see gallery image 1**).

Red (akane)

The akane (toyo akane) plant belongs to the family of *Rubiaceae* and grows predominantly in China, Korea and Japan has been used for dyeing since the Nara era. For dyeing, the roots of this plant are used and the resulting dye colour is a light yellow red when one uses it appropriately. The extraction process and the dye process are, expensive and labour intensive. For these reasons during the Muromachi era (1333–1573), toyo akane lost its importance as a dye plant in Japan.

Yellow (Kariyasu)

The kariyasu grass, literally 'easy to cut', is a widespread, wild growing stalk flower grass in the Japanese main island Honshu, and belongs to the family of rice grasses. In particular, the Ibukiyama mountain near Lake Biwa in Shiga (old name is Omi) prefecture has been known for the high quality Kariyasu district, dating from the Nara era. The landscape and extreme climatic conditions of the treeless zone of the mountain also contribute to the growth of the herbs, especially the strong variations in temperature between day and night and summer and winter. The plant produces clear and bright yellow in order to protect itself from ultraviolet rays.

Brown and grey (binroju)

The stones of the betel nut palm (areca catechu, binroju) are especially known in Asia for being a widespread strong stimulant but they are not only known for being stimulants, but dye providers. The hard stones are rich in condensed tanning agents with which one can dye grey or brown colours depending on the mordant used. The dye develops to a brown colour in an aluminium mordant, and to a grey colour in an iron mordant. It is not clear whether the dried stones of the betel nut had already been imported to Japan during the Nara and Heian era and had been used as a dye.

Green

There are no existing dye materials in nature that produce colour green; only pigments may be used to produce green colours. In nature, green may be seen everywhere but the green pigment

chlorophyll, found in plants, is very weak. It is difficult to dye to fabric with natural materials containing chlorophyll as the dye discolours quickly. For that reason, dyeing a fabric to a green colour commences with the use of indigo to dye the fabric blue. Then kariyasu grass, Kihada (family of citrus, mandarin) or *Miscanthus tinctorius* is used for the fabric to become green (see gallery image 10). This may be achieved in the reverse order of colour dyeing too.

Conclusion

Fortunately, in Japan the traditional skill of dyeing with materials from nature has not died out in the same way that it has, to some extent, elsewhere in the world. It is like a shallow stream but some dyers, such as myself, have kept the traditional skill alive, using the dye materials originating from over 2000 years ago in our fabric dyeing of today. This long history of dyeing and weaving is highly revered among the contemporary fraternity of dyers in Japan. We have great respect for the legacy of our artisan predecessors. Adopting the skill and experience of our ancestors has enabled us to maintain the beautiful qualities of the traditional Japanese colour palette. The colours derived from nature are unique and cannot be substituted.

About the Artist

Sachio Yoshioka is a textile artist and historian working in Tokyo, using only organic plants and materials and avoiding the use of chemical dyes. Organic materials include safflower, peppercorns, jujube tree and pomegranate. He also employs traditional dyeing techniques such as *kyoukechi* (in which two wooden panels are carved with intricate patterns; the dye flows into the carved areas where the textile soaks up the dye). As well as dyeing, Yoshioka also weaves. He managed to reconstruct a loom (height 4m x width 2.5m x length 8m) in order to produce the *Shishikarimonkin* pattern and its colours. It is vital to revive weaving techniques as well as dyeing techniques so that they can work in conjunction in order to produce an excellent quality of textile works. Yoshioka employs a technique called *kasane* ('layers of colour') to represent Japanese' sensitivity towards colours, seasons and nature as well as to enhance the visual impact of textile installation and its surrounding environment. The concept of *kasane* originated in the aristocratic customs and lifestyles of 11th century Japan and is applied not only to textiles, but also to papers and interiors, for instance. Now Yoshioka has reintroduced this custom into his 21st century textile materials and textile installations.

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