

AN OVERVIEW OF EMBROIDERY ARTISTRY FOUND IN SHŌSŌIN TREASURES

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It is well known that the Shōsōin Repository houses numerous works of embroidery among its treasures, but access to concrete details about these pieces has thus far been limited. This report is the result of an in-depth survey of embroidered textiles in the Shōsōin and attempts to record as exhaustively as possible the procedures and findings. We hope that it will provide the reader with the same sense of awe that the research team felt at the rare opportunity to closely examine the extraordinary treasures of the Shōsōin.

The foremost objective of this survey was to elucidate the techniques used in Shōsōin embroideries. Among these techniques, the long and short satin stitch (*sashinui*) was by far the most common, a stitch that brings out the full luster of the silk and allows for vivid design expression. The flowers and birds executed with this technique seem almost ready to come alive off their silk backgrounds. Naturally, these embroideries also exemplify the artistic aesthetics of the Nara period. In one piece, the characteristics of the long and short satin stitch are utilized to their fullest to create a landscape scene, normally considered a difficult subject in the embroidery medium. In this and other stitches used, include chain stitch (*kusarinui*) and back stitch (*matsuinui*, also known as *matsurinui*), we were deeply impressed by the extraordinary care and attention with which these works were executed.

A COMPARISON OF EMBROIDERY IN THE SHŌSŌIN AND HŌRYŪJI REPOSITORIES

Mutsuyo Sawada

Two collections form the core of extant textiles from Japan's Asuka (c. 538-709) and Nara (710-793) periods: the textiles known as Hōryūji *gire* that were donated to the ancient Nara temple of Hōryūji, now in the possession of the Tokyo National Museum, and those known as Shōsōin *gire* from the Shōsōin Repository, originally part of Tōdaiji Temple in Nara. The former date primarily from the second half of the seventh century through the first half of the eighth century, while the latter date mainly from the middle through late eighth century. An additional example from the seventh century is the embroidered curtain known as the *Tenjukoku Shūchō*, owned by Chūgūji temple in Nara.

There are distinct differences in both technique and design between the Hōryūji and Shōsōin textiles, which are especially evident in embroidery. The embroidered textiles of Hōryūji and the *Tenjukoku Shūchō* employ embroidery yarns with a high twist, and each piece tends to use only a single type of stitch. The

motifs were generally made by first stitching outlines and then filling these in with dense embroidery, creating a bold and slightly flat effect. In contrast, the Shōsōin textiles use untwisted floss and skillfully employ different stitches for contrasting elements of the composition. Also in the Shōsōin embroideries, long and short satin stitches (*sashinui*) are used to create stepped color gradations (*ungen*), the designs have a rich three-dimensional quality, and the luster and softness of the silk yarn is enhanced to its fullest extent. These differences with earlier textiles suggest that such expressive elements appeared first in Japan in the mid-Nara period.

THE DESIGNS OF SHŌSŌIN EMBROIDERY

Shigeki Kawakami

Embroidery in the Shōsōin is found on shoes, sashes, offering table mats, banners, canopies, and various other treasures, however there is not any special relationship between the intended purpose of the objects and the embroidery. One of the offering table mats studied bears an unusual embroidered landscape, how there seems to be no apparent connection between the intended purpose of this mat and its design motif. The majority of the embroideries represent birds and flowers laid out in skillful compositions that are influenced less by the eventual usage of the objects to be embellished than the textiles' shapes, as in the case of banner streamers ("legs"). The design compositions, like those on other treasures in the Shōsōin, are predominately symmetrical, typical of the aesthetics of the Nara period.

One characteristic of embroidery in the Shōsōin is the prevalence of color gradation arranged in shaded bands (*ungen zaishiki*). This coloration technique was widely employed in Tang-dynasty Chinese art, whose influence is visible in the treasures of the Shōsōin. In embroidered works, *ungen* gradations are executed exclusively in the long and short satin stitch (*sashinui*). The *sashinui* technique continued into later periods, but the foundation for this Japanese satin stitch can be found in the Nara-period embroideries of the Shōsōin.

RECONSTRUCTING THE SHŌSŌIN'S *EMBROIDERED SASH OF ALTERNATING COMPLEX GAUZES*

Yoko Tanaka

The Shōsōin treasure *Embroidered Sash of Alternating Complex Gauzes* (Middle Section, No. 104) is today comprised of four fragments. Despite its present condition, however, the high quality two-sided embroidery technique, elegant motifs, colors, and gold and silver painted decoration of the sash tell us

much about the brilliant heights to which female fashion rose during the Nara period.

This article carefully reconstructs and clarifies the original form and composition of this important textile. It finds that the original length of the sash was 289 cm, while the width measured 4 cm, and it confirms that the extant Shōsōin treasure *Fish-Shaped Amber Ornament* (Middle Section 105) originally hung from the sash at a point 153 cm from one end, in the sash's approximate center.

The sash is next compared to a similar example in the Shōsōin, *Embroidered Sash of Complex Gauze* (Middle Section 109). Close examination proved that both sashes contain a complex gauze (*ra*) ground weave with identical weave structure, coloration, and clamp-resist-dyed (*kyōkechi*) designs, suggesting a very high likelihood that the two were produced from the same fabric at the same time.

A DENDROCHRONOLOGICAL INVESTIGATION OF CONSTRUCTION MATERIALS USED IN THE SHŌSŌIN REPOSITORY

Takumi Mitsutani

Ancient architectural structures necessarily undergo numerous restorations and repairs over their long histories, leaving questions as to the actual age of their existing components. How old are the timbers used in the log storehouse (*azekura zukuri*) repository of the Shōsōin? This investigation aims to date the construction materials used in the present-day repository through a dendrochronological analysis of wood used in its floorboards and architraves (*daiwa*).

The seventeen floorboards and *daiwa* used as the subject of this investigation were those on which the wood grain was visible from beneath the floor. The research team took photographic transparencies of optimal sections of these boards and then analyzed the film with specialized software. The tree-rings were then crossdated with historical standard growth patterns for *hinoki* (Japanese cypress) wood. Using this method, we were able to confirm the age of eight of the boards. Four of the boards included rings from both the core and the outer edge of the tree, bringing their dendrochronological dates very close to the year they were cut down. Of these, three boards dated to 741, 714, and 716, placing them within the Nara period (710-794). The remaining board had outer rings dating to 1189, which means that it was probably cut down in the very beginning of the 1200s. From these results, it was learned that most of the floorboards of the Shōsōin date to its original construction in the Nara period, while a few of the boards were replaced in the beginning of the thirteenth century.

THE SHŌSŌIN REPOSITORY

Hiromu Abe

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The original repository (Shōsō) of the Shōsōin is constructed of two storehouses of similar size and shape placed slightly apart and joined in the center by a third storehouse, making one continuous structure. Some scholars have argued that this three-storehouse construction was the result of later renovations and that the repository originally comprised only the two outer buildings. Others claim that a single roof originally covered the two outer storehouses and that the open space in the center was filled in during a later construction. Concordance with these opinions is still heard repeatedly today, however, in the opinion of this author, they are based on extremely unrealistic premises. This article spells out the author's opinions as follows.

The Middle Section of the Shōsō has a slightly wider façade than the North and South Sections that flank it on either side. These proportions were deliberately chosen for architectural purposes. The Middle Section has only the additional width necessary to give it proper balance. Had it been the same width as the two outer sections, it would have appeared smaller when viewed from the front. The wider Middle Section also counterbalances the log storehouse (*azekura*) construction used on the walls of the North and South Sections. A narrow center would have ruined its integrity as a work of architecture. The proportions of the façade were a crucial factor for architects of the building; the Shōsō that stands today evidences this importance as well as the brilliant choices that were made. Such considerations make it clear that the entire three-storehouse Shōsōin Repository was built as a single structure from the start.

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The repairs made on the Shōsōin Repository in 1913 were the most extensive to date. At the time, all the treasures were stored within the ancient repository, leading to fears that damage to the building could endanger the objects themselves. For the restoration, all the treasures were removed from the Repository and the entire building was dismantled. Various repairs were made to reinforce the structure, including the replacement of rotting wood under the roof with new timbers. The following year, the treasures were moved back into the Repository, where they remained until 1960—with the exception of a short removal period during the Second World War. Today, the treasures have been transferred to separate storehouses and are no longer kept in the ancient structure. It is due, however, to the quality of the original Shōsōin Repository that these precious objects have been preserved up to the present day.

What kind of structure was it that so successfully held the Shōsōin treasures for over 1200 years? Fortunately, photographs from the 1913 restoration still exist. A dozen or so of these photographs, primarily of sections difficult to see from the outside, are reproduced and annotated in this article. Points of special interest in these photographs include (1) the structure of the interior before dismantling, (2) the procedures by which the walls were dismantled, and (3) methods used to reinforce the new wood.

TEMPERATURE AND RELATIVE HUMIDITY ENVIRONMENT OF THE SHŌSŌIN REPOSITORY, II: A COMPARISON OF SECTIONS OF THE REPOSITORY AND THE SHŌGOZŌ

Masakazu Naruse

The author has been measuring the temperature and relative humidity inside the Shōsōin Repository and other small-sized architectural structures with data loggers for the past several years. This paper presents the results of measurements over a one-month and a one-year period between 2001 and 2002.

The one-year measurements in each of the three sections of the Shōsōin Repository show the following results. In each repository, the average temperature on the first floor is 1 °C lower than that on the second floor, while the average relative humidity on the first floor, is 1.5 to 3% higher than that on the second floor.

The one-month measurements from August to September 2001 in the South Section and the Shōgozō (Sutra Repository), which is a small-sized structure, showed that the daily amplitudes of temperature and relative humidity in the Shōsōin Repository are smaller than those in the Shōgozō. The temperature and relative humidity conditions found in large-sized wooden architectural structures are advantageous for the preservation of objects.

(English translation by Melissa M. Rinne)