

8) 繊維（染織）品の安定化処理及び修理

救出された陸前高田市立博物館所蔵繊維（染織）品

救出された繊維資料の中には、陸前高田に伝わる「高田歌舞伎」衣裳類や国登録有形民俗文化財・漁撈用具を構成する「マイワイ」が含まれていました。いずれの資料も劣化が進み、脆弱化していたため、早急に安定化処理する必要がありました。安定化処理は、津波による破損の痕跡を残しつつも、被災資料に含まれる塩分除去の為に洗浄を含む処置を行い、修理を行うことを目的としています。このような脱塩を含む洗浄は、日本の染織文化財に対し経験の乏しい処置方法です。しかし今回の被災状況を熟慮した結果、資料に含有される塩分を除去することが、資料を安定化させるうえできわめて重要であり、それを確実にできる洗浄方法を構築しました。

繊維資料の劣化状況

筆者らは2011年8月下旬に、救出した500点以上の繊維資料の現地調査を行いました。救出された資料は岩手県内の博物館スタッフやボランティアによってすでに水道水による洗浄と乾燥が施され、段ボール箱に収納されていました。資料をひろげ、付着した砂を払い採寸し、可能な限り皺を伸ばし調書を作成した上で、再び元の箱に戻した後、作成した調書を基に、安定化処理及び修理を行うべき緊急性の高い資料を選別しました。

以下では、安定化処理及び修理を実施した繊維（染織）品のうち、《絹型染長着》(図1)、《マイワイ》(図2)を取

り上げ、それらの安定化処理方法について説明します。上記2資料は、材質・製作技法・保存状態や被災状況が異なっていました。そこで、それぞれの資料について安定化処理手順を構築し、処理に当たりました。

安定化処理

A. 解体

資料の解体は、使用されていた仕立て糸を部位別に分類しながら実施します。糸は再利用できるように可能な限り長いまま解くことを基本としますが、脆弱なため再利用できない糸や、糸を引き抜く際に裂を傷めてしまう可能性があり、短い切断を余儀なくされた糸については素材を同定し、新たに太さ・撚り方向が同一の仕立て糸を用意しました。仕立て糸が染色されている場合は、退色等を考慮して化学染料で染色された糸を使用しました。

イ. クリーニング

染料の色落ちの有無を調査し、繊維が健全で色落ちのない《マイワイ》は、水道水(塩化物イオン濃度3ppm以下)、次に精製水(塩化物イオン濃度1ppm以下)を入れた浴槽に順次浸漬し脱塩・洗浄を実施しました(図3)。《絹型染長着》は脆弱で、色落ちが確認されたため噴霧器で精製水を噴霧する方法で洗浄を行いました(図4)。洗浄は排液の塩化物イオン濃度を下げるため3ppm以下になるまで繰り返し、最後に精製水で仕上げ洗浄を行いました(図5)。

8) Stabilization Process and Repair of Fabrics (dyed textiles)

Salvaged fabrics (dyed textiles) in the collection of the Rikuzentakata City Museum

Among the salvaged fabric materials were the costumes used in the traditional kabuki drama theatre of “Takata Kabuki” and “Maiwai” costume, which are in the registered tangible folk cultural properties. All the materials were deteriorated and fragile and required immediate attention for stabilization. The purpose of the stabilization is to wash away the salt content by a desalination process and to repair the damages caused by the Tsunami. This type of cleaning treatment has rarely been applied to the old dyed textile of cultural heritage and the experience was limited. However it was clear that in order to stabilize the material after the severe damage caused by the Tsunami disaster, desalination was an important process to be carried out. The method of washing to insure a successful outcome was carefully developed.

Deterioration status of the fabric material

In late August 2011, Professor Nobuyo Okada and staff of Joshibi University of Art and Design conducted an on-site investigation of more than 500 pieces of salvaged fabric material. The salvaged materials had been washed by tap water and dried and placed in cardboard boxes by the staff of Iwate Prefecture museums and volunteer workers. At the investigation site the materials were taken out of the boxes to be spread out, clinging sand was brushed off, measurement were taken, wrinkles were smoothed out, and the damage status was recorded and documented. After all the materials were placed back in the boxes, those items that required the most urgent work of stabilization and repair were selected based on

the recorded document.

In this report two examples of the stabilization process and repair work of fabric (dyed textile) are presented.

They are a long kimono of stencil dyed silk (Fig. 1) and Maiwai costume (Fig. 2). They are two different costumes in material, tailoring technique, preserved status, and extent of damages and required different approaches to develop appropriate stabilization processes.

Stabilization process

A. Disassembly

In the disassembly process, threads of each part of the costume are saved for the purpose of retailoring. The threads should be saved in a long strand as much as possible, but in some cases threads are too fragile for reuse. In other cases, trying to pull off a long thread may cause damage to a panel and it is necessary to cut it into several short strands to pull out. The material of the unusable threads is identified and new replacement threads were created with the same material and thickness and twist direction. In case the old threads are dyed, new replacement threads are dyed with chemical dye in order to deter the fading.

B. Cleaning

The desalination cleaning process was done as follows. Since the “Maiwai” costume material was robust and color was not faded, it was first placed in a tub with tap water (chloride ion concentration: less than 3ppm), and as a next step it was placed in a tub with purified water (chloride ion concentration: less than 1ppm) (Fig. 3).

In the case of a long kimono with stencil dye silk, however,



図1 《絹型染長着》修理前
Fig. 1 Stencil-Dyed Silk Kimono prior to repair treatment



図2 《マイワイ》修理前
Fig. 2 *Maiwai* prior to repair treatment

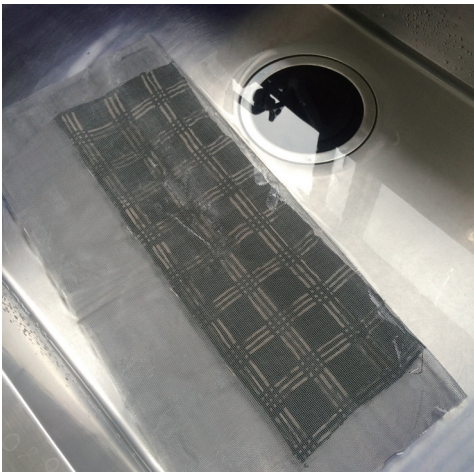


図3 《マイワイ》共衿
浴槽における洗浄
Fig. 3 The *tomoeri* collar of the *Maiwai*, being washed in a tub

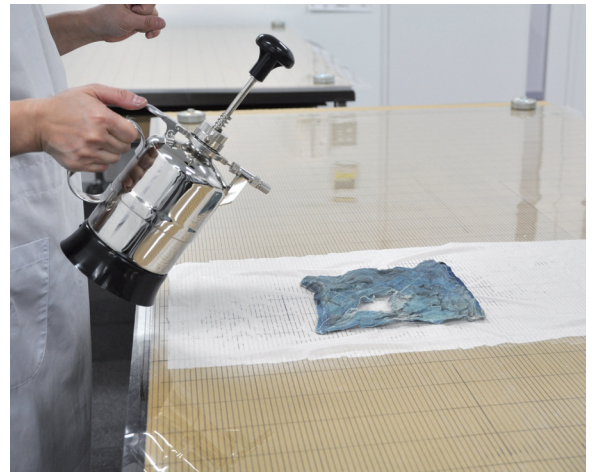


図4 《鮫小紋袴》マチ 噴霧器による洗浄
Fig. 4 The *godet* of the *Same-komon* (shark skin pattern) *Hakama* (traditional wide pants), being washed with an atomizer

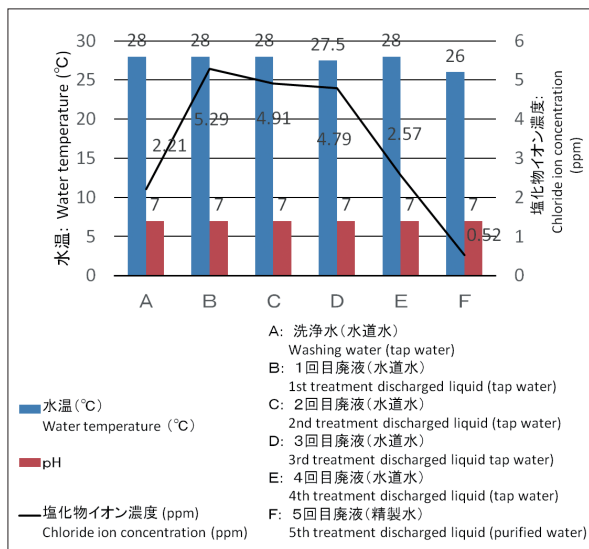


図5 《マイワイ》右裏身頃 洗浄時塩化物イオン濃度推移
Fig. 5 The main back part (right side) of the *Maiwai*. There was a change in chloride ion concentration during the washing process.

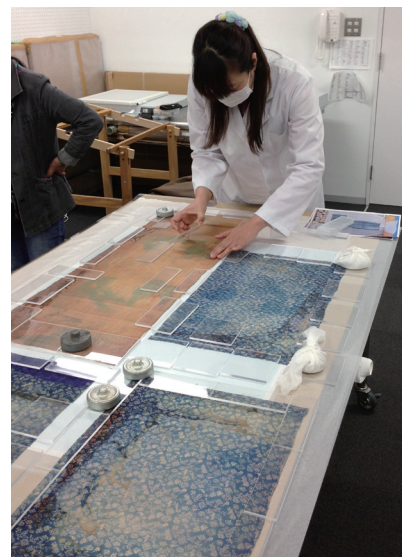


図6 《絹型染長着》整形
Fig. 6 Shaping a Stencil-Dyed Silk Kimono

ウ. 整形

洗浄を終えた資料は、グリット線を記入した透明フィルムの上に資料の経糸と緯糸が歪まないように置き、洗浄前に計測した寸法を確認しながらアクリル板、重石を置いて形を整えました(図6)。整形を行うことにより資料の布目は経糸と緯糸の歪みが直り地の目が安定しました(図7a・b・c・d)。

エ. 修理・接合

資料の損傷は被災前の物か否か、判別が困難でしたが、陸前高田市立博物館および岩手県立博物館と協議の上、今後の取扱いや展示に際し、損傷が拡大することのないよう、裏側に修理裂を当てて修理を行いました。解体されたパーツごとに、全体的に損傷がある資料には裂の裏側全体に、部分的な損傷のある資料にはその部分の裏側に、化学染料で同色に染色した同素材もしくは資料に負担をかけない天然素材の裂を当て、同様の糸を用いて修理しました。修理は日本刺繍で「菅縫」、欧風刺繍では「コーチングステッチ」と呼ばれる技法を用い、経糸に平行に糸を渡し、緯糸と平行にその糸を留める作業を行いました(図8・図9)。シミについては被災前のものか、被災によるものか、あるいは応急処置作業時の洗浄によるものかの判別が困難であったため、積極的なしみ抜きは見合わせました。使用時の損傷が確認された資料については、

the fabric was fragile and the color fading was observed. Washing was done using an atomizer spraying mist of purified water repeatedly (Fig. 4). The spraying was continued until the discharged water indicated the chloride ion concentration was less than 3 ppm. Lastly the material was washed in purified water. (Fig. 5)

C. Shaping

Washed fabric was carefully placed on a clear film with grids to avoid the distortion of the warp and the weft. The shaping was carried out by placing acrylic boards and weights to conform with the measurement obtained prior to the washing treatment (Fig. 6). Through this process a distortion in the warp and the weft was corrected and the weaves of the fabric was stabilized. (Fig. 7a - d)

D. Repair and retailoring

Based on the discussions with the staff of Rikuzentakata City Museum and the Iwate Prefectural Museum, repairs of fabrics were done by patching the backside of damaged parts to prevent worsening the damage in handling of the material and in display activities.

The repair work was carried out differently depending on the size of the repair. In case an extensive damage was to be repaired, the entire panel was patched on the backside. In case the damaged was a small area, the patching was placed to cover the area. The material and the threads used for patching were of the same material and the chemical dye was used to match the original color.

The sewing techniques used for retailoring was a Japanese embroidery technique, “suganui” which is an equivalent of

周囲を星留するなどして損傷拡大を防ぐための修理を行いました。

修理を終えた各パーツは修復前の縫製方法によって仕立て、全体のつり合いを確認しました(図10・図11)。

オ. 保管

仕立てが終わった資料は、保管用の中性保存箱に入れて保管し、定期的に点検を継続しています。

安定化処理結果

筆者らはこれまで、わが国の絹染織文化財を修理するに当たり、洗浄を実施することは稀でしたが、今回、海水損により脆弱化し、色落ちする資料に対しても、あえて洗浄処置を施しました。処理の結果は良好で、繊維(染織)品の解体・洗浄・糸による修理工程の中で、被災の痕跡をとどめつつも状態を安定化させる処置に一応成功しました。このことは、わが国の繊維(染織)品修復における重要な一歩といえるでしょう。

使用機材等:東興化学研究所ハンディ塩素イオンメーター TiN-5102i、KEYENCEデジタルマイクロスコープVHX/SUGITOHx50、Whatman pH Indicator

岡田宣世・大崎綾子(女子美術大学)

Western embroidery technique “coaching stitch”. Thread is placed across the surface of the fabric parallel to the warp, then fastening stitches are applied parallel to the weft. (Fig. 8, Fig. 9) In addition, damage caused by the use as costumes in the past was repaired in order to prevent further deterioration. As for the stains, it was difficult to determine whether the stains appeared before or during the disaster or by the emergency washing treatment after the disaster. No active stain removal treatment was done. The costumes were retailored using the original sewing techniques. Finally overall balance of each costume was obtained.

E. Storage

Finished costumes were stored in anti- acid cardboard boxes for conservation. The status of the condition is checked on a regular basis.

Result of the stabilization process

It was a bold decision to carry out a rarely used washing treatment for the old dyed silk material designated as important to Japanese cultural heritage. The fabric was fragile and the color was bound to fade, but the damage caused by Tsunami seawater required the stabilization process we developed and resulted in a successful outcome. This is an important step forward towards the preservation of dyed textiles in Japan.

Equipment used: Handy Chlorine Ion Meter TiN-5102i of Toko Kagaku Co., Ltd. / Keyence Digital Microscope VHX/SUGITOHx50/ Whatman pH Indicator

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図7a 《マイワイ》共衿 洗浄前
Fig. 7a The *tomoeri* collar of the *Maiwai*, before being washed

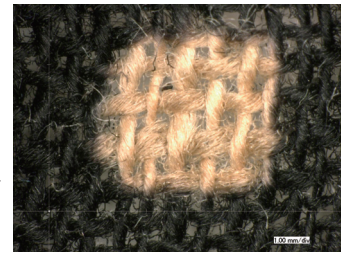


図7b 《マイワイ》共衿 洗浄前 (木綿) x50
Fig. 7b The *tomoeri* collar of the *Maiwai*, before being washed (cotton) x50



図7c 《マイワイ》共衿 洗浄後
Fig. 7c The *tomoeri* collar of the *Maiwai*, post-washing

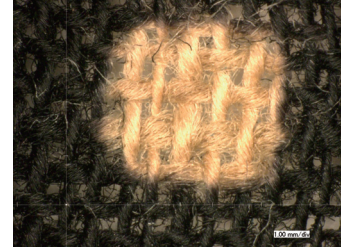


図7d 《マイワイ》共衿 洗浄後 (木綿) x50
Fig. 7d The *tomoeri* collar of the *Maiwai*, post-washing (cotton) x50



図8 《絹型染長着》衿 (部分)
Fig. 8 The partial coloration of the Stencil-Dyed Silk Kimono

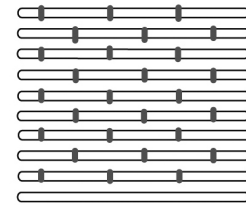


図9 菅縫 (すがぬい) 縫い方
Fig. 9 *Saganui* sewing method



図10 《絹型染長着》修理後
Fig. 10 The Stencil-Dyed Silk Kimono after being repaired



図11 《マイワイ》修理後
Fig. 11 The *Maiwai* after being repaired