

*Conservation Treatment for the Barkcloth Collection*



**Heritage Conservation Centre**

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## **Introduction**

A programme of conservation and storage improvement for fifteen Southeast Asian barkcloth vests were selected as priority to undergo conservation treatment. This programme aimed to give the barkcloth vests a longer life and allow better access to the collection for study. Some of the barkcloth vests were acquired in 1922 by the Raffles Museum for an exhibition entitled 'Malaya Borneo Exhibition' (Gretchen Liu, 1987). During the exhibition, large numbers of handicrafts were either purchased or given by the Governments of Sarawak and British North Borneo. Some of the pieces were last displayed in the 1980s. The collection was kept folded or stacked on top of each other in a store room with no environmental control for many years.

The collection was later transferred to a custom-built repository with environmental control in the late 1990s. However, due to inadequate resources, the collection was still kept in their original condition, folded or stacked. Following a survey of the kept collection, a programme of conservation and storage improvement to arrest their deterioration condition was organised.

## **Condition of the Barkcloth**

As the collection was previously kept in an unsuitable environment, the collection suffered severe physical, mechanical, and biological deterioration. According to Dale Paul Kronkright (1990) physical deterioration was mainly caused by interplay between load and force; structural stresses resulted from swelling and shrinkage, while changes in dimension and molecular structure were caused by thermal and light energies. Mechanical deterioration resulted in tears, wear and abrasion, related deformation, and applied soiling and staining. Biological deterioration was caused by attacks from fungi, mold bacteria, insects and rodents. These factors contributed to loss and weakening of the material structure, staining, distortion, and loss of ethnographic deposits.

With ethnographic objects, it is sometimes very difficult to define which mechanical deterioration is ethnographic in nature and which is through neglect or improper handling while in storage. Evidence of deterioration while in use prior to collection is an important part of what we want to conserve. Wear and tear, distortion, previous repairs, and stains resulted from past usage established the cultural context and are

important sources of information that potentially allow us to build a picture of the lifestyle of the people. Evidence related to cultural use and context was considered throughout the process of the conservation treatment, so that these important ethnographic evidences were not lost.

## **Conservation**

### **Pre-treatment spot tests**

- pH test – pH test strip was used to measure and determine the acidity level of the objects. Most of the objects measured at pH 6 which was slightly acidic. This was considered a normal pH level for bark material.
- Water absorbable test- this test was carried out with a drop of deionised water on the barkcloth vest surface and observing the effect on the barkcloth vest after a period of time. The result of this test would help the conservator to better monitor the objects during humidification treatment. The test would also help to alert the conservator if there would be water stains or if any coating or sizing is on the object.
- Colour run test- this test involved a drop of deionised water on the cotton linen or threads and subsequently blotted off with blotting paper. The test was performed on some of the barkcloth that were lined with cotton linen or cotton threaded at the edges vests. The results showed that the blue coloured cotton was stable but not the red coloured cotton.

## **Cleaning**

All the barkcloth required intensive dry cleaning and some required minor wet cleaning with chemical to remove paint spots. Most of the barkcloths were heavily infested by insect previously (Refer to Fig 1) and left with lots of insect frass trapped in the fibres. Cleaning of the insect frass and dust only required the use of a soft brush and vacuum cleaner (Ref to Fig 2). For stubborn dirt and paint spots, chemicals were used with cotton swab rolling lightly in order to remove them. Unfortunately, some paint spots have been embedded into the fibres and could not be removed without damaging the fibres, some of these spots were thus left as they were.



Fig1. Damages from Insect



Fig 2. Insect frass found on the object

### **Humidification Treatment**

Each barkcloth vest was placed in a humidity chamber. The humidity within the chamber ranged from 60-80% relative humidity (RH) with a pool of deionised water and a small portable thermo-hygrometer was placed in the chamber to monitor the RH level (Refer fig 3). Each object was interleaved with Gore-tex and plastic mesh tray was placed in the chamber to prevent water from being directly in contact with the objects. The full process lasted about 10 to 20 hours depending on the severity of the folds and creases on the objects. When the barkcloth vest is “relaxed” sufficiently, the creases and fold were then carefully smoothed and small sand bags were placed on top of the barkcloth to flatten it. The barkcloth would be kept in the chamber for another few more hours to ensure that it has fully “relaxed” to its original flatten state. The final state was to allow the barkcloth to dry very slowly to prevent too much “shock” caused by the fluctuation of the RH that might result in distortion and cause further unnecessary stress to the object (Refer to fig 4 and 5 for example of before and after humidification treatment). Some of the very stubborn folds and creases cannot be totally flattened due to the severe damage down to the fibre structures.



Fig 3. Object placed in a humidity chamber for humidification treatment

**Object before and after humidification Treatment**



Fig 4. Before humidification treatment



Fig 5. After humidification treatment

## **Repair**

One of the barkcloth vests (accession n no 1992-00559) was particularly poor in condition and needed major conservation treatment. Forty three hours were spent to treat this barkcloth. It suffered from major losses itself and 40% loss on the beads. On receipt, the barkcloth had an irregular shape with threaded glass beads sewn on. The barkcloth vest was very thin and could not hold the weight of the glass beads (Refer to fig 6-7). Under stress, it caused major structural damages. The beads were either hanging loosely, detached or some parts were entangled together (Refer to fig 8-9). As the structural condition of the barkcloth was very poor, it was decided that Japanese tissues be used to provide the much needed additional structural support. To prevent further losses of the beads the loose beads had to be re-threaded or stabilised to reduce movement of the beads. A soft sculpture was made to give the barkcloth better support (Refer to fig 10)

## **Condition of object (accession no 1992-00559) on receipt**



Fig 6 Before treatment (front view)



Fig 7 Before treatment (back view)



**Before and after treatment**

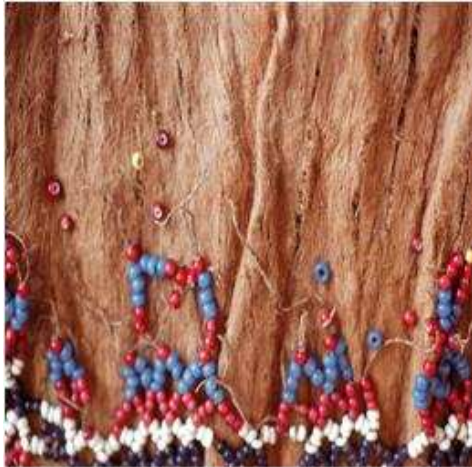


Fig 8. Beads loss and loosely strung on the thread



Fig 9. Beads stable on the barkcloth vest with Japanese paper.

**Object after treatment**



Fig 10. Object after treatment

### **Soft sculptures made for storage support**

The treated barkcloth vests are now supported by made-to-measure soft sculptures using foam, polyester wadding, wrapped with tyvek. The foam was covered with polyester wadding to provide cushioning and support for the barkcloths. Tyvek was chosen for the barkcloth because it is light in weight, soft, absorb little or no moisture and its flexible quality allows it to be easily formed into any shape. It is also commonly used for mounting and storage purposes for textile objects. Cotton linen tapes are also used to lightly tie around the barkcloth vests to hold it in place to prevent distortion.

### **Conclusion**

In summary, the project has preserved the vests from further deterioration caused by improper storage so that their significance is retained in its tangible form (design, materials, construction etc) and evidence relating to the historical or cultural context in which they were created and used. To date, fifteen of the barkcloth vests have been conserved. Two hundred and thirty hours were spent on conservation treatment and storage improvement which have greatly improved access to this collection.



### References

- Gretchen Liu, (1987), *'One Hundred Years of the National Museum Singapore'*, Singapore, Robinson Offset Printing Co. (Pte) Ltd.
- M.E. Florian, D.P. Kronkright, R.E. Norton (1990), *'The Conservation of Artifacts Made from Plants Materials'*, *The J. Paul Getty Trust*.