

Two costumes featured in the new decorative and design gallery at the Powerhouse Museum: The conservation of Mary Piper's ball gown and the reproduction of a lost button for a Victorian mourning gown.

Suzanne Chee
Powerhouse Museum

Abstract

This paper discusses the problems and solutions in conserving two significant costumes featured in a new permanent gallery dedicated to the decorative arts at the Powerhouse Museum, Sydney. *INSPIRED design across time* exhibition draws upon the museum's collection of Australian and International decorative arts and design. Over 800 objects are on display, 40 costumes and many related textiles are showcased in a gallery over 1000-metre square. One prominent costume to be included into the gallery is a ball gown owned by Mary Ann Piper in Sydney during the 1820s. The second costume comes from the Museum's collection of Victorian mourning dress and accessories. The method of reproducing a new fastening to replace the missing button will be discussed.

Introduction

In 2005, the Powerhouse Museum celebrated its 125th birthday. During this year, a new gallery dedicated to the decorative arts was opened. *INSPIRED design across time* exhibition draws upon the museum's collection of Australian and International decorative arts and design. Its focus was to uncover the way designers, makers, artists and industries interact to make objects. Since this new gallery lies at the foot of the entrance hall, the museum designers and architects saw the opportunity for a strong visual impact. The exhibition includes numerous pieces of costume. One outstanding costume featured in the exhibition is Mary Piper's ball gown. During the 1820s, the Piper family was the most prominent family of colonial Sydney society. Gowns of such great provenance are a rare find. Before treatment the gown was in a fragile state and the process of bringing the gown to a presentable state will be discussed. Another costume, a Victorian mourning dress was typically embellished with references of

death by way of surface decoration such as symbolic buttons. One button was missing on the skirt of this costume. The steps for reproducing the missing button will be outlined.

Mary Piper's ball gown

Mary Ann Piper and colonial Sydney

Mary Ann Sheers was born in Sydney in 1789 to parents of First Fleet convicts. From the age of fifteen years, she began a liaison with Captain John Piper, a member of the New South Wales Corps. Together they had 13 children and their 35-year marriage lasted until his death in 1851. (Figure 1) Despite Mary's origins, the couple played a prominent role amongst Sydney's elite. Today, her ball gown displayed in the Powerhouse's *INSPIRED across time* exhibition, is presently owned by direct descendants of Mary Ann and Captain John Piper.



Figure 1: *Portrait of Mary Ann Piper* 1826 by Augustus Earle (1793-1838), Mitchell Library 2ML672, State Library of New South Wales, Sydney, Gift of Bertha Dale and R.H. 1921

The Pipers were one of the wealthiest families in the colony. The Captain made his fortune from receiving a monetary percentage from custom duties, excise on spirits, harbour dues, control of lighthouses and crime on the water. During his lucrative career, they acquired vast areas of land in Sydney but most famously they built a large neoclassical villa called Henrietta Villa at Eliza Point, now Point Piper. The house no longer stands but it is almost certain they would have entertained and hosted many grand balls for Sydney's social elite.

Description of Mary Piper's ball gown

The style of the Mary Piper's ball gown follows London fashions from the 1823-1825. (Figure 2) During this period, the styles were moving away from pure delicate lines of the early 1800s to a more robust style. One strong indication of this change is the style of the hemline; they became visually heavier with much adornment. On this costume, bands of brown and pink satin fabric encircle the hemline below applied fabric in a scalloped design, piping, leaves and ribbons. The puffed sleeves are also treated with much adornment.

From the 1820s, women could purchase yardage and trimmings in local shops and have garments made by seamstresses. For the highly fashion conscious, the latest fashions and acces-



Figure 2: Mary Ann Piper ball gown. (Photography by Nitsa Yioupros.)

sories may have been ordered and purchased in Europe through friends, and shipped to Australia. This may have been the case for Mary Piper's ball gown. Judging by the quality of the silk fabric used for Mary Ann's gown, it was likely to have been sent to Australia from France or England. Subtle shades of pink, brown and yellow grosgrain stripes are incorporated into the weave of the fabric.

The skirt is smooth at the front but gathered at centre back. The appliquéd surface decoration is in high relief. Two main vines wrap around the hemline and climb to a narrow point below the breasts. They extend up onto the bodice and out towards the shoulders. On either side of the vines, pairs of delicate leaves are the highlight of the costume. Each leaf is beautifully made; the use of fine pink silk organza fabric is edged with pink satin ribbon. At the base of each leaf, a pipe edged brown satin teardrop is used to give each leaf depth and body.

A lace collar was attached along the neckline but it is questionable whether it belonged to the original garment. The common attire for women of this period was the *fichu*, this scarf-like item of clothing was tucked or draped over the gown. After consultation with curators, permission was sought from the owners to remove it for display. Following the style of the day, a width of dyed fabric was sewn between the bodice and skirt to accent the region.

Condition

Areas of damage on the costume are highly visible and previous repairs have distorted the garment in many places. Much of the wear can be seen on the bodice regions particularly at the centre back and around the underarms. The fabric has become threadbare and tears are visible. Along the back opening nylon tulle was used to reinforce the edges of the original garment. When the tulle was released, it became evident that the fabric was folded onto itself.

The fabric on the gown is relatively strong but suffers from tears. Areas of discolouration are also visible on many regions of the skirt.

The decorative leaves have endured the most damage and losses were noticeable over the entire gown. The fine organza fabric used to form each leaf has deteriorated, leaving each leaf frayed and damaged. There are many areas of missing pink silk fabric on the two main vines revealing the cotton wadding used inside to enhance its form. Similarly, a section of the back hem has suffered a similar demise.

Treatment

Dyes: Lining silk and silk crepe fabric were dyed in several shades of pink using Ciba Geigy Irgalan™ yellow GRL, bordeaux EL and grey BL dyes

0.25% depth of shade was used for all colours
Assists used: 4% ammonium sulphate in a 10% stock solution
4% sodium sulphate in a 10% stock solution

Dye bath 1	40% yellow	20% grey	40% bordeaux
Dye bath 2	40% yellow	20% grey	40% bordeaux
Dye bath 3	50% yellow	10% grey	40% bordeaux
Dye bath 4	40% yellow	40% grey	60% bordeaux

Leaves: Each leaf was originally attached in 2 places on the main body, at the tip and under the main vine. The tip of each leaf was separated from the base fabric to facilitate repairs. Stitches securing the satin edges of each leaf to the crepe base were released on the underside. Newly dyed crepe fabric was cut in the shape of the leaf and inserted underneath the

original fine gauze. The new backing fabric was stitched to the inside of the satin edge, then the original satin was folded over and restitched. Some stitching was executed in silk monofilament threads to secure the remnants of the original fine gauze to the new support. Once the leaf was completed, it was reattached to the dress.

Vines: To repair the missing areas of the vines, pieces of dyed silk fabric were inserted into the void and secured with silk threads.

Hem: The damaged hem was backed with dyed silk fabric and a couching stitch was executed in silk threads. The repaired area was covered with dyed crepe fabric to give further strength and to encase loose fragments.

Bodice: The nylon tulle was removed and the folded edges were released. Tears and losses were backed with dyed silk fabric and a couching stitch was executed to reinforce the new fabric to the old.

Skirt: Previous repairs were released. Silk fabric dyed to match the damaged area was stitched underneath the tear to reinforce the main fabric. A couching stitch in silk monofilament thread was used to stabilise the tear to the new backing fabric.

Display

Layers of cotton petticoats were made to give the correct 1820s costume silhouette. Mary Ann Piper's ball gown was dressed onto an Empire shaped Wacoal mannequin and her hairstyle was formed from paper strips in a style typical of the era.

A Victorian mourning costume

The costume displayed in the *INSPIRED design across time* exhibition is an elegant and beautiful example of Victorian mourning attire. This garment dated around 1885 is likely to have been worn by a widow in her second or third stage of a lengthy mourning period. It is made of black matt silk and decorative uncut pile fabric in a floral design.

The main decorative element of the costume is the use of buttons. There is a total of 20 buttons; 14 are featured on the jacket and 6 buttons

(one missing) continue the decorative flow onto the sleeveless over-garment. They are 3.5cms or 1 ½ inch in diameter. The raised motifs are highly burnished while the lower region is matt and etched. No patent marks are visible on the backs of the buttons and small circular metal shanks are used. The steps for reproducing the lost button will be discussed later.

Victorian picture buttons

Queen Victoria had a large impact on the button industry after the death of her husband Prince Albert in 1861 and black remained the predominant fashion colour for the next twenty years. Mourning jewellery, clothing and embellishments followed a strict protocol; black materials such as jet, onyx, gutta percha, French jet and bog oak were commonly used for mourning jewellery because of their flat black appearance. (Fink & Ditzler 1993)

The production of ‘picture buttons’ and ‘story buttons’ was popular during this period and the scene represented on the buttons of the Powerhouse’s mourning costume is an ideal example of Victorian sensibility. (Figure 3) Often they used scenes from Greek mythology, operettas; took characters from novels, poems and fables; and revived Chinese and Japanese themes. (Fink & Ditzler 1993).



Figure 3: Detail of original button. (Photograph by author.)

The scene featured on all the buttons of the Museum’s costume derives from Greek mythology, symbolising the journey from earth to the after-life. We see a smiling man steering his feeble sailing boat across a river. According to the Greek myth the ferryman, known as Charon, was commonly perceived to have transported the souls of the newly dead across the swampy river Styx. This river formed the boundary between earth and the underworld known as Hades.

Another symbol identified on the button is the image of a swan. During the early years of Christianity, the swan was a popular image due to its whiteness, a symbol of purity and chastity. Moreover, a swan harnessed to a boat signified the Greek sun god Apollo. Over time this has become a symbol of Christ leading his church through the waters of mortal life and onward to the heavens. Also well known is the belief that a swan only sings when it is about to die. Hence the ‘swansong’ became an omen of death.

Methods of identifying buttons of the Victorian period

Seam line: Manufactured buttons of the Victorian period have a visible seam on the surface suggesting the button was formed in a mould. A seam line is detected on the Museum’s button.

Chemical test: The test for cellulose nitrate (diphenylamine test) gave a negative result on the Powerhouse Museum’s mourning button.

Insect damage: No insect damage was detected on the Museum’s buttons. This may suggest they were not fabricated from protein products such as casein or from natural products such as shellac, horn or *bois durci* a product made from wood and blood.

Indentations: No ‘pick’ marks, are visible on the buttons of the mourning costume. These indentation marks made by a sharp tool to remove the button from the mould, are often visible on the backs of buttons made of horn or horn composite.

Trademarks: Often found on the backs of buttons, it is a good indicator for identifying their origins.

Taste test: Certain products may give a particular taste. This test was performed on the mourning costume button but a verdict was difficult to attain.

Many new products were invented and used for the production of buttons in the Victorian era. After examination, the buttons found on the Museum's mourning costume were most likely to be made from either vulcanised rubber or Gutta Percha.

Vulcanised rubber is made by heating rubber with 25-50% sulphur. This process hardens it and produces a plastic-like appearance. The commonest form is an imitation of jet, widely used during the Victorian period in the production of buttons, brooches, bracelets and necklaces. It was produced in many colours but black and dark browns predominated.

The American Charles Goodyear first used this technique in 1839, but it was his brother Nelson Goodyear who was granted a patent for button making in 1851 (Fink & Ditzler 1993). The Goodyear patent mark was visible on the back of buttons, but pirated buttons from England and France were also available on the market. Their marks tried to imitate the Goodyear logo but lack some required trademark information (*Hard rubber buttons & Some Look a likes*).

A frequent test performed by collectors is the hot needle and smell test. By melting a small area on the back of the object, an odour of sulphur is sought for vulcanised rubber. This method for identifying the material was not performed on the Powerhouse Museum's mourning costume.

Gutta Percha: is a rubber like substance made from the sap of the Palaquium tree, a native of Borneo and Malaya. It was first brought to England in 1843 and the Gutta Percha Company was quickly established in 1845. Buttons made from Gutta Percha have no backmarks unlike buttons made with vulcanised rubber. When a taste test is applied, Gutta Percha is known to taste salty. (*Hard rubber buttons & Some Look a likes*).

Making a negative mould and producing a resin positive

A replica of the missing button was made and reattached to the mourning costume. The steps below outline the procedure of making a mould cast from an original button and reproducing a new button using a modern resin. (Figure 4)

- Combine equal portions of catalyst (white) and base (red) *3M Express Impression putty*. Roll between fingers until an even colour is achieved.
- Press the putty onto the surface of the button and allow it to set, approximately 10 minutes. The mould will distort if released too early. Tip: reserve a small amount from the mixed putty and set aside. Use this putty as an indicator for the setting time.
- Gently peel the putty away from the button.
- Swab the surface of the original button with petroleum spirits to remove any residue.
- *Hxtal NYL-1* epoxy resin is used to fabricate the new button. Ratio of 3:1, resin to hardener is gently mixed together in a glass beaker. Dissolve the black pigment with a small amount of mixed resin; slowly increase the resin until all combined.
- To reduce air bubbles in the resin mixture, place the glass beaker in a *bain-marie* of warm water for several minutes.
- Pour the mixture into the mould.
- Release the button from the mould after 7 days. To imitate the shine on the upper regions of the button, fine sandpaper is used to burnish the surface. Sandpaper is also used to even the edges around the button.
- The button's shank is adhered to the back of the button with *Hxtal NYL-1* epoxy resin.

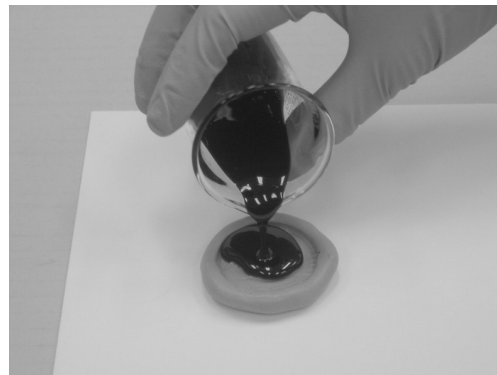


Figure 4: Pouring epoxy resin into mould. (Photograph by author.)

Conclusion

The new gallery was opened with much fanfare in September 2005. At no other time has the Museum exhibited as many pieces of its own collection of ceramics, silver, costumes, textiles, glass, furniture and jewellery. One highlight is Mary Ann Piper's ball gown. With its provenance dating back to colonial Sydney, the gown is a wonderful and rare example. The technique described for making moulds cast from objects provides a practical and straightforward method to reproduce missing components.

References

'Buttons-identifying and testing for materials', website

<http://www.buttonimages.com/collector-info/identifying.htm>

<http://www.lazyjacks.org.uk/button2.htm>, accessed 12/04/2006

'Captain John and Mary Piper' website

<http://users.tpg.com.au/tjbatey/captainjohnandmarypiper.html>, accessed 13/12/2005

Fink, N & Ditzler M, 1993. *Buttons the collectors guide to selection, restoring and enjoying new and vintage buttons*, Quintet Printing,, London.

'Hard Rubber Buttons & Some Look-alikes',

Vintage Buttons

<http://www.vintagebuttons.net/rubber.html> accessed 12/04/2006

'John Piper' (military officer), *Wikipedia*

[http://en.wikipedia.org/wiki/John_Piper_\(military_officer\)](http://en.wikipedia.org/wiki/John_Piper_(military_officer)), accessed 20/04/2006

Kemper RH, 1977, *Costume*, Newsweek Books, USA.

Kerenyi C, 1981, *The Heroes of the Greek*, Thames and Hudson, USA.

Mernick P & Mernick H, 'Victorian Plastics'

<http://www.mernick.co.uk/vicplas.htm> accessed 12.04.2006

Mitchell L, 2003, 'Mary Ann Piper's Ball Dress', *The World of Antiques & Art*, February- July. Australia.

'Styx' (mythology), *Wikipedia*

http://en.wikipedia.org/wiki?River_Styx accessed 13/04/2006

Materials

Ciba Geigy dyes

235 Settlement Road

Thomastown

Melbourne 3074

Victoria

AUSTRALIA

Tel.: +61 3 9282 0600

Fax.: +61 3 9282 0728

customerservice.au@cibasc.com

Black pigment

Conservation Emporium

18124 Wedge Parkway # 458

Reno Nevada 89511

775-8520404

Dacron™

Spotlight, Australia

Hxtal NYL-1

Conservation Emporium

18124 Wedge Parkway # 458

Reno Nevada 89511

775-8520404

3M Express STD

STD firmer set Vinyl Polysiloxane Impression

Material Putty

3M Australia

950 Pacific Highway

Pymble, NSW, 2073

Silk crepeline

Restore Products

2 Talbot Rd

Bowdon Altrincham

Cheshire WA14 3JD

Email: contact@restore-products.co.uk

Lining silk

The Silk Shop

Piccadilly Arcade

Sydney

Wacoal mannequins
103 Minamimachi Sijijogoyonouchi
Simogyoku Kyoto Japan

Acknowledgements

I would like to thank my colleagues at the Powerhouse Museum: Lindie Ward, Glynis Jones and Louise Mitchell. Many thanks to our Objects conservator Gosia Dudek for teaching me the tricks of mould making and reproducing new components. Also to our department's photographer Nitsa Yioupros for the images of Mary Ann Piper's ball gown. Lastly, to Quentin and Lesley Bland who provided support and enthusiasm regarding their Piper family heritage.

About the Author

Suzanne Chee has been associated with the Powerhouse Museum since 1985. After completing her first degree at Sydney University she was fortunate enough to be involved with the opening of Powerhouse Museum in 1988. For the following 2 years, Suzanne completed at Masters Degree in Museum Studies (conservation of costumes and textiles) at the Fashion Institute of Technology in New York. While working as an intern at the Costume Institute at the Metropolitan Museum of Art, Suzanne gained much insight into costume conservation and display. Since returning to the Powerhouse Museum in 1990 Suzanne has been involved in many exciting costumes exhibitions from haute couture to the popular arts.