



Grand Canyon Waterfall

Belinda T. Orzada, Ph.D. University of Delaware

Key words: natural dyes, sustainability, apparel design

Use of natural dyes provides an opportunity for apparel designers to expand the creative process and follow the unknown. Exploring new dyestuff and dye techniques provides creative problems to solve. The purpose of this design was to explore a socially responsible and sustainable dye technique and utilize the resulting fabric in a design that would connect to the natural environment and provide a statement of social responsibility.

The research process and design concept for *Grand Canyon Waterfall* evolved during an exploration of family vacation possibilities. Preserving our natural resources through dedicated green spaces like national parks is imperative. Appreciation of the wonders of nature combined with the responsibility to preserve the environment for future generations provided the impetus for my design concept. Aesthetically, I was visually inspired by images of cliffs and waterfalls in the southwestern United States and sought to interpret that scenery in a one-of-a-kind dress.

Solar dyeing, the most socially responsible and environmental friendly method of dyeing, was used to dye silk with purple plum bark. Solar dyeing harnesses the heat from the sun to develop the reaction necessary to bond dye to fiber. Silk satin organza and silk organza fabric yardage was placed in a barrel filled with trimmings from a purple plum tree (leaves and small branches) and water. The silk was immersed directly into the barrel along with the dyestuff and remained in the barrel in a sunny outdoor location for two weeks. An irregular color/dye pattern resulted as the fabric touched the dyestuff, and had air bubbles within in it and within the dyestuff, which contributed to the lighter and darker dyed areas. To obtain the pale blue color used to represent the waterfall, silk organza was immersed briefly in an indigo dye vat.

The garment pattern was designed using draping techniques. The dress has princess seams, side ruffle/peplum sections, a V-back neckline with ruffles extending from the right front shoulder along the back neckline and downward, and a slit opening to the knee area following the blue ruffles. The ruffles in brown and pale blue symbolize cliff walls and a waterfall tumbling down from the shoulder.

The irregular dye pattern resulting from the solar dye method became part of the challenge and solution as that pattern provided a perfect background of shading to imitate cliffs and eroding rock. Free motion machine embroidery stitching in variegated thread colors was used to further replicate the cliff erosion and greenery. Not technically a quilted garment, a very thin polyester

batting was utilized between the outer fabric and an underlining of cotton muslin to provide dimension and the machine stitching goes through all layers. Other construction techniques include serged rolled hems on the ruffles and an invisible zipper following the waterfall seamline.

