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PAPER TECH

Retting and Dyeing: Rediscovering Ancient Technologies

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In my recent show, *Continuum of Being*, at Meredith College in Raleigh, North Carolina, USA, I expanded my previous work based on seed pods further—to include the blooming flower. On Meredith's campus, there are over 100 varieties of magnolia trees producing a range of flowers—from quite small to large, from snow white to yellow to coral pinks to streaks of brilliant reds. Over the years, my focus of fiber/papermaking has taken its roots from the Asian papermakers, who have made paper from plants for over 2,000 years. With my plant-based fibers, I found a beautiful, soft, natural range of colors and tones. I found that each plant has its own signature color—natural beiges, olives, browns, tans, and yellow tones. I wanted the more striking yellows, pinks and reds. Exploring dyes was the answer.

Natural Dyes Close to Extinction

As I researched fiber dying, I realized the natural-dye art form had almost gone extinct. Natural dying began

sometime between 4,000–3,000 BCE in Asia, primarily India and China. Through the Silk Road, the West was exposed to many dye processes. I decided to focus my research on textile dye history. My primary plant fibers—hemp, cotton, banana, flax and kozo—have all been used in textile formation. I worked with ten fibers and ten dyes, narrowing the work down to my five key fibers and ten dyes: sandalwood, indigo, osage, annatto, madder, henna, alkanet, kamala, cochineal, and cutch. In addition, in the studio we explored using different mordants, substances named from the Latin *mordere*, meaning “to bite or fasten.”

Focusing on Cochineal

Cochineal traveled along the sea routes from the Americas in the fifteenth century. Found in South America, the cochineal is a parasitic insect that lives on the prickly pear cactus. The female insect bodies of the *Dactylopius coccus* produce a

carminic acid creating a deep red, carmine dye with ranges of colors from reds to purples—all of which have had a great importance in history. It was the color of the royals, the military, later used in food colors and cosmetics. At one time, Spain had the monopoly on the color red, derived from the cochineal dye.

Steps in the Process

One can easily purchase the cochineal dried bugs online from various natural dye providers. The dried bugs are blended in a blender to powdery form. It is mixed in water, and cooked in a stainless steel pot for an hour. One of my favorite fibers for sculpture is the banana stalk. I harvest banana trees from friends in North Carolina, which cannot grow at my farm in the mountains of southern Virginia. I separate the leaves and stalk from each other, which create completely different colored fibers. The stalk ends up being a golden straw tone. I leave the harvested banana outside

Natural Dye Book; Gibby Waitzkin, 2015.





CLOCKWISE FROM UPPER LEFT: Banana field retting; Fibers after field retting; Banana dropped into cochineal dye; Fibers added to petals. Gibby Waitzkin, 2015.

Cochineal pods: mixed fibers on left, banana fibers on right. Gibby Waitzkin, 2015.

to field ret. Retting is a Japanese term, exposing the plant fibers to the weather (rain, snow, ice, sun, wind, dew). The non-cellulose elements decompose and leave only the base fiber. The snow-retted banana fiber is stronger and has a wonderful texture very different from fiber cooked while still green after harvest. After retting, I cook the fibers in an alkaline bath of lye and water. I then drop the fiber into the cochineal bath and cook for another hour, and then allow it to soak overnight. The fibers usually soak in all the dye, leaving clear water.

Application of Dyed Fibers
The tip-in poster swatch has the cochi-

neal-dyed banana stalk fiber applied to a sheet of paper consisting of cotton, abaca, hemp, and grass fibers which had been beaten together in a Hollander beater. The sheets were pulled and then pressed. The dyed-banana fibers were poured into a mould, being suspended by formation aide, to control their shape and thickness. The banana fiber is then couched onto the sheet of paper, pressed again, and dried in a dryer box. In the case of the flowers and my angel/milkweed pods, I create a mould the shape I want from insulation foam covered with duct tape. I pour my base fiber into the moulds, press and then couch the dyed fibers onto the form. I can also use the same fibers beaten more to create a finer

pulp, so I am able to pulp paint the dyed color into the shape. Any shapes I want to be three-dimensional have artisan wire added inside the layers of fibers. I can then press them, shape them around pieces of Pellons, and air dry with fans. After that, I can arrange the forms and pulp paint them together to create my flower forms.

The essence of my art is to take ancient processes and natural materials and mould them into modern forms, while being environmentally friendly as well.

Enjoy!



Zinni Magnolia. Gibby Waitzkin, 2015.