

## Question & Answer

*In this issue we present results of work done by Catherine Nash, who investigated rich color in pigmented handmade paper for the Daniel Smith Artists' Materials Catalog. The question she posed herself was: 'How can I keep the color value of wet pulp once the paper is dry?' The following article was adapted from a longer version printed in the Winter '93 Daniel Smith Catalog, Inksmith. If you would like to receive the article in its entirety, please call Daniel Smith Inc. at 800/426-7923.*

As a papermaker and artist I enjoy working with deeply pigmented colored pulp. I wanted to find a way to retain the rich color value of wet pulp—once dry, the pigment fades to almost a third of its original value. My search has been for a product that could be painted over an image, either a matte or gloss finish, that would enhance the color value of dry pigmented paper and remain archivally stable.

In my experimentation, all of the paper samples were made from abaca half-stuff fiber, rehydrated, and beaten for thirty minutes in a Hollander beater. To color beaten pulps, I prefer dry pigments over fiber reactive dyes because of their lightfast qualities and range of colors. All products were tested on both sized and unsized samples to ascertain what affect absorbency would have in altering the color value.

In hope of discovering a surprise substance that would be effective in heightening the color value of my dried paper, I tested a wide variety of products not normally used in hand papermaking. I had not previously been familiar with all of the products tested. It should be noted that the archival quality of the successful products applied directly on paper varies greatly. Accordingly, I consulted with paper conservators for advice.

The following products were tested externally on sized and unsized sheets of pigmented abaca fiber to try to recapture the value of wet pulp. I tested fourteen products (see below). The first seven had no visual effects, numbers eight through eleven heightened the value slightly, and numbers twelve and thirteen gave me the dramatic effect I was looking for. The final product (number 14) I rejected due to its flammability.

- |                          |                             |
|--------------------------|-----------------------------|
| 1) Gum Arabic            | 8) Casein Varnish           |
| 2) Acrylic Retarder      | 9) Gloss Plastic Spray      |
| 3) Oxgall Liquid         | 10) Polymer Varnish Gloss   |
| 4) Polymer Varnish Matte | 11) Picture Varnish (Matte) |
| 5) Rabbit Skin Glue      | 12) Picture Varnish (Gloss) |
| 6) Methyl Cellulose      | 13) Beeswax                 |
| 7) Casein Emulsion       | 14) Beeswax in naphtha      |

Two coats of the gloss variety of picture varnish (I used a product with U.V. absorber, from Daniel Smith, Inc.) worked wonderfully on both sized and unsized papers, heightening the value more than the matte version and bringing it back to a value as dark as wet pulp. However, despite the product's normally gloss finish, the paper surface remained matte. According to conservator Jay Krueger (of the Center for the Conservation of Art, Fort Worth, TX), this is an inherently stable product and will not damage the fiber.

For my own images, I have been using this picture varnish because of the ease of preparation and use. I use it in a painterly fashion but only in certain areas, to heighten the darks or create shadows. Prismacolor pencils and artsticks are very receptive to paper treated with this varnish and can be used to increase the volume and space of an image.

Beeswax produced the most intense change in value of all the products tested. Melted in a double boiler and painted on directly, it soaked through the sheet and left a white layer of brush strokes. After ironing between paper towels batik-style, the excess white melted away, revealing a heightened value change back to the exact value of the wet pulp. It also changed the opaque sheet to a translucent one. Wherever folded or crumpled, the waxed paper's value lightened slightly, leaving a network of spidery lines similar to batik. This effect could be manipulated for interesting results. Because the piece must be ironed, melted beeswax is limited to two-dimensional pieces. (When a sample was passed over a hot burner the excess did not completely soak into the paper, but remained thick, although transparent, on the surface.)

Although beeswax is stable and will not degrade in a physical sense or affect the paper, Jay Krueger warns that eventually even bleached beeswax may discolor. The waxed surface might also attract more dust and dirt. He suggests putting waxed works behind ultraviolet filter Plexiglass to protect them and to prevent the potential discoloring of wax due to ultraviolet rays.

*Catherine Nash*