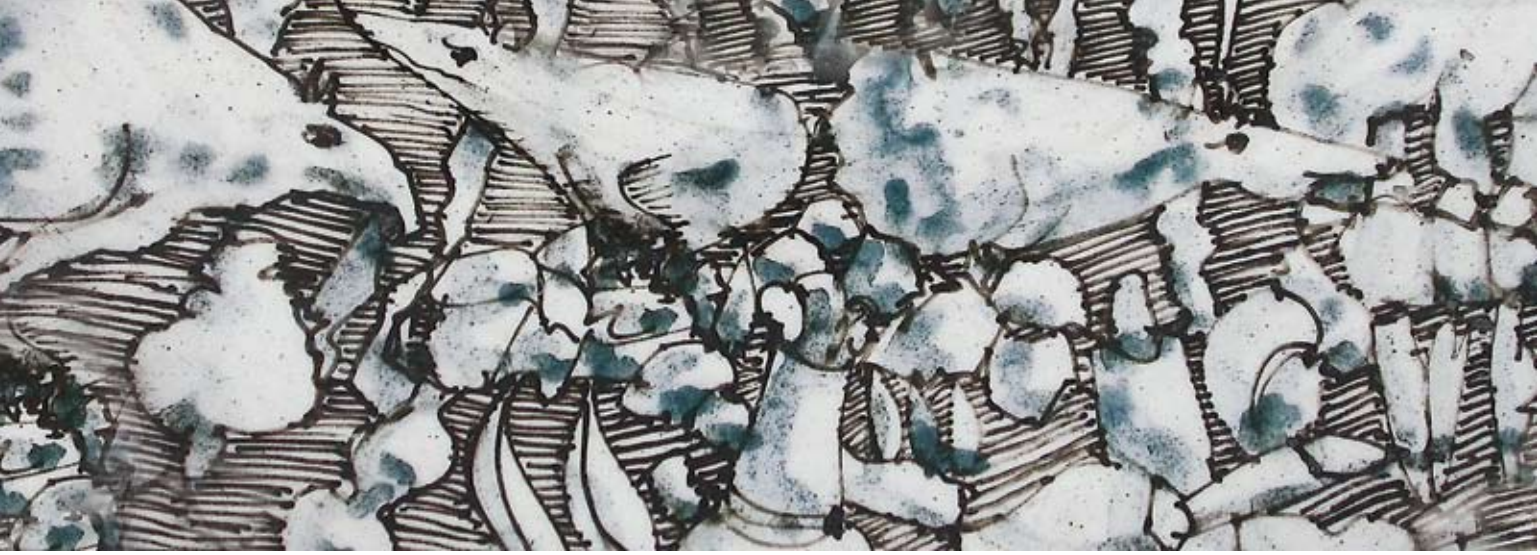


Jack Sures, Canada, "Wide Bowl" detail, ceramic ink drawing on porcelain. Private collection. Photo: Judi Dyelle

CHAPTER 14

Marks of Pencils, Crayons, Pens and Trailers

For those who are excited about the graphic possibilities of the ceramic surface and enjoy the use of drawing implements that have something of a sharp, scratchy or linear nature, the marks made by pencils, pens, crayons and trailers likely will make them favorite tools of expression. Chapter 1, about the process of drawing and the nature of mark making, showed that these tools are the foundation of written or pictographic communication in Western civilization, whereas the brush is the foundation of mark making for most Eastern civilizations. Those who have grown up in the Western traditions usually feel more affinity with scratchy drawing tools than with the soft, calligraphic brushes. Fortunately, the range of ceramic decoration tools encompasses both soft and hard possibilities.

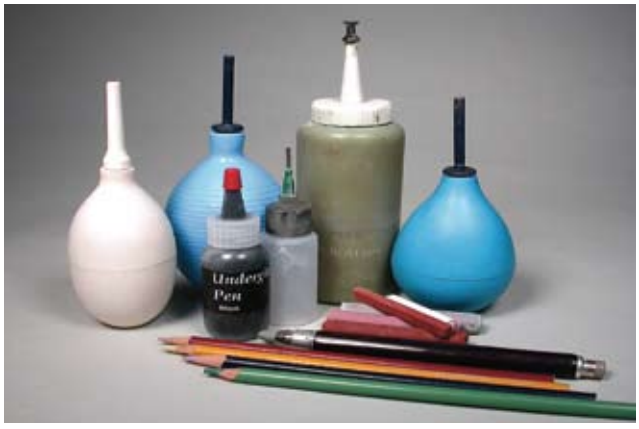


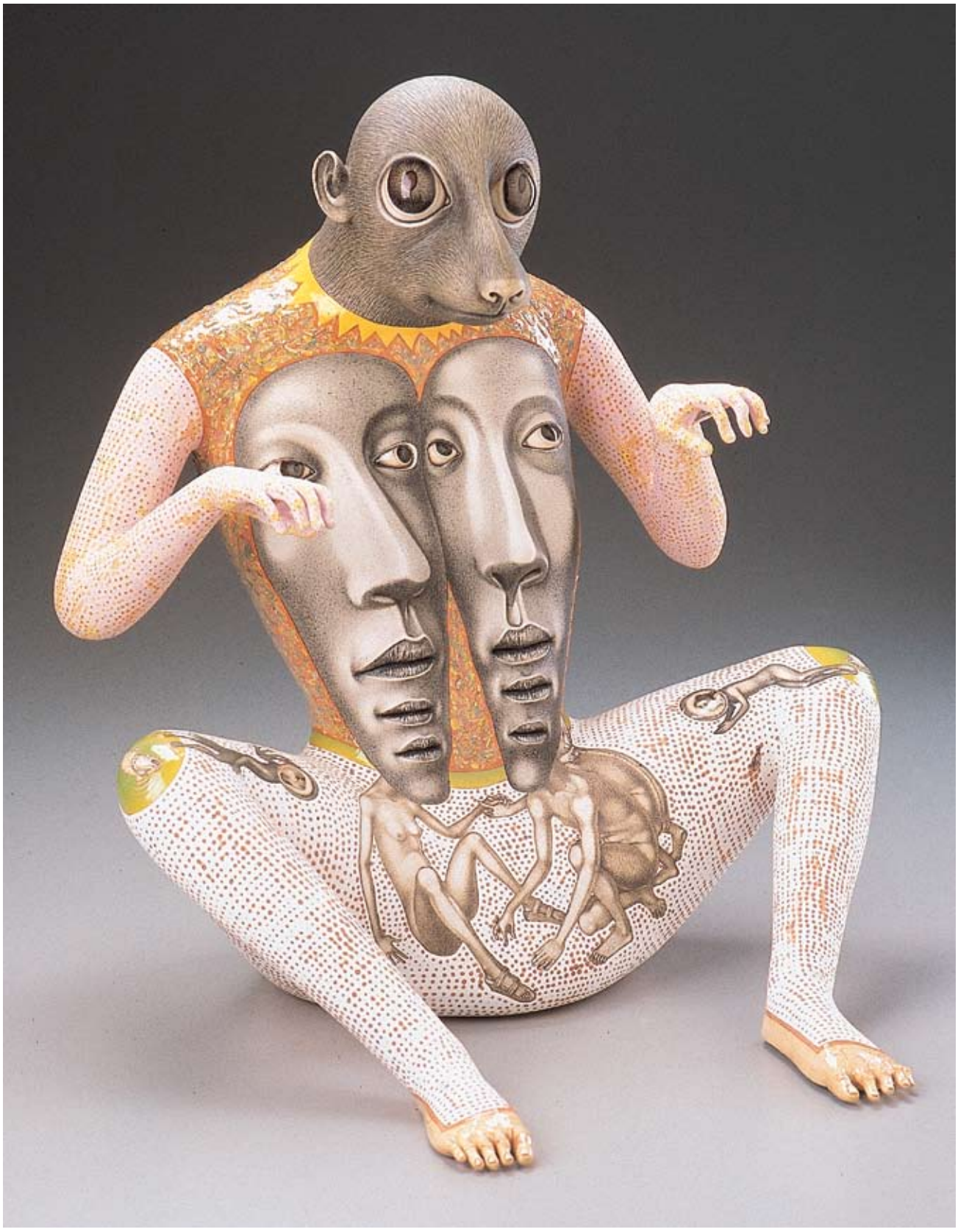
Photo: Judi Dyelle

Trailers, ceramic pens and pencils.

Ceramic Pencils

Regular pencils, with what we call "leads," actually are made from graphite of various degrees of hardness from 6H (extremely hard) to 6B (extremely soft). If these pencils are used to draw on the ceramic surface, marks made with them will burn away in the firing. Sometimes this is a convenient eraser of guidelines or grids for patterns and designs done with ceramic pigments. Guidelines also can be painted on with vermilion watercolor paint that also will burn away.

Pencils for ceramic use are made with combinations of refractory materials, clays, and colorants and are usually only commercially available in one level of hardness that would probably equate to an HB rating in a graphite pencil. HB hardness is midway between 6H and 6B. Companies that produce ceramic pencils have a habit of coming and going, but most ceramic supply houses usually will be able to find and supply them. Pencils are commercially available in a very limited variety of colors.



Sergei Isopov, USA, "Thin Line," porcelain, 17-½" x 15-½" x 15", 2002. In the collection of David and Jacqueline Charak, courtesey of the Ferrin Gallery, New York, USA.

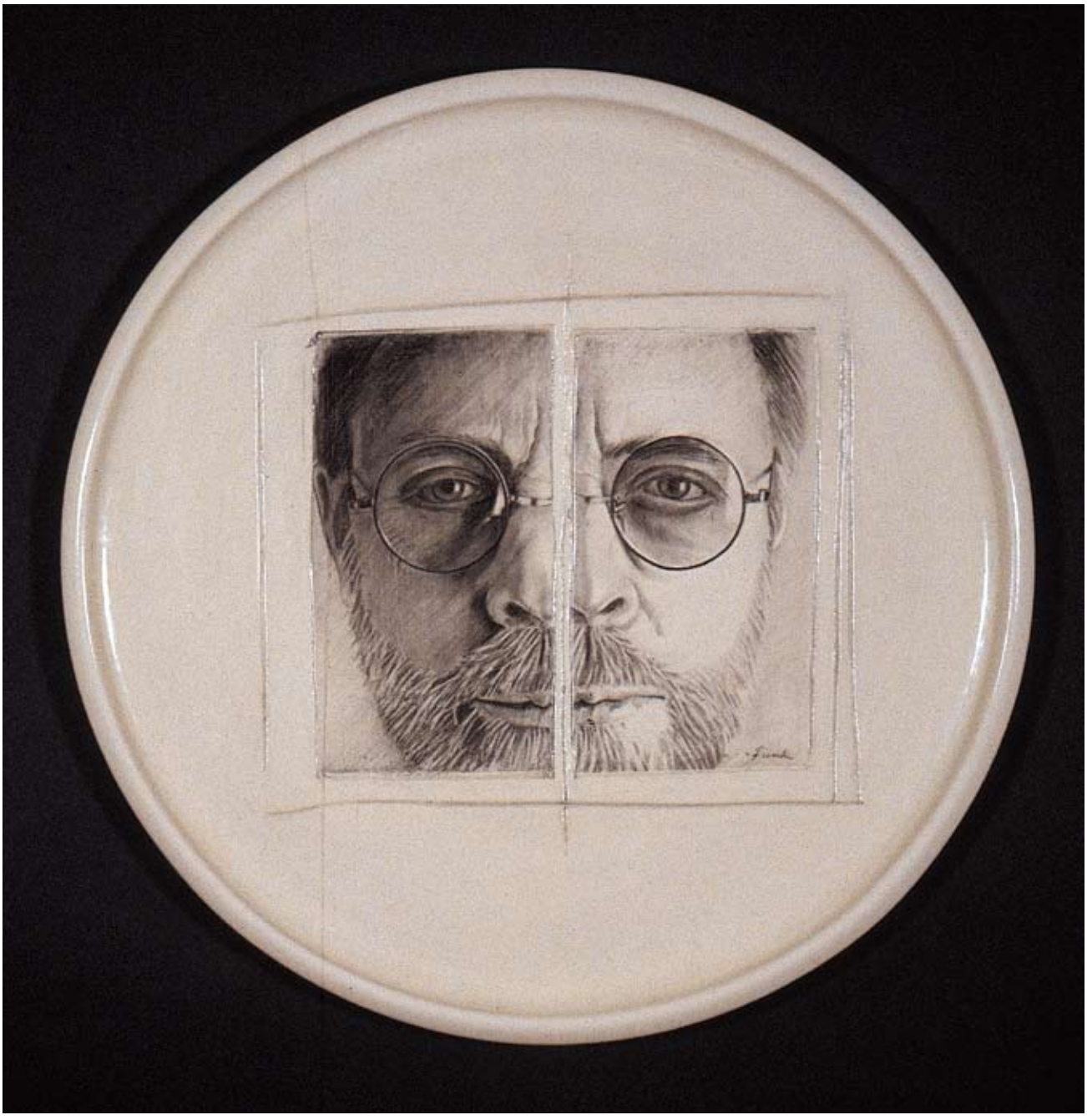


Photo by the artist

Verne Funk, USA, "Split — Portrait of the Artist," whiteware wheel-thrown, underglaze pencil, glaze, 18" diameter, 1996.

Work with ceramic pencils normally is undertaken on bisque-fired clay that has been sufficiently hardened to withstand the pressure needed for satisfactory mark-making. Since the pencil "lead" may be quite fragile in use, the smoother the clay surface, the better the drawing. Bisque surfaces can be smoothed by sanding with wet and dry silicon carbide or aluminum oxide papers, or the surface of the greenware may be sprayed or brushed with a terra sigillata coating to provide a harder working surface. Ceramic pencils may be used on the ceramic surface just like their graphite equivalent on paper. Although sharpened points tend to wear quickly on the abrasive ceramic surface, the combination of pencil tip marks, side-of-pencil marks and the opportunity to create tones through finger-rubbing or smudging the soft image gives wide potential for drawn imagery development.

Photo: Richard Faller

Jenny Lind, USA, "Platter," cone 6, painted engobes, clear glaze, 22", 1997.

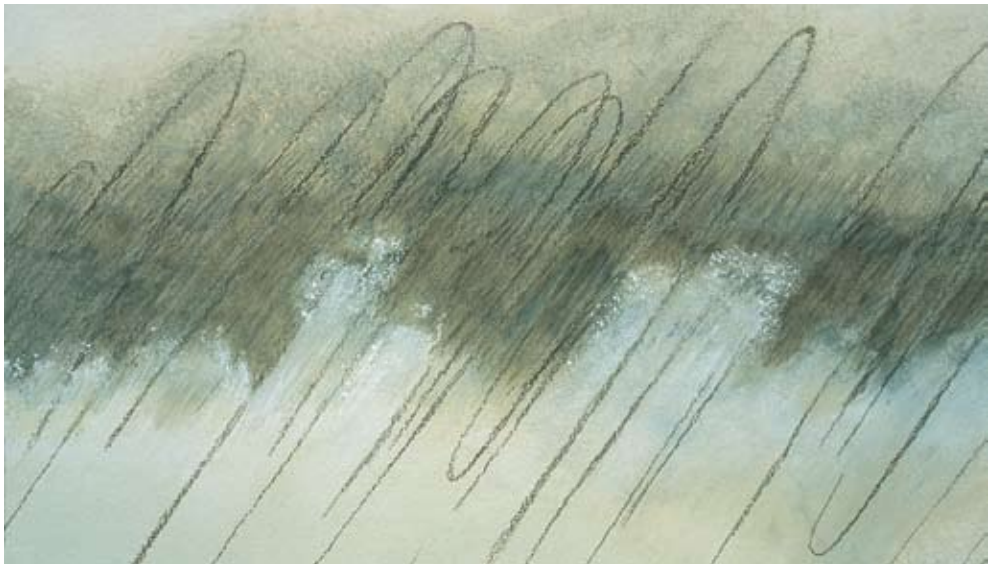


Photo courtesy of the artist

Jeanne Otis, USA, "Ephemeral Passage" detail tile No. 6, fired to cone 5, five times, smooth surface covered with white slip, multiple washes of overglaze color applied with a brush and sponge, underglaze pencil lines added last, 18-½" x 19" x 1", 2003.

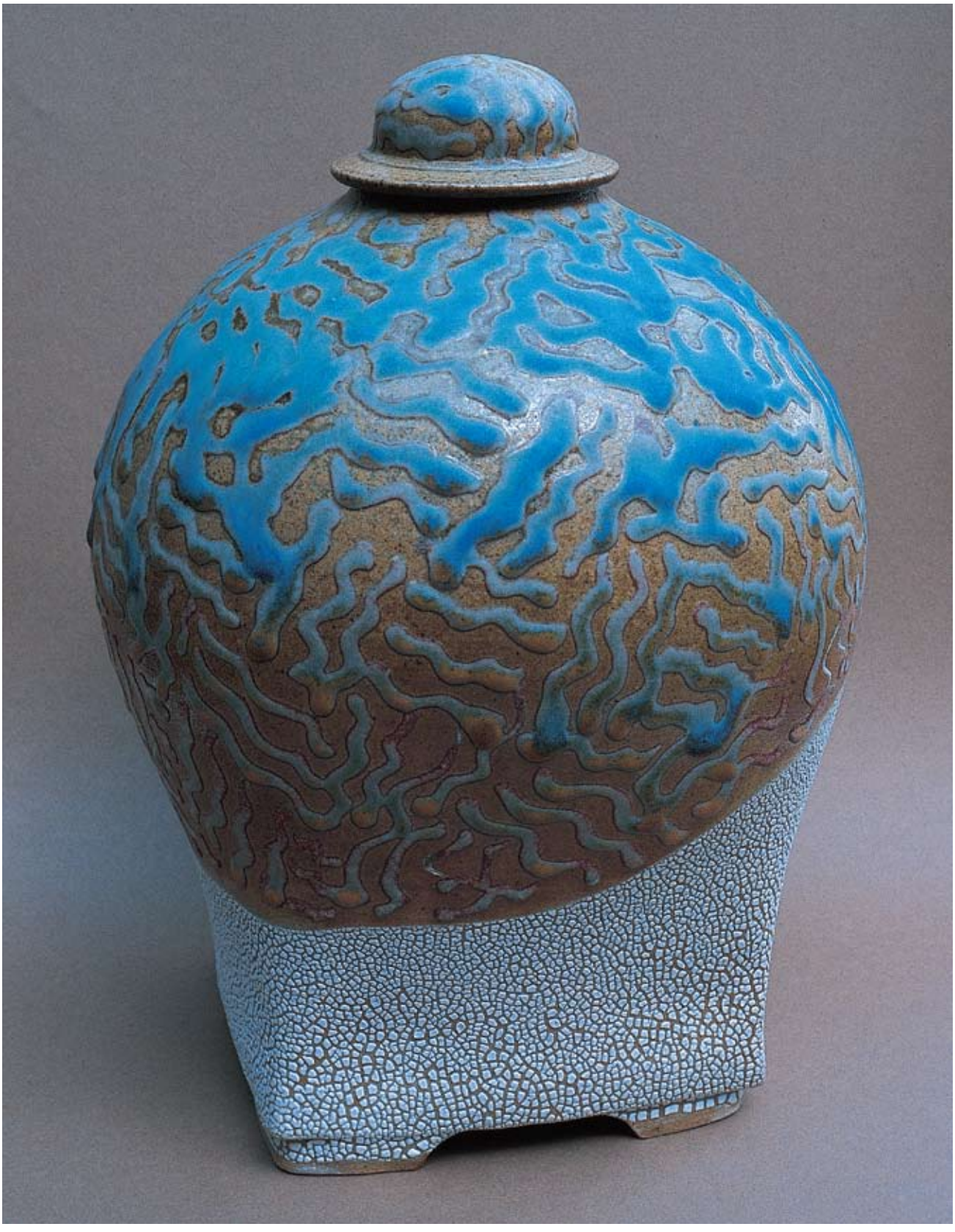


Photo by the artist

Steve Irvine, Canada, "Jar," stoneware, wood fired, hand-built, trail glaze decoration on upper part, 27cm x 22cm x 22cm, 2001.

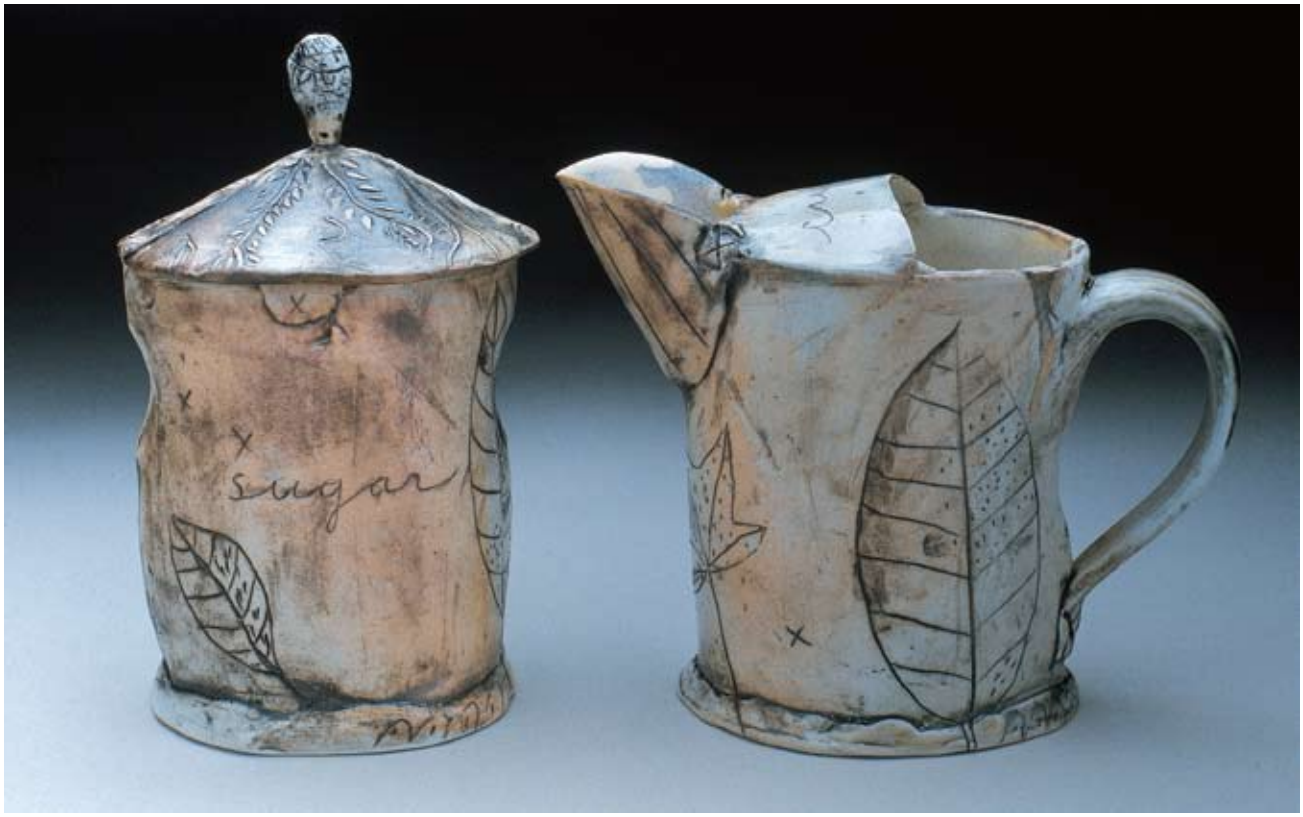


Photo by the artist

Andrea Freel Christie, USA, "Sugar and Creamer," porcelain, underglaze, glaze, 6-½" x 4" x 3-½", 2003.

If the commercial underglaze pencils are too soft for satisfactory use, it is quite easy to make your own and harden them to a more satisfactory and less friable state. Ceramic pencil drawings can be fired onto the bisque-fired clay to harden them before glazing, or, alternatively, they can be fired on unglazed high-fired clays, such as porcelain or stoneware, without the need for a glaze coating.

The selection of colorants or mixtures of colorants used in the coloring of the lead will control the effectiveness of the drawings at high temperatures, but most will tolerate cone 10.

Making Ceramic Pencils, Pastels, Crayons and Watercolors

Note: *I wish to thank Jeanne Otis for her research, and Arizona State University for permission to restate their work. It has been expanded from the original text.*

To make ceramic pencils and pastels, use a porcelain-type slip with 50 percent white firing ball clay or plastic kaolin. For dry strength in the green state, 3 percent macaloid or 5 percent bentonite should be added.

Ceramic Pencil Slip Recipe	
White firing ball clay	50
Potash feldspar	25
Silica	25
TOTAL	**100**
Macaloid (or 5% bentonite)	3
Colorant (maximum)	15

The materials, including colorants, should be dry sieved through an 80-mesh screen to ensure thorough blending. For color, you can use mineral oxides, carbonates and prepared stains. A variety of combinations will produce a wide range of colors, although it is important to select colorants that won't burn out at high temperatures; not many will, but cadmium/selenium and potassium dichromate are likely to do so. The amount of colorant can be up to 15 percent. More than that will cause loss of plasticity in the raw state, making it difficult to form the pencils. The more colorant used, the more intense the color.

Mix the dry materials with approximately 45 percent

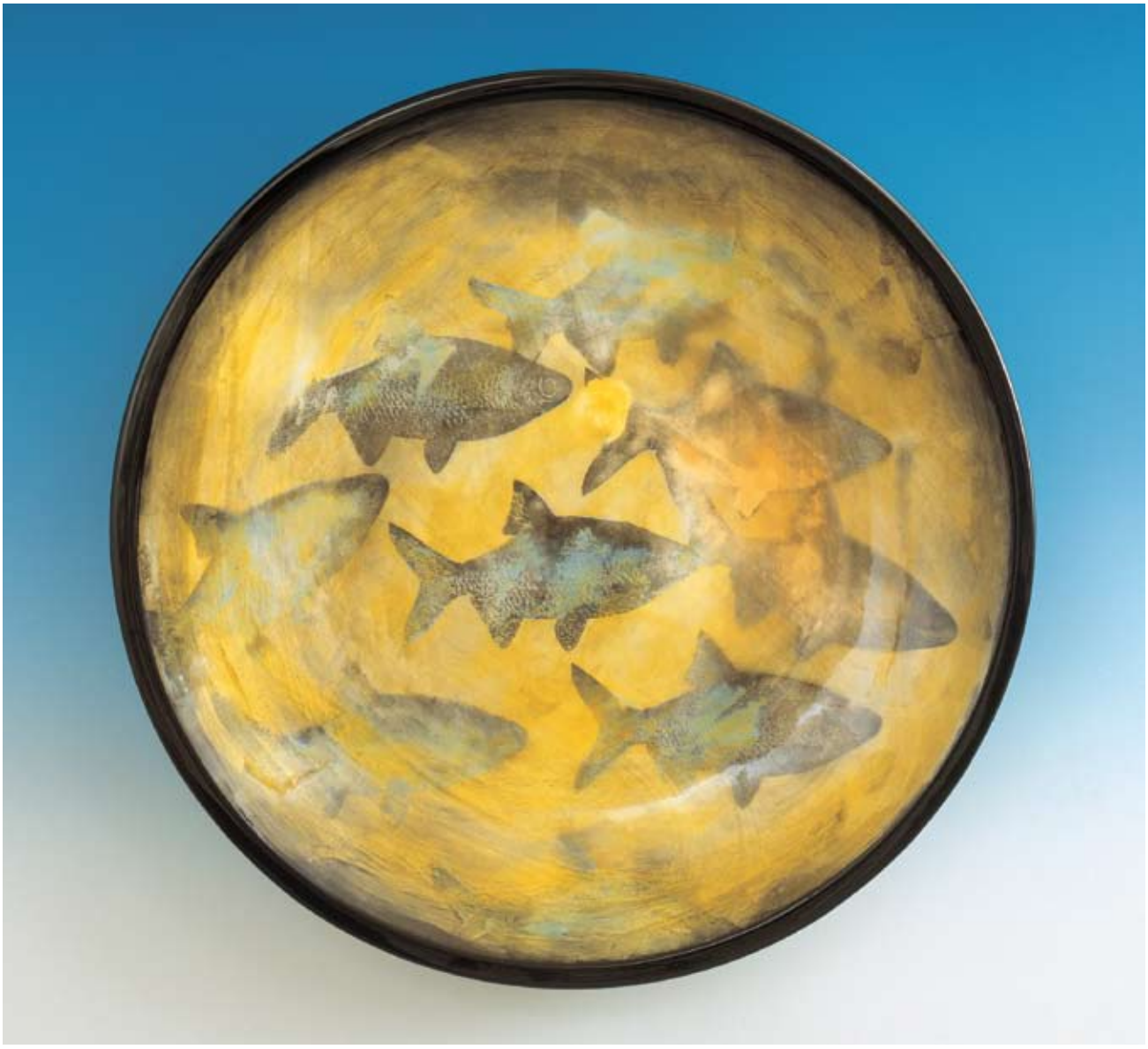


Photo: Ross Mulhausen

John McCuistion, USA, "Pond Series," cone 04 oxidation, 18" diameter, 2000.

water, to which 1 percent of sodium silicate per 100 grams of dry material mix has been added. This will slightly deflocculate the slip, giving additional green strength while also intensifying some of the colorants.

Form the pencils by drying the colored slip to a plastic state, and then either rolling out coils or extruding lengths of the desired thickness. These then can be left as pencil lengths or cut into shorter (1" to 2") lengths. When dry, fire the pencils to between 800°C and 950°C, depending on the desired hardness. Lower firing will produce softer lead; higher firing, harder lead. The short lengths can be placed in a claw grip drafting pencil (the Koh-I-Noor No. 48 drafting pencil can hold leads up to ¼" in diameter).

Pastels normally are used from the greenware state and are not prefired unless they prove too friable for convenient use. To make pastels, use the basic recipe above and simply form the clay into coils or extrusions to the desired size for use. If they prove too fragile, they can be fired to between 600°C and 800°C without making them excessively hard. Ceramic pastel drawings should be fired on the ceramic object to harden them before a glaze is applied; otherwise, the powdery surface likely will be spoiled in glaze application or handling.

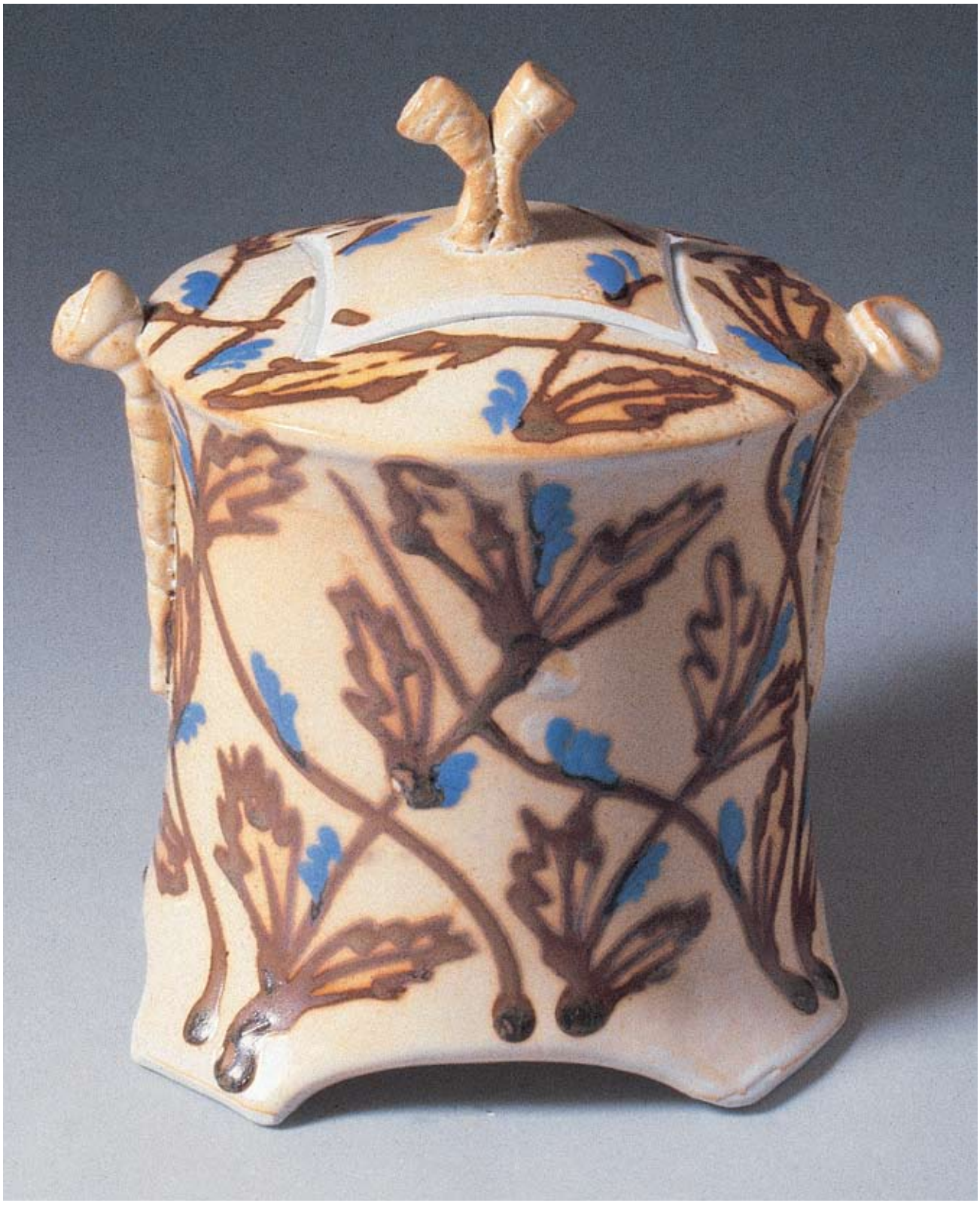


Photo by the artist

Lynda Katz, USA, "Covered Jar," thrown, altered, and hand-built porcelain, glaze-trailed decoration, 8" x 5" x 4", 1997.

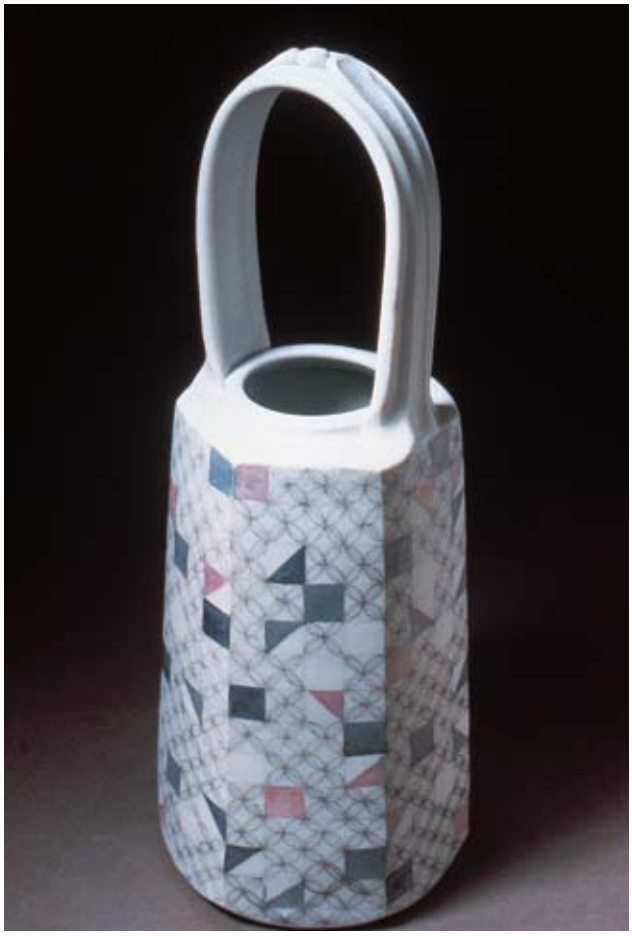


Photo by the artist

Lynda Katz, USA, "Bayou Boogie Woogie," thrown and faceted porcelain, underglaze pencil drawing with luster glazes, 13" x 4-½" x 4-½", 1984.

Surface powder also might cause crawling through lack of glaze adhesion.

To make wax crayons, mix the dry recipe above with ordinary commercial wax resist. Form the crayon, and let it dry. Since the crayon will contain some latex, it also will have a slight resist effect on the work, particularly when used on bisque-fired ware. For a crayon with greater resist ability, stir colorants into wax, let cool, roll the wax into rods of different widths, and cut the rods in convenient lengths.

Underglaze Pens

Underglaze pens are like super-fine trailers containing an "ink" that gives good flowability for drawing. They are available commercially from a number of producers, or you can make your own with the fine trailers that are available. You also can dip any form of "nibbed" pen, from fine-pointed mapping pens or quills to sharpened bamboo, into ceramic ink.

Black Ceramic Ink Recipe

Calcium borate	30
Potash feldspar	30
Ball clay	25
Silica	15
TOTAL	**100**
Bentonite	5
Mason Stain 6600 or other black stain	10

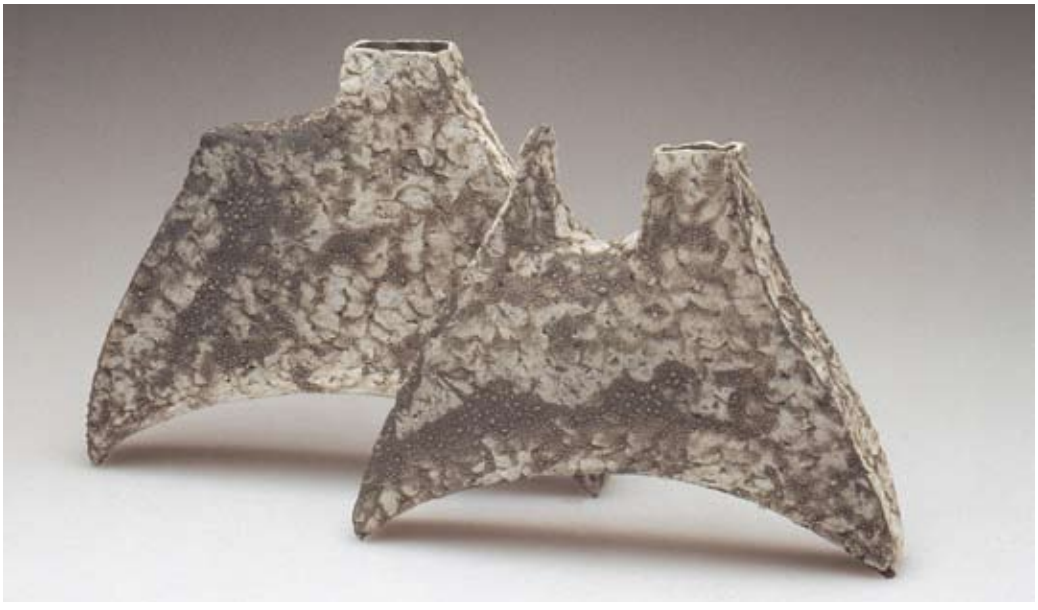


Photo: Dale Roddick

Judith Graham, Canada, "Urns — C Series," 8-½" x 10" x 2-½", 2002.

Thoroughly dry-mix these ingredients, then add a mixture of water and 5 percent sodium silicate (100 milliliters water to 5 grams sodium silicate). Pass it through a 100-mesh sieve two times. The ink is then thinned for appropriate use and should be usable at all temperatures to cone 12. It can be thinned to produce pen and wash-like drawings or used with a ceramic watercolor or glazes. Other colorants also can be used with this base.

Watercolors

Ceramic Watercolor Recipe

White firing ball clay	50
Potash feldspar	25
Silica	25
TOTAL	**100**
Macaloid (or 5% bentonite)	3
Colorant (maximum)	15

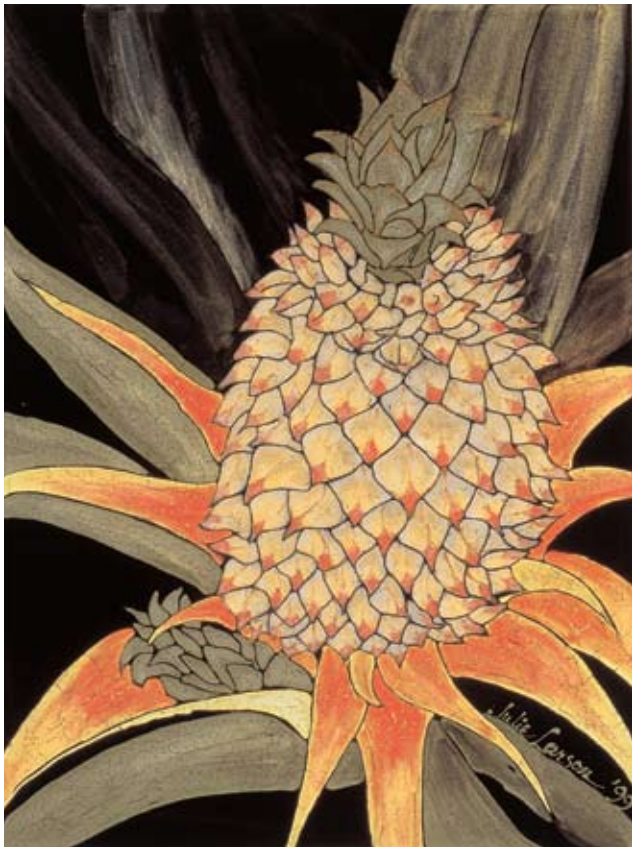


Photo: Julie Larson

Julie and Tyrone Larson, USA, "Pineapple Tile," porcelain, slip-cast tile by Tyrone, sprayed base glaze with glaze painting on top of raw base glaze by Julie, painting applied with trailers, cone 7, 12" x 16" x ½".

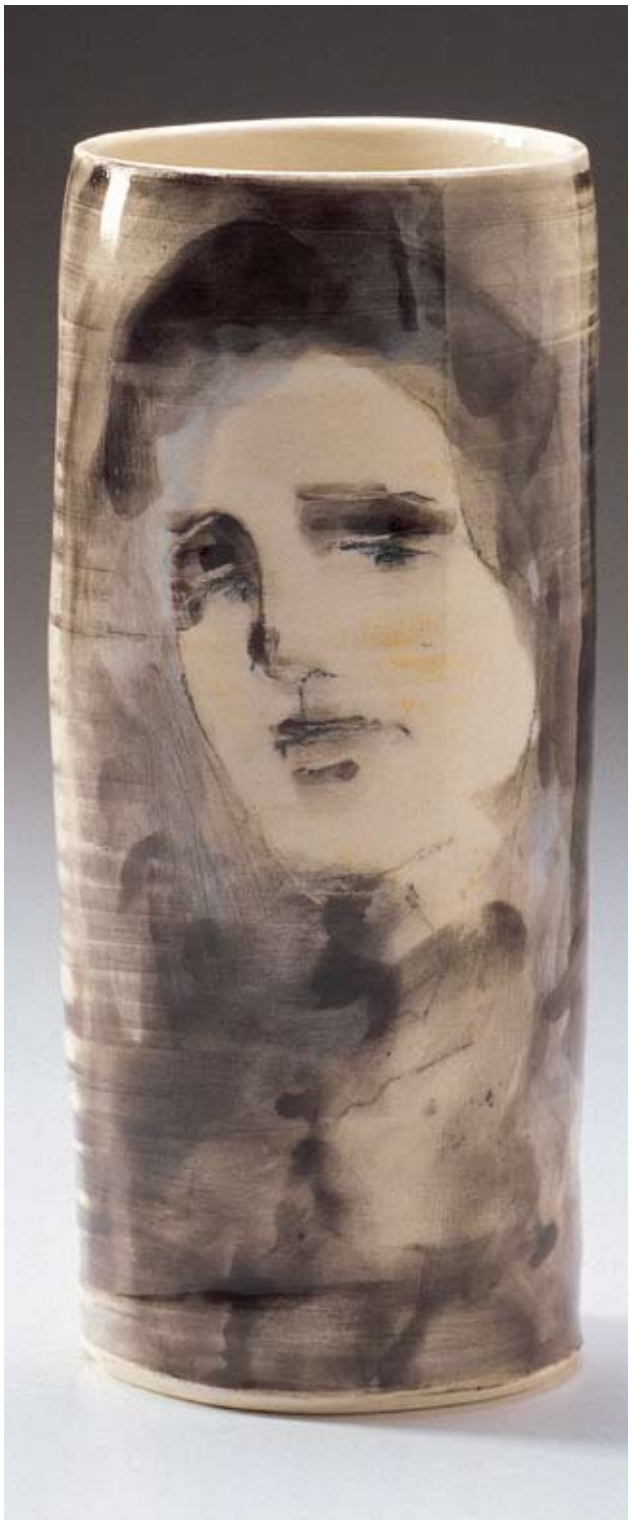


Photo: John Brennan

Jan Schachter and Margaret (Peggy) Forman, USA, "Evala," vase form, porcelain, black slip, rutile wash, cobalt chloride wash, underglaze pencil, etching, re-bisqued to set drawing, transparent glaze, 7" x 2-¾" x 3", 2003.

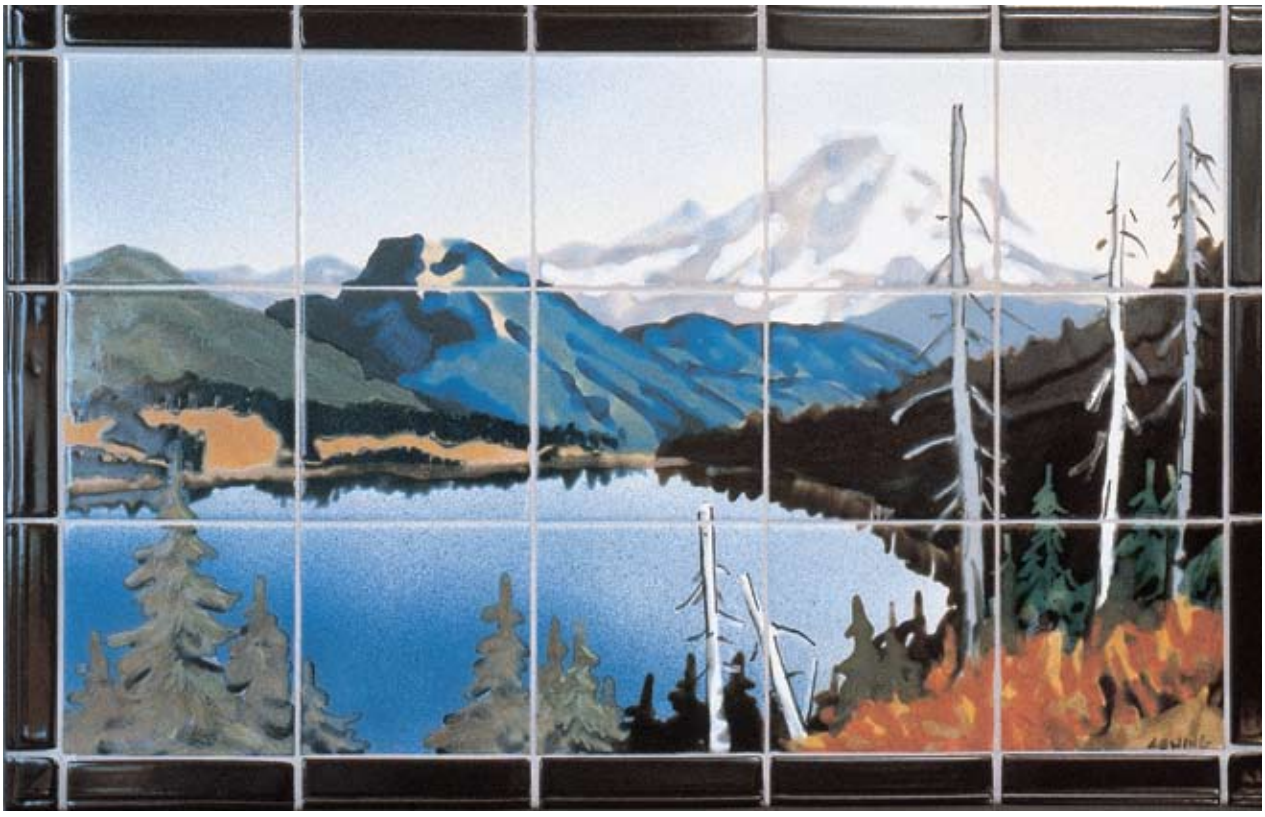


Photo by the artist

Paul Lewing, USA, "Summit Lake — Mt. Rainier," porcelain tile, cone 4 oxidation, colored glazes applied with slip trailer, extruded border with sprayed glaze, 33" x 21", 2003.

For watercolors, the materials are thoroughly mixed together, then enough water is added to make a slip, which is sieved through an 80-mesh sieve and poured onto a plaster surface. When dry to the touch, watercolor cakes can be made by forming rounds or squares of the colored slip and letting them dry completely. They then can be used like ordinary schoolbox watercolors by wetting the surface with water and applying with a brush.

Trailers

A wide range of trailers for slip, ink, glaze or overglaze uses are available from ceramic suppliers, kitchen stores and drugstores. They usually consist of a rubber or neoprene bulb or container and a nozzle with a fine-aperture tip, or sometimes multiple tips. The simplest to find is usually either a hair coloring applicator bottle or a child's enema rubber bulb from a drugstore.

Ceramic suppliers often have fine-tipped trailers, sometimes with interchangeable tips of differing aperture. The aperture of the tip required depends on the thickness of the material being squeezed through. Thin inks will go through a fine tip without clogging, but a wide tip may be needed for slips or glazes to flow properly.

As with any tools, you will need to practice to get the correct "feel" to achieve the best results. Keep a thin needle tool nearby when working with trailers, because the fine ones tend to clog quite easily.