"VOICES OF THE EARTH": TRANSCENDING THE TRADITIONAL IN LAPIDARY ARTS

By Sharon E. Thompson

Over the last 20 years, gemstone artists have demonstrated growing skill and variety. The diversity in their finished products comes not only from their unique artistic visions, but also from their ability to alter traditional tools or techniques. In the process, they are changing the way we define gemstones and jewelry. In a collection of 20 jewels entitled "Voices of the Earth," scheduled for exhibit at the Carnegie Museum of Natural History in Pittsburgh, jewelry designer Paula Crevoshay showcases the work of some of North America's leading lapidaries.

Since the early 1980s, the craft of lapidary has been blossoming, particularly in North America (figure 1). Although the work of German carvers such as Bernd Munsteiner inspired many cutters, including Michael Dyber and Larry Winn (McCarthy, 1996), gem art has taken its own twists in North America, where there is less of a tradition of gem carving. Due to a number of contributing factors—among them the interest in Native American jewelry in the 1970s, the fascination with crystals in the 1980s, and the search for distinctive designs in the 1990s—the buying public has become aware of gemstone carving and appreciative of its beauty. Another key factor undoubtedly has been the annual Tucson Gem and Mineral Show, and the multitude of shows that surround it. Each February in Tucson, gem carvers can find the high-quality material they need for their work, see the creations of their contemporaries, exchange information, and exhibit their own pieces to the public. It is no coincidence that the interest in making and buying gem carvings grew as the Tucson Show grew.

One jewelry designer who is enthralled by the rebirth of lapidary art is Paula Crevoshay of Albuquerque, New Mexico. She has designed a collection of jewelry that showcases the ingenuity of some of North America's top gem artists, and illustrates the beauty and wearability of their artwork. This collection will be on exhibit at the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania, for three months, beginning May 1, 2002.

By using the unique optical and physical properties of gemstones, gem artists create not only works of art, but also pieces that promote public awareness of the earth's natural beauty. For this reason, Crevoshay asked leading gem artists from North America to create or contribute pieces that honored the earth, choosing the Greek goddess of the earth, Gaia, as the unifying theme for the collection. Ten artists responded: Arthur Lee Anderson (North Carolina), Elizabeth W. Beunaiche (Illinois), Charles Kelly (Arizona), Glenn Lehrer (California), Thomas R. McPhee (British Columbia), Nicolai Medvedev (New Jersey), Sherris Cotter Shank (Michigan), Lawrence Stoller (Oregon), Slava Tulupov (New York), and Larry Winn (Colorado). Many of them share their techniques here. While their work

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Figure 1. Lawrence Stoller's Montana agate carvings aptly illustrate the skill and creativity demonstrated by today's North American carvers. Here, in Paula Crevoshay's "Freedom's Flight," they have been transformed into a winged creature that spans almost 6 inches (15 cm). Set with a 9.72 ct topaz and a 33.94 ct Mexican opal, the neckpiece has a drama rarely seen since the Art Nouveau works that René Lalique created for actress Sara Bernhardt. Photo © Harold & Erica Van Pelt.

varies widely, all of these artists have transcended the traditional in their technology and skills to achieve their vision.

BACKGROUND

Historical Sources of Inspiration. In addition to the pieces created by Bernd Munsteiner and other German carvers, the work of North American gem artists has been built on a long tradition of Roman and Greek seals and mosaics (Boardman, 1985; Haswell, 1973), Chinese and South American Indian jade carvings (Zucker, 1984), Victorian cameos (Clements and Clements, 1998), Russian and Italian inlay, and the *objets d'art* that have graced palaces throughout the world. Also influential was the Art Nouveau era—from the late 19th to the early 20th century—in which gem carvings and glass were included in pieces of fine jewelry (Misiorowski and Dirlam, 1986). At about the same time, Peter Carl Fabergé was carving animals and other figures from opaque materials such as agate, onyx, and obsidian for Russian nobility (Von Habsburg-Lothringen, 1979; Becker, 1985). It is following this tradition that today some lapidary is being transformed into the fine art of gem sculpture.

Trends in Techniques. Through the centuries, certain techniques have developed to shape the very hard gem materials. Faceters, cabbers, and carvers have all used grinders, saws, and flat laps. Whether powered by muscle, water, or electricity, these tools must use harder materials to cut softer ones. Modern technology has provided lapidaries with additional

Figure 2. The 50.12 ct citrine in "Physce" is an excellent example of Arthur Anderson's use of curved facets and frosted facet junctions to create the illusion of lace within the stone. Photo © Harold & Erica Van Pelt.

Figure 3. By using a motorized hand piece in addition to a fixed spindle, Elizabeth Beunaiche dramatically refined the lines and improved the polish in her 26.29 ct carved tourmaline face, as seen on the left in "Queen of Hearts." She also works in a mosaic style with abstract-shaped gem materials. In "First Light" (right, 4.3 cm total length), Beunaiche has incorporated chloromelanite to represent a mountain shape, striated hematite as a night sky, and a dark drusy quartz to imply the city lights of Phoenix, Arizona. Photo © Harold & Erica Van Pelt.

tools to make the work faster or more accurate—sandblasters for etching (Thompson and McPhee, 1996a), programmable faceting machine heads for accuracy, motor tools for speed, and diamond grits for a higher polish—but the basic techniques and equipment have remained largely unchanged (Thompson, 1995).

Not entirely, though. North American lapidaries of the late 20th and early 21st centuries are artists, and artists have always been tinkerers, trying different painting media and surfaces, as well as drawing and sculpting tools—even combining processes. These gem artists also tinker with their techniques and materials, constantly refining them to get closer to their artistic vision. Often it is only a slight shift in approach that allows them to break barriers; other times the cutters must immerse themselves in engineering, or reshape their world view, to make that vision a reality.

ARTHUR LEE ANDERSON

The excessive "play" in the head of Arthur Anderson's first rickety faceting machine meant that he was unable to count on the accuracy of the facet angles unless he controlled the cutting by touch, much like working with an old-fashioned "jam peg" machine. This serendipitous discovery allowed him to incorporate convex facets into his work. Had he been able to afford better equipment, he never would have learned this style (A. Anderson, pers. comm., 2001). Anderson also discovered that by locking the faceting arm in a free-wheeling position, he could sweep the lap with the stone to create curved facets (Anderson, 1991).

Because Anderson's desire is to focus the viewer's attention on the shape and interplay of facets on the pavilion, the crown of the stone is cut flat, with only a few facets at the edge. This allows the viewer to look into the stone as if through an open window. It also means that Anderson must use exceptionally clean rough—any inclusions would be reflected and magnified.

Fascinated by the optical properties of the various gems, Anderson combines facets and their reflections so that they appear to float above the surface of the stone, in what he terms his "holographic style" (Anderson, 1991; Weldon, 2001). By frosting facet junctions, he can create a look similar to a spider's web or lace (as with the citrine used in Crevoshay's "Physce," seen in figure 2) when the stone is viewed from above.

ELIZABETH W. BEUNAICHE

Obsessed with drawing horses, Elizabeth Beunaiche became convinced she could carve them after seeing an exhibit of Russian art from the period of the Czars. At first she worked with soft stones such as turquoise, shaping the material with any tools she could find, including sandpaper and carbide bits. As her equipment improved, so did the range of her work (E. Beunaiche, pers. comm., 2001).

For 15 years, Beunaiche created reverse intaglios with a fixed spindle machine, often used as a grinder or polishing unit. (Unlike a cameo, which is a sculpture *raised above* the surface of a stone, an intaglio is a carving *cut into* the surface of the stone; in ancient times, intaglios were used as seals. A reverse intaglio is cut into the back surface of a transparent stone so that the image can be seen from the front.) Then in Tucson several years ago, Charles Kelly convinced her to try the Lab Air-Z, a high-speed, air-powered mini-motor tool originally manufactured by Shofu for the dental industry, which she now uses for raised carvings as well. By using this motor tool to rework the carved tourmaline face she provided for Crevoshay's "Queen of Hearts" (figure 3, left), Beunaiche was able to refine the lines and improve the polish dramatically. While she prefers the motorized hand piece for delicate work, she returns to the fixed-spindle machine when working on symmetrical elements such as circles, because it provides easier control.

Beunaiche has worked in a variety of styles. Another piece she provided to Crevoshay is a mosaic of three minerals: striated hematite, chloromelanite, and drusy quartz (figure 3, right). The work is part of Beunaiche's landscape series; occasionally she mounts these mosaics behind her reverse intaglios of horses to give the animals context. For the mosaics, she trims the stones with the rotary diamond tool in the hand piece or with a saw blade until the pieces fit tightly together. She sometimes uses a diamond file to sharpen corners. Applying an industrial two-part epoxy marketed by Smooth-on Corp. under the name EA 40, she bonds the pieces edge to edge. For greater adherence, Beunaiche uses a knife-edged diamond tool to carve the edges with extra lines where the stones will come into contact. If the piece is to be set into metal, she advises leaving the surface of the metal rough where it touches the stone to promote a better bond (E. Beunaiche, pers. comm., 2001).

Figure 4. Glenn Lehrer's Torus™ cut is a variation on the round brilliant with a hole through the center into which other gemstones may be set. The back of the 31.12 ct amethyst set in "Ishtar's Cross" has been cut with lines that spiral out from the center like the winds in a cyclone. This helps impart a feeling of movement in a static material. Photo © Harold & Erica Van Pelt.

GLENN LEHRER

Interested in the processes that take place in the natural world, from wind and wave to crystal structures, and intrigued by the challenge of creating the illusion of movement in a static material, Glenn Lehrer took another look at the standard round brilliant cut. Through the simple but revolutionary expedient of putting a hole through the center of the table, and carving rather than faceting the surface, Lehrer was able to create a form that represents many of the earth's basic shapes, such as the iris of an eye or the eye of a hurricane. He called the shape Torus™, patented the form, and trademarked the name. A Torus™ forms the center of Crevoshay's "Ishtar's Cross" (figure 4).

The incisions on the back of this stone are curved, so they appear to spiral out from the center hole like the winds in a cyclone; when the stone is seen from the front, these curved cuts impart a feeling of movement to the color in the stone. This

Figure 5. Thomas McPhee's 173.16 ct carved quartz, shown here in "Mari Ana," illustrates the detail and classical beauty for which his gem sculptures are known. Photo © Harold & Erica Van Pelt.

technique is particularly effective in stones such as ametrine or bi-colored tourmaline.

Lehrer uses an arsenal of equipment: a series of diamond saws, three fixed carving spindles, faceting and flat laps, and diamond tools in a variety of shapes and diameters. His primary concern is being able to duplicate the angles and curves he creates with his first cuts.

THOMAS R. McPHEE

Some of the artists featured in this exhibit were inspired to try gem carving as a result of historical influences. Thomas McPhee was fascinated by ancient stone seals; some of his pieces, such as the carved emerald "1492," reflect that interest (Thompson, 1994). In the beginning, though, McPhee was unable to pursue his vision due to the lack of proper equipment. Like other gem artists, he has adapted tools to meet his needs. Using a dental motor tool for its speed, he has developed a system that uses air and water to flush the dust from the grinding process (Thompson and McPhee, 1995b). In addition, McPhee makes or modifies just about all of his own burrs (Thompson and McPhee, 1995a).

McPhee applies a traditional sculpting approach to his pieces, first making a detailed "maquette," or model, of exact size in clay (Thompson and McPhee, 1996c). This allows him to work out proportion and design problems that could ruin his highly accurate, figurative work. By carefully measuring the maquette with calipers and continuously transferring these measurements to the rough as he works, McPhee creates pieces of great classical beauty (figure 5; Thompson and McPhee, 1996b). McPhee is also extremely safety-conscious, wearing a respirator whenever he works on hard stones.

NICOLAI MEDVEDEV

Often working with tiny slivers of stone, Nicolai Medvedev creates intarsia boxes and pendants (figure 6; Elliott, 1986). Over the last 20 years, he has developed a palette of colored gem materials—malachite, azurite, rhodochrosite, sugilite, lapis, opal, turquoise, and gold-in-quartz—that appear constantly in his work, accented occasionally by more unusual finds. Working with such slim slabs of often fragile material, he has had to develop techniques to protect the stone during cutting. He encases his rough, which often weighs tens of kilograms, in plaster. The plaster is thicker on one side so that the saw blade passes through the rough and the bulk of the plaster, but the plaster still supports the slab. This prevents a fragile slab from falling onto the floor of the saw and possibly being broken or crushed by the blade (N. Medvedev, pers. comm., 2001). He also places a

piece of glass in front of the slab to help stabilize it during cutting (Berk, 1988). Because of the immense care he takes in preparing and cutting slabs, this is the most time-consuming part of his work; it can take weeks or months to cut a single chunk of rough into the pieces Medvedev will use.

The tiny elements of each mosaic are assembled into panels and then glued with epoxy. When constructing boxes larger than 6 inches (approximately 15 cm) across, Medvedev creates and finishes each side and then assembles the panels. He attaches the panel pieces to supporting material, grinds the pieces flat, and then polishes them. After the panel is completed, he grinds away the supporting material. When working with smaller boxes, Medvedev creates the entire box, then finishes it all at one time.

By working with combinations of stones so intensively, Medvedev has developed a deep understanding of them. Rhodochrosite has to be cut in thicker slabs for maximum color—4 to 5 mm compared to a slender 3 mm for malachite (Berk, 1988). Its translucency also means that rhodochrosite must be placed over a white material, such as marble. Dark wood or stone lining the box behind it makes the rhodochrosite turn brown. Behind opal, however, he can use a dark material that emphasizes its play-of-color. The gem materials at the edges of Nicolai Medvedev's pendants also form the back, acting as a frame for the mosaic.

When polishing opal, Medvedev must bring the heat up gradually and then reduce it slowly. This is challenging when the opal is set next to lapis, as in Crevoshay's "Czarina" (figure 6, left), since the latter material requires a certain amount of heat on the flat lap to give it a nice polish (N. Medvedev, pers. comm., 2001). Malachite too is delicate and will turn brown with too much heat. The gold in gold-in-quartz may pull out during the polishing process. If individual slivers of a stone are damaged during cutting, grinding, or polishing, the entire panel must be scrapped. It cannot be taken apart and reworked.

Figure 6. In "Czarina" (left, 2.9 cm × 8.0 cm), Nikolai Medvedev had to gradually build up and reduce the heat to ensure that the opal survived polishing. In "Om tara" (right, 3.6 cm × 6.0 cm), Medvedev tightly controlled the thickness of the rhodochrosite "frame" to ensure the most attractive depth of color. The artist's signature palette also includes turquoise, sugilite, lapis lazuli, and azurite/malachite. Photo © Harold & Erica Van Pelt.

SHERRIS COTTER SHANK

Sherris Cotter Shank was a bench jeweler when she saw the lapidary work of Henry Hunt in a series run by *Metalsmith* in 1981 and 1982. She later read his books (Hunt, 1993, 1996) and was inspired to begin experimenting with the methods he taught (S. C. Shank, pers. comm., 2001). Shank loves the contours of the land and recreates the undulating curves, deep grooves, and swirling lines of a wind- and water-shaped hillside, or the rolling surface of an ocean.

Recognizing the very basic concept that light entering standard faceted stones is reflected back through the crown by the angled pavilion facets, Shank developed her "pavilion cut," an example of which is seen in Crevoshay's "Summer's Cup" (figure 7, left). On the back of the stone, Shank carves grooves of varying depths, each of which opposes a cut on the top. These grooves return light through the surface just as the facets of a round brilliant or step cut return light in a standard faceting style. It is the two opposing cuts that create the illusion of swirling movement, together with the optical mix-

Figure 7. Adapting the angled pavilion facets of traditional faceted stones, Sherris Cotter Shank cut grooves of varying depth into the base of this 66.63 ct ametrine, set in Crevoshay's "Summer's Cup" (left). With opposing curved lines on top, these cuts give the illusion that the colors in the ametrine are moving. Larry Winn also uses carefully chosen pavilion cuts in combination with traditional facet angles to produce dramatic reflections, as illustrated by this 11.86 ct carved beryl in "Sol's Jewel" (right). Photo © Harold & Erica Van Pelt.

ing of the colors of a multi-colored gem material such as ametrine.

Shank does all her cutting with a fixed-spindle machine into which she has fitted a Jacobs chuck, which has adjustable jaws to hold grinding tips with shanks of varying dimensions. The chuck allows her to change her diamond-tipped tools as needed. She also relies on a Crystalite phenolic wheel, a precision-surfaced, hard plastic lap that stands up to the heavy pressure she uses when cutting—wood points and wood laps are too soft for her (S. C. Shank, pers. comm., 2001). When she wants to inscribe fine details in her work, she uses a Lab Air-Z mini-motor tool.

LAWRENCE STOLLER

Lawrence Stoller is best known for the work he has done shaping crystals that weigh hundreds of kilograms. He has had to invent much of the equipment he uses to hold and move the material securely and accurately during the cutting and carving process. He also has borrowed equipment from the memorial monument industry (Stoller, 2000). Yet even when creating relatively small pieces, Stoller's work overwhelms most jewelry-size gemstones. In concept, Stoller's carvings often push the boundaries of jewelry until the work occupies the gray area between jewelry gemstone and art object.

The large wing-shaped carvings of Montana agate that Stoller provided for Crevoshay's "Freedom's Flight" (figure 1) were fashioned with a fixed spindle, the method Stoller prefers to use when working on his smaller pieces. The wings are joined in a neckpiece that spans almost 6 inches long (14 cm). The theatricality of such a piece is rarely seen, and is reminiscent of the jewelry designed by René Lalique for Sarah Bernhardt (Becker, 1985; Thompson, 1987). In the Lalique tradition, work such as this expands the concept of what jewelry can be, and at the same time it displays the beauty of a material that many would consider "just agate."

LARRY WINN

Larry Winn began faceting in the 1980s, but soon grew bored with it. Then in 1989, he saw an article in *Lapidary Journal* on Lew Wackler's work that inspired him to try cutting another way (Zeitner, 1989). Like Bernd Munsteiner, Arthur Anderson, Michael Dyber, and Wackler, Winn became interested in reflections and their distortions in gemstones (figure 7, right). Using a milling machine set horizontally as a fixed spindle, a contemporary faceting machine, and a battery of tools, he cuts grooves and dimples in the pavilion surface of transparent materials. An intricate array of crown facets breaks up the pavilion reflections even further. Unlike Munsteiner, Winn chooses symmetrical outlines for his stones, as they are easier to set and thus more appealing to jewelers (McCarthy, 1996).

Winn often cuts the pavilion deeper than may be considered ideal for a particular gem material to avoid leakage of light. He then cuts shallow grooves into the pavilion to provide the reflections he wants. He may also engrave dimples into the pavilion, using a motorized hand piece and a round, 1/8-inch diamond burr. Some facets are left matte for

contrast, while other surfaces are polished so that they act like mirrors. Winn cuts the crown into a complex of intricate facets, terminating in a slight point, much like a rose cut (McCarthy, 1996).

Winn's cuts often bear biological names: "Prophase," a term that refers to cell division, is one, as he felt the pavilion cuts, which move in different directions, were like cells splitting. "Synapse" is designed to reflect light from facet to facet the way an electrical impulse jumps from one nerve to another.

PAULA CREVOSHAY

Once the pieces arrived in her studio, Crevoshay was faced with a variety of challenges. Stoller's wings, for example, were relatively large and long (again, see figure 1). Crevoshay had to design a piece that would hold the weight of the wings over their span and also the shield-shaped center stone that would join them. Crevoshay used a base in pierced gold to support the weight of the wings and allow light to penetrate the Montana agate. Because the shield stone was shallower than the two wings, Crevoshay built a bezel that lifts the stone to the height of the wings; it too is pierced to allow light in and to reduce the visual weight of the piece.

While the Stoller piece was the largest, every piece in the collection challenged Crevoshay, to a greater or lesser degree, to design individualized mountings that would hold the stones securely without interfering with the carving or cutting. She had to accommodate differences in cutting styles, weights, shapes, and sizes, yet still be functional, wearable jewelry.

"VOICES OF THE EARTH"

From figurative forms to abstract designs, from faceting to intarsia to carving, the works of the North American gemstone artists featured in "Voices of the Earth" demonstrate that today's lapidary art plays as vibrant and vital a role in adornment as it has for centuries. By combining such a diversity of styles and techniques in one collection, jewelry designer Paula Crevoshay underscores the appropriateness of using such varied pieces in contemporary designs. In fact, she compels us to reexamine the connection between jewelry and gemstone art and to transcend our own traditional views. "Voices of the Earth" will be exhibited at the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania, from May 1 to July 31, 2002.

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