

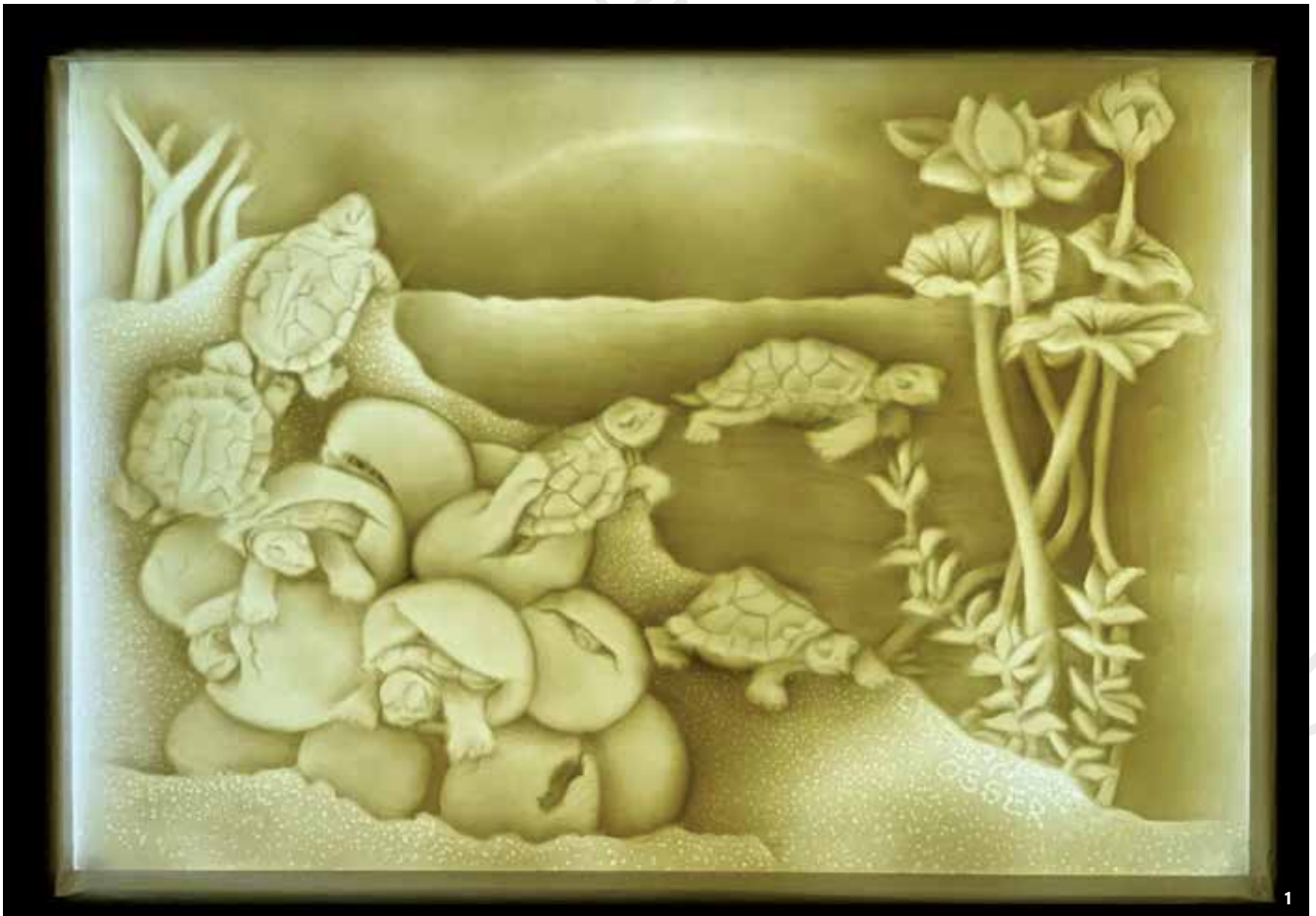
A New Path with **LITHOPHANES**

by Stephanie Osser

Lithophanes¹ were made starting in the 1820s. Very thin porcelain was developed that could enable translucent pictures to be created in a surface, then backlit to illuminate the imagery. Baron Bourgoing obtained a series of French patents for his methods starting in 1827 and continued through the middle of the century. Lithophanes quickly became quite popular and hundreds of thousands were made, in dozens of countries, though not in the US particularly. They added interest in the poorly lit homes of the pre-electricity era because even dim candlelight could be used to display their images, from scenes of nature to historical military or political figures to persons of romantic interest. When photography and electricity became widespread, interest in lithophanes waned,

and by the 20th century, they were no longer being made (though examples can be found in many art museums). The Blair Museum of Lithophanes, the only lithophane museum in the world, was just relocated and is on view to the public in the Schedel Arboretum and Gardens in Elmore, Ohio.

I made some lithophanes earlier in my career but then decided to study them more intensely, so I took a residency at the International Ceramics Studio in Kecskemét, Hungary. There, I had a tutorial with Ilona Romule, known for her important work in this area. I made lithophanes of illustrations of turtles that I had drawn for a children's book years ago. In 2018, I was honored to have The Blair Museum acquire my *Turtle Landscape*



Lithophane (made in Kecskemét) for their collection. The museum curator, Julia LaBay Darrah, also mounted an exhibition there in 2019 entitled *All About Eggs* that chronicled the history of these illustrations starting in the book and winding up in lithophanes.

To have a first experience with lithophanes, making a nightlight can be rewarding. Then you can try adding lithophanes to the bottom or sides of vessels with your small image.

Finding Your Materials

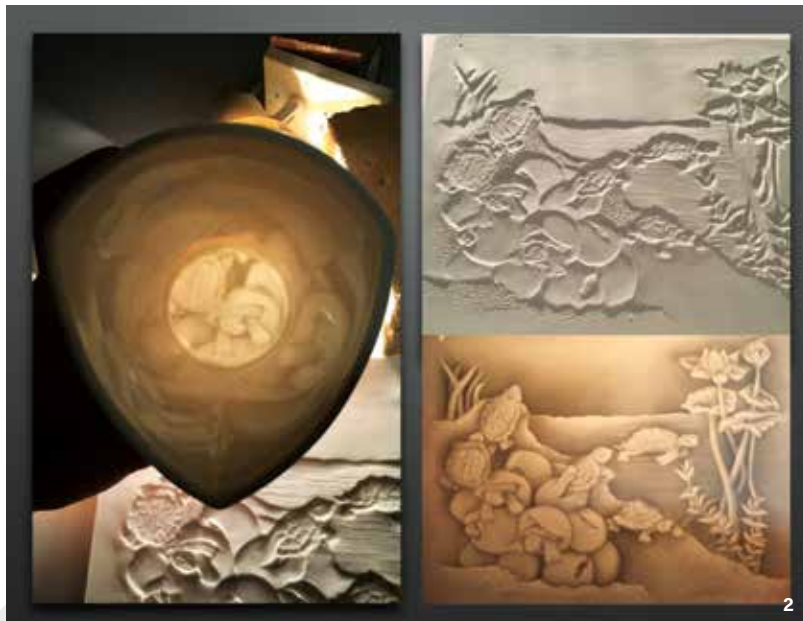
To begin, cast a block of plaster that will be carved in relief. Buy the freshest plaster available and be sure to check the date on the bag. A level is your best friend at this step. Use it to make sure your pouring surface and carving blocks and bats are level—this ensures a level surface for making your final slip-cast lithophane.

Cast your plaster carving blocks on top of smooth, shiny granite or marble tile. The plaster will release easily from these impermeable materials and the block's surfaces will be just as smooth. Build wood frames with clay supports along the perimeter of each tile for pouring in your plaster (A). Start out small, with plaster blocks that are about 5×3½×1 inches. Refine the plaster carving surface with sandpaper once cured (B).

With any leftover plaster, I make thin, lightweight bats (see C), compressing the flowing plaster between two heavy, shiny granite or marble tiles (about 12×12×¼ inch). I make different sizes of these bats, each about ¼–½ inch thick. Because they are lightweight, I put my wet lithophanes between two thin plaster bats for drying.

When sourcing carving tools, either use what you have, make your own, find dental tools, or buy tools from Kemper, Xiem, or Mudtools (see D). You will definitely need a fettling knife and a rubber-tipped, two-sided smoothing tool that can be trimmed to the shape you need. This is helpful in scoring and slipping out-of-reach areas like the bottom of a cup—should you decide to add a lithophane there. My favorite tool is a tiny metal rib made at Kecskemét by their wonderful support technicians. See the rib pictured in the bottom right of image D. If you'd like to make one of your own, trace it and cut the shape from metal or a plastic card.

Mix the plaster and carefully pour it into your frame on the marble slabs. Once set up, smooth the uneven edges on the top and bottom. Keep them wet: they are easier to carve and there will be no plaster dust.



1 Stephanie Osser's *Turtle Landscape Lithophane* from illustrations made for non-fiction children's book, *All About Eggs*, by Millicent Selsam, 1980. 2 Lithophane turtles image in base of a cup. Fired porcelain panel is recessed after firing and shows various tonalities and the feeling of bas-relief when backlit. 3 Framed *Turtle Landscape Lithophane* with LED light panel behind it. Note: bowed out center creates the rainbow over the pond when lights are on. Photo: Ann Woodard.

Make a damp box out of a plastic container. Pour about a 1½-inch layer of plaster into the bottom, let it set, then keep it moist with a tight-fitting lid. This damp box helps keep the lithophane blocks wet as I carve, and I also use it for storing my slip-cast pieces of cut-out lithophanes to add to the bottom or sides of vessels. Everything stays damp and ready for when you resume work. Remember to spray water on the plaster in your damp box while in production.

You may use both sides of the damp plaster block to carve separate images. Starting with my pencil guidelines on the plaster, I carve an outline of my image on the plaster. Keep in mind that this is going to be a very shallow bas relief with no undercuts for easy release and with three levels: foreground, middle ground, and background. I use a curved clean-up tool and start with the shallow areas of the image, then carve the deeper areas (E). The lowest depth should be about 3mm (1/8 inch). With experience, you can guess what depth is going to produce various tonalities. The shallowest areas will be the brightest, with half tones created by various thicknesses of the fired porcelain.

You can press some soft porcelain clay or a white clay body (to keep your plaster clean) onto your image to evaluate your results



4 Trimmed section of my lithophane image, supported by bracket and wall plug and plugged into an outlet. Note: the image is recessed. 5 Using a green nightlight for fun, the image's optical illusion pops forward visually when backlit.

so far. This process can also clean up some of the carved plaster. When you are done and have a clean final product, you can even make some bisque stamps by pressing clay into areas of the carving.

Use fine-grit sandpapers or sanding sponges for smoothing and burnishing both the carved surfaces and areas around the carved imagery while the plaster is still wet, and wash your carved plaster block to remove all remnants of plaster debris. Let the plaster relief block dry completely.

Casting the Lithophanes

When working with porcelain slip, keep the following items handy: a bucket of clean water, a clean sponge, and a cloth for keeping hands clean. I use Laguna Glacier White S3128 translucent porcelain slip. It is translucent from 1/8 inch to 1/4 inch thick and can be fired from cone 5–8 for translucency. The slip has an average shrinkage rate of 14.5% and an average water absorption rate of less than 0.25%.

My supplier for nightlight brackets, plugs, and bulb supplies is listed at the end of this article. The lithophanes you will make should be about 1/8 inch or 3 mm thick, and flat, to fit in the straight brackets. After firing, you can mount the lithophane, using the provided clips and screws, into the plug.

Add a fence of painter's tape around the border of your carved plaster block so that it peaks above the image about 1/8 inch all around. Pour porcelain slip over the plaster block, so it stays within tape fence (F). Pour from the center so the slip flows evenly over the textured surface. Jiggle the block to help it along.

Once the slip is stable, remove the painter's tape. Smooth over the surface lightly and gently with a flat squeegee or rib, making sure that it's around 1/8 inch thick overall. This ensures that your lithophane, once fired, will fit in the nightlight bracket.

Once the slip loses its sheen (as the dry plaster absorbs the moisture) but is still flexible, flip it onto the thin, dry plaster bats or ware boards (G). Open metal shelving also works. While still soft, you may cut the outline of your image, or smooth the edges with a sponge. You could add holes for hanging it in a window.

For drying the slip, either put the slab between two of your lightweight plaster bats, or add some light weights to the edges. Porcelain has memory, and sometimes flat tiles warp or even crack in the kiln.

You may find cracks in areas of your lithophane carving that are very thin and fragile. Try to prevent this by carving those sections of your mold a bit deeper (to make the cast porcelain slightly thicker there) or pour the slip to make it slightly thicker in these places.

I fire my lithophanes to cone 6 on a shelf sprinkled with aluminum hydroxide to facilitate movement as they shrink. But even if your first lithophanes warp or crack, I promise you a smile as you hold it up to a light and say "Wow!" Keep trying; it's a challenge, and you will get better as you understand your materials and your particular designs.

the author *Stephanie Osser is a multimedia illustrator and educator, based in Needham, Massachusetts. To learn more about her and her work, go to StephanieOsser.com.*

Resources

For nightlight components: <https://theporcelaingarden.com/night-light-replacement-parts-products>

For mounting larger lithophane panels: <https://evergraphs.com/lithophane-light-panels>



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6 Back of plug and bulb. Note: Use bulbs with taller filaments inside for best all over light. 7 Baa Baa Light Sheep, front view, nightlight mount. 6, 7 Photos: The Clay Studio, Philadelphia, for the exhibition "Small Favors 2021." 8 Baa Baa Light Sheep, shown backlit, revealing image. 9 My Family Odyssey—my dad, age 3, arriving at Ellis Island. Bas-relief tile, in permanent collection at the Statue of Liberty Ellis Island Museum. Photo: Cary Chu. 10 My Family Odyssey lithophane.

The Story of the Makoto Yabe Lithophane

Makoto Yabe, whose name means archer in Japanese and who would sign his work with the image of an archer, was a master with clay, glaze, design, handbuilding, and working on his potter's wheel. Depicted in this lithophane, Makoto is surrounded by his adoring students, at the potter's wheel, under the arm of the archer, with the sun symbolically setting on his special life.

I carved vessel-shaped stamps, like the pots I admired made by Makoto, and stamped them around the lithophane. Early Ukiyo-e Japanese woodblock prints also influenced the design, created first as a bas-relief tile and cast in plaster, then cast in translucent porcelain clay. The illuminated pots are arranged reminiscent of Makoto's flaming hot kiln.

Photo: Alice Yabe.



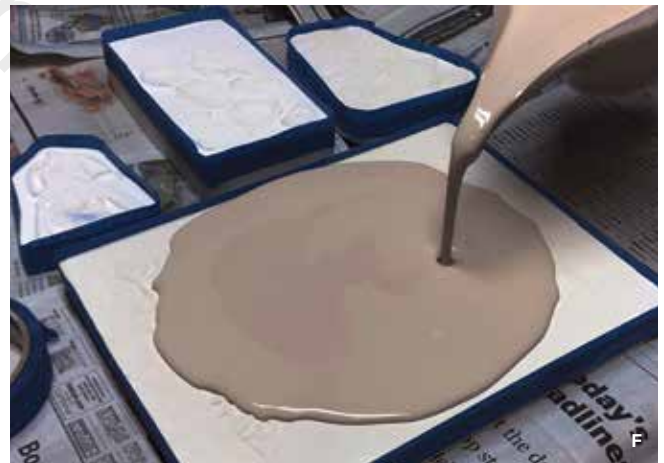
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For in-depth information and a recipe for translucent porcelain: <https://digitalfire.com/glossary/translucency>.

1 According to Margaret Carney, PhD., former Director and Curator of the Blair Museum of Lithophanes, this art form may be defined as "three-dimensional, translucent porcelain plaques which, when backlit, reveal detailed magical images." Her book *Lithophanes* (Schiffer Publishing, Ltd., 2008) contains an exhaustive review of the history of these artistic products with many inspiring photographs of the finest examples, and many details about how they are constructed. Also, see her article "Lithophanes" in *Ceramics: Art and Perception*, 2012; 87:25-29.



A Blocks used to make plaster carving slabs. **B** Smooth the surface as needed with fine sandpaper and a plastic card while the plaster is still wet but solid. **C** Use any leftover wet plaster by pouring it over smooth marble or granite tiles and placing another smooth tile on top to create thin plaster bats. Thin bats (left) shown along with thicker bat with recessed center used to make curve in the lithophane shown in image 1. **D** Assortment of tools for carving, scraping, and leveling. **E** Beginning of *Cellist*, first carving outline. Shown with my favorite tools, including carving tools, metal rib, a loop tool, and a trimming tool. Avoid creating any undercuts while carving. **F** Tape around the perimeter of the bone-dry plaster carvings; pour porcelain slip from the center out and until it reaches about ¼ inch (0.5 cm) thick or a little thicker. Wait until the porcelain loses its shine before smoothing with a rib, then when it is solid, remove from the plaster. **G** Removing my porcelain slab to place on the bat with the recessed center to create a rainbow over the landscape.

A, B, F, G Photos: Ann Woodard.