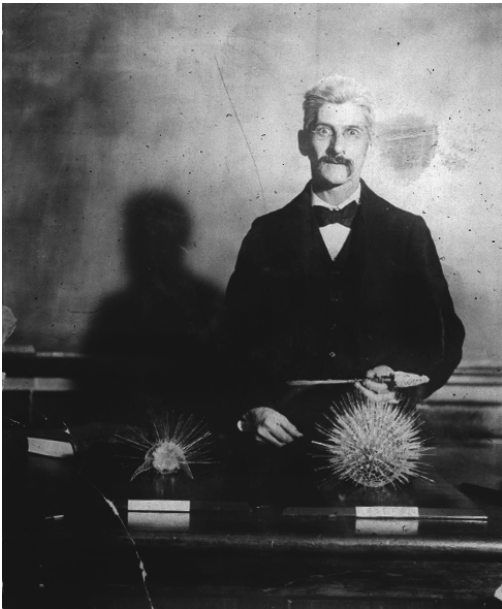


Introduction

The Blaschka glass invertebrate models depicted in the image below, were purchased in 1890 by Edward A. Birge, who was a professor and curator of the University of Wisconsin-Madison Natural History Cabinet. Birge, who eventually became President of the University, spent a whopping \$185.00 on an unknown number of Blaschka glass models. About fifty models still exist at the University of Wisconsin-Madison and are housed at the UW Zoological Museum, in a secure, climate controlled space.

These glass marine invertebrate models were made by a German glass blower named Leopold Blaschka (1822-1895), and his son Rudolph Blaschka (1857-1939). The Blaschkas made and sold thousands of glass teaching models to universities and museums around the world.

Vertebrate specimens were easily collected and prepared for museum displays; invertebrate organisms, however, such as those depicted here, were much more difficult to incorporate into



University President Edward A. Birge, ca. 1900, with Blaschka Glass models.
Image courtesy of UW-Madison Archives, #S07725

natural history collections for use in teaching and exhibition. The traditional method of displaying invertebrate specimens was to “fix” and then suspend them in preservative fluid in a glass jar.

Disadvantages of this preservation method were the fading of original colors and eventual collapse of soft-bodied specimens. Thus, for over thirty years, the Blaschkas refined their skills and created intricate, scientifically accurate, glass models that retained their original color and shape.

Over time, glass models like these were replaced by less expensive plaster and wax models, which by this time had become more refined and could be easily mass produced, shipped, stored and handled. These early and especially accurate Blaschka glass models have now become revered as rare and beautiful, masterful, works of art.

Construction

Blashka glass models were made using standard lampworking (also known as flameworking) techniques, tools and equipment. A lampworker's bench of the period consisted of a workbench with a foot-powered bellows supplying air to a torch tip passing over a paraffin-fueled lamp wick. This technique was used to fashion individual model elements, as well as to assemble the individual components. Fusing colored glass enamels was also done in the flame, as was some annealing.

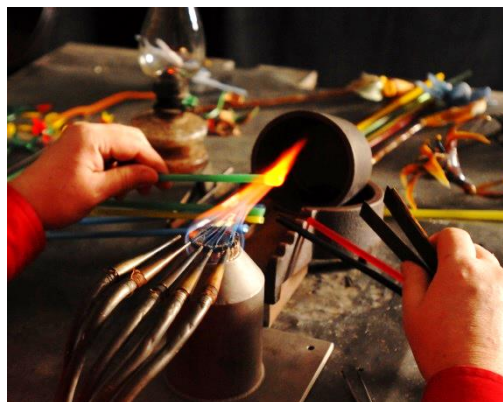


Photo courtesy of the Corning Museum of Glass, Rakow Research Library.



Simple tools were used to fashion all model elements.

Leopold and Rudolph were known to work in a similar production-type manner. Months of every year were spent making large quantities of the smaller elements, which they then used in the larger compositions. Then, the next months were spent painting, gluing, finishing and assembling. Leopold preferred lampworking while Rudolph was a fast and skilled painter. The result was that

they did their work in tandem, with each complementing the skills of the other. Final cold assembly and flame assembly were done by both men. Lastly, these delicate models were packed and shipped world-wide.

Glass-blowing shops, which employ many of the same techniques, but with the addition of some modern equipment, are still in use today. Tracy Drier, one of the collaborators on this project, runs the Scientific Glassblowing workshop in the Department of Chemistry.

Conservation

Although thousands of models were made and shipped around the world, only about sixty (mostly small) collections of Blaschka glass models exist. Some collections are made up entirely of marine invertebrate models, like the collection here; however, the largest assemblage is the Ware Collection of Glass Flowers at Harvard University. Most remaining models have sustained some structural damage – glass deterioration, delamination of glass layers and separation from support structures, fading colors, and breakdown of organic materials. Many are in desperate need of conservation.

The various media used to construct the “glass” models make conservation difficult. The Blaschka models are composites of glass, wire armatures, animal glue, paper, water color and oil-based paint, variously colored glass enamels for coloring and texturing effects, and often other unusual materials needed to achieve the desired realistic appearance. Further complicating conservation efforts, the Blaschkas never shared their formulas or techniques with apparently anyone. Also, chemicals, materials and formulas used by the Blaschkas evolved and changed over their thirty years of model making. Therefore, curators and conservators must examine, analyze and treat each model individually.

In April 2014, Astrid van Giffen, a highly specialized glass conservator from the Corning Museum of Glass, visited the UW-Madison Zoological Museum collection of Blaschka glass models. She conducted a preservation assessment, which will be used as a catalyst for seeking funds to preserve this unusual and delicate collection.