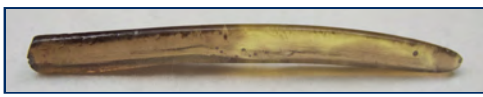




# Art Conservation *and bygone modernity*

*Decorative hair combs were once a popular adornment for women who used them to support the heavy, upswept hairstyles popular before World War I; following the war, bobbed hair became the rage. While these combs are now viewed as charming relics of a bygone era, many were made from a very modern material – plastic. They also present particular challenges related to conservation,*



which is why an early 20th-century imitation tortoiseshell comb seemed like a perfect opportunity for second-year Winterthur/University of Delaware Program in Art Conservation (WUDPAC) Fellow Samantha Owens, who has a strong interest in modern and contemporary art.

The main section of the translucent low-back comb is made of cellulose nitrate. This early thermoplastic material was developed in the mid-19th century and was most famously used as Celluloid to make film in the photographic and movie industries. After 1890, it was used to imitate combs and other objects traditionally made of the more expensive ivory and tortoiseshell. One problem, however, was that the camphor used to plasticize the material was highly flammable, and newspapers of that era sometimes carried stories about hair combs catching fire when a woman wearing one stood too close to an open flame. By the 1930s, it was apparent that cellulose nitrate tended to deteriorate quickly; it largely disappeared, and more stable plastics were used instead.

Sam began her treatment by removing the accession number from the Chicago History Museum, which donated the comb to the WUDPAC study collection in 2007. The number was visible even from the front. Because it had been applied without a barrier layer, she could remove it and avoid damage to the plastic only by working carefully with a scalpel and a microtool under the microscope. Sam cleaned the comb with swabs, sponges, and barely damp microfiber cloth since cellulose nitrate is very sensitive to all solvents. She cleaned the decorative copper band set with 125 paste stones with dry cotton swabs and also replaced a missing tooth that she created from two-toned epoxy. The comb once again has a full complement of 25 teeth and shows why it was such a highly sought decorative accessory for women 100 years ago.

Sam's final step was to create a box that allows for ample air movement - this helps prevent build-up of acidic vapors produced as the plastic degrades. The comb will remain in the WUDPAC study collection as an example to instruct visitors and future generations of art conservation students about the poor aging properties of cellulose nitrate.



## ARTC Spotlight—May 2016

*The University of Delaware's Art Conservation Department educates and trains professional conservators who are well versed in the treatment, analysis, documentation, and preventive conservation of individual artifacts and entire collections. For more news about our students and other department activities visit our web site at [www.artcons.udel.edu](http://www.artcons.udel.edu).*

*Top: Verso of comb with missing tooth, before treatment. Above: WUDPAC Fellow Samantha Owens applies gentle weight after heating and humidification of deformed area of comb, a selection of tinted epoxies, and the replacement tooth made with tinted epoxy imitating tortoiseshell. Right: Recto detail of paste stones and band, before treatment. (Photos: Samantha Owens, Leah Bright.)*