

# DENTALIUM EARRINGS: CONSERVATION OF NINETEENTH-CENTURY TLINGIT EARRINGS WITH ORIGINAL MATERIAL

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## ABSTRACT

This report investigates the use of original material sourced from a local Indigenous community to conserve a pair of Tlingit earrings held at the Agnes Etherington Art Center in Kingston, Ontario. This article discusses the thought process and technical procedure involved in developing and carrying out a conservation treatment of earrings composed of dentalium shell, sinew, leather, glass beads, and walrus ivory. The main technical issue for the conservation of these earrings involved the creation of imitation shell that would be used as a structural fill. The conservation treatment involved the use of original shell material as various attempts to create an imitation shell with conservation grade materials proved to be unsuccessful. The decision to source material from the local Indigenous community is an attempt to consider the articles of the United Nations Declaration on the Rights of Indigenous Peoples, the definition of UNESCO's intangible cultural heritage, and theories of decolonization into the ethical and technical practice of conservation of indigenous material.

## INTRODUCTION

A pair of Tlingit earrings in the collections of the Agnes Etherington Art Center in Kingston, Ontario, were conserved by a student in the master of art conservation degree program at Queen's University. The Agnes Etherington Art Center has a long-standing history of research and collaboration with the Department of Art History and Art Conservation at Queen's University. Part of that collaboration involves the conservation treatment of artifacts by students enrolled in the master of art conservation program so that they may gather the necessary technical skills required by professional conservators.

The main conservation issue presented by these earrings was the creation of a fill material for an area of loss on one of the earrings. Other minor conservation issues included fraying of sinew as well as dust and dirt accumulation on the shells and beads due to previous display and storage conditions. As the student tasked with the conservation treatment of the Tlingit earrings and

as an Indigenous emerging conservator of *Anishinaabe* (Ojibwe) and *Néhiyaw* (Cree) descent who is learning about Western conservation theories and practices, I took it upon myself to begin discussions wherever possible with the source communities, contemporary craftspeople, and other institutions, such as the Alaska State Museum, to gather perspectives on the conservation of these earrings using original material.

As the project developed, it was clear that establishing relationships with community members across Canada and efforts to incorporate Indigenous ways of knowing and learning in the largely Westernized field of art conservation are arduous and exhaustive undertakings. Indigenous ways of knowing and learning include story sharing, community links, land links, nonlinear pathways, learning maps, and deconstruction and reconstruction of established methodologies, all of which vary among tribal nations yet are important to integrate when

dealing with Indigenous cultural heritage (Johnston et al. 2018; Wilson 2004). As the project's time frame did not allow for meaningful consultation with community members and contemporary craftspeople of Tlingit descent, we decided to use original material to respect the intangible cultural heritage aspects encompassing these earrings and as a response to the Truth and Reconciliation Commission of Canada's (TRC) Calls to Action (2015).

The following discusses the Tlingit earrings through a Western conservation methodological approach of documentation of object history and context, examination, and conservation treatment. Contrasting with the technical description of the conservation treatment, the discussion focuses on a holistic approach to understanding the conservation of these earrings through an Indigenous lens, which includes reasoning for the inclusion of the TRC's Calls to Action, incorporation of intangible cultural heritage aspects as defined by UNESCO, and aspects of Indigenous ways of knowing and learning weaved throughout the project.

## EARRINGS

These earrings were constructed by the Tlingit people, whose name means the "people of the tides" and who have roots in coastal Alaska from 11,000 years ago (McLellan 2012). The materials include glass beads, leather, sinew, walrus ivory, wool, and dentalium shells. These dentalium shells are the exterior protection of the scaphopod mollusk

under the order of Dentaliida, a sea bottom feeder that lives in depths over 6000 meters (Barton 1994). Tlingit people highly valued dentalium shells and used them in personal adornment and decorating blankets and often traded them with the Nuu-chah-nulth and Kwakwaka'wakw groups of what is now known as Vancouver Island (Emmons 1991:173). Earrings were made for both personal and ceremonial use, with the women's earrings varying in style from the men's as described by Emmons:

originally with a strip of hide ornamented with dentalia. The modern earring was of red worsted or yarn in skeins...in the dance, these long pendants were very effective, sawing from side to side with the movement of the body...strips of tanned deerskin, wider at the bottom than at the top...the bottom was hung with twisted strands of mountain goat wool. (244)

Emmons's vivid description of Tlingit earrings is echoed in the image of the earrings in Fig. 1. The species of animal used for the leather and sinew components is unknown due to limited analytical resources at Queen's University; however, analysis could be done through peptide mass fingerprinting to determine what animal was consumed in the making of these earrings (Kirby 2017). The beads could be either Russian trade beads or of other Asian origin, namely China, which used beads to trade with Indigenous populations along the Pacific Northwest coast during the seventeenth and eighteenth centuries as suggested by Burgess and Dussubieux (2007).



Figure 1. Tlingit earrings before treatment. Flash illumination. Photo by Paige Van Tassel. M14-001.13a,b. Agnes Etherington Art Center, Kingston, ON.

## OBJECT BIOGRAPHY

Henrietta Constantine collected a pair of dentalium shell earrings on Wrangell Island between 1895 and 1908. In 1929, she sold them, along with many items of circumpolar origin, to Agnes Etherington. These materials became the basis of the collection and center that is known today as the Agnes Etherington Art Center in Kingston, Ontario. In a photograph dated 1931, the earrings (M14-001.13a,b) were displayed in the Douglas

Library on Queen’s University campus, in a closed display showing the hooks intertwined as they rested beside each other. Also in the display case were other items Henrietta Constantine had collected, such as scrimshaw ivory, napkin rings, and mammoth tusks. In a Queen’s University journal article dated November 29, 1929 (Fig. 2), these earrings, along with the other objects in the collection, were described as “a veritable mine of romance...it comprises a wide variety of implements, weapons and ornaments of the Eskimo” (Queens University Journal 1929:1). The journal used the term “Eskimo” as a misnomer for all Indigenous peoples originating from the circumpolar north, including the Inuit and Innu of modern-day Alaska, Canada, and Greenland and the Yupik of Alaska and northern parts of Russia. “Eskimo” was first used by explorer Samuel Hearne in his 1795 publication *A Journey to the Northern Ocean*, where he describes the people

of the north as *esquimaux*. The earrings in question are not Eskimo, however, and this illuminates the inaccurate generalizations made in the twentieth century about Indigenous peoples and cultures in Canada.

Due to the deteriorated state of the earrings, they were taken out of the Douglas Library display case in 2014 and placed within the Agnes vault under controlled humidity and temperature conditions to prevent further deterioration.

### CONSERVATION TREATMENT

Table 1 outlines the conservation treatment for these earrings, along with the accompanying reason for carrying out each step. Before treatment, the earrings were analyzed using a Bruker Tracer III handheld portable X-ray fluorescence (pXRF) analyzer for any presence of pesticide



Figure 2. News clipping from Queen’s Journal vol. LVI, September 29, 1929.

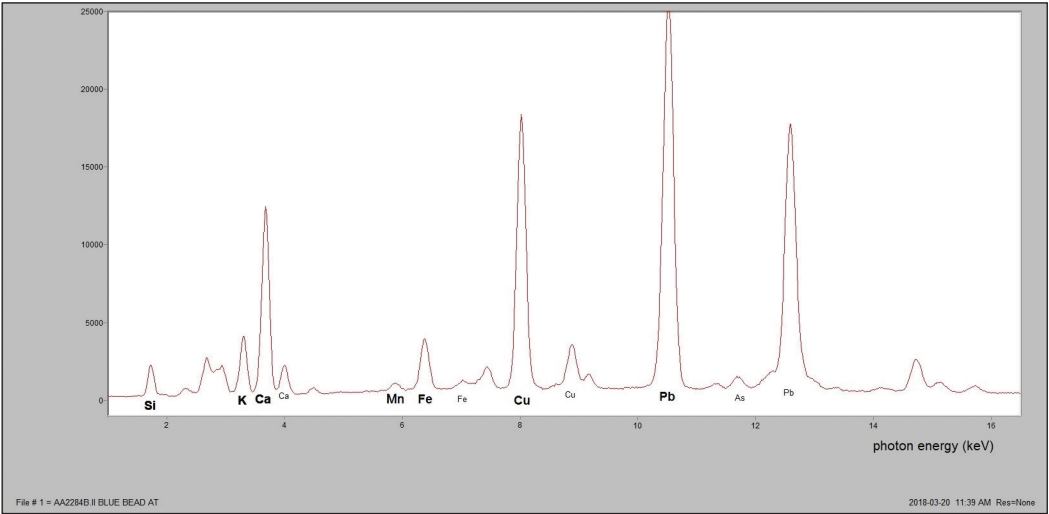


Figure 3. XRF spectrum of the earrings.

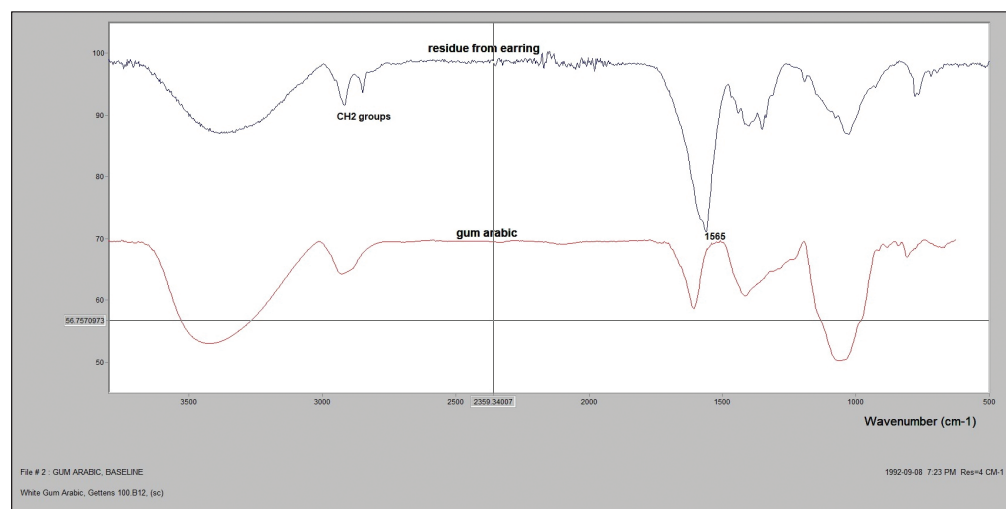
Table 1. Conservation steps involved in the treatment of earrings, M14-001.13a-b

Conservation Step	Tools Involved	Reason
1. Before-treatment photos	DSLR camera with flash photography	Evidence of condition before treatment
2. Mechanical surface cleaning	Scalpel, toothpicks, soft brushes, HEPA filtered vacuum	To reduce amount of storage dust accumulated on the surface of the earrings
3. Solvent surface cleaning	Ethanol, cotton swabs	To reduce the amount of accretions on the glass beads to bring some vibrancy and color back
4. Consolidation of the sinew	1% Klucel G in isopropanol with soft brushes	To prevent further fraying of the sinew
5. UV marking of the new dentalium shell	1% Klucel G in isopropanol with soft brushes	To allow further research to distinguish between original material and new fill material under UV-induced visible fluorescence
6. Adhere the sinew at the end of the fill	40% Paraloid B72 in acetone with a toothpick	To prevent loss of the new fill during storage and handling
7. After-treatment photos	DSLR camera with flash photography	To show the difference after treatment and the incorporation of the new fill

use, because it was a nondestructive analytical technique that was readily available to the Queen's University Art Conservation department. Fourier-transform infrared spectroscopy (FTIR), a minimally invasive analytical technique, was used to identify the residue present on the earrings.

The pXRF analysis was done on the large glass beads, shell, and leather components. Analysis of the glass components indicated trace amounts of arsenic and lead, which suggests that they may have been treated with pesticides in the past. An alternative explanation is that these elements are part of the glass, and the arsenic and lead detected are the deterioration components of the glass. Other elemental components detected in the glass beads are copper, iron, manganese, silicon, potassium, and calcium (Fig. 3). Further quantifiable analysis could confirm this theory using microchemical testing and minimally invasive analysis, which were not available at time of treatment.

FTIR of the residue on the beads suggests that gum arabic was used either as a binder or as a glaze in the making of these glass beads (Fig. 4). It is unclear whether the material has been exuded out of the beads as a part of the deterioration process or the gum arabic glaze is deteriorating. These results reveal that the glass beads may have been a traded good with Asian countries as suggested by Burgess and Dussubieux, who state that “the bead varieties thought to be manufactured in China tend to appear frequently in the Pacific Northwest and in Alaska” (2007:58).



*Figure 4. Infrared spectrum of glass bead residue showing similar peaks with gum arabic. The peak at  $1565\text{ cm}^{-1}$ , with the  $\text{CH}_2$  group absorptions near  $2900\text{ cm}^{-1}$  and other weak absorptions, suggest the presence of carboxylic acid salt.*

The decision to incorporate original material in the treatment of the earrings resulted from many consultations with the direct supervisor of the project, Amandina Anastassiades, consulting other studies done with original material (Chavarria 2005; Cruickshank et al. 2009; Fonnicello 2014), and the author's unsuccessful attempts at filling the loss with conservation-grade materials. Such attempts included testing the suitability of plaster fills using plasticine mold, a silicone rubber mold, and a clay model into which the plaster could then be casted. It was notably difficult to re-create the natural curve of the material along with the hollow core, which could then be fit onto the sinew for reintegration. Each casting method offered substantial problems that conflicted with the limited amount of time afforded to complete the project. Japanese tissue paper was also considered with various adhesives and varying numbers of layers; however, the texture and rigidity did not allow for flexibility, and thus it was not possible to create a slight curve to the fill. Epoxy and plaster were thought to be too heavy, risking further damage to the sinew, and therefore original material was chosen as a fill for the earrings.

To prevent confusion, a UV marker consolidant/solvent mixture was applied to the new shell to distinguish between the original and the new material. Furthermore, this new fill also provides a visual indication of restoration as its brighter white color contrasts with the original shell, which had collected dirt accretions from sourcing and use over the years (Brady et al. 2006; Storch 1997). The difference can be seen under UV-induced visible fluorescence (Fig. 5).

The consolidant chosen for UV marking was 1% Klucel G in isopropanol as it showed the most fluorescence in testing and was the best consolidant for sinew, especially in preventing further fraying. The consolidant can be seen at both ends of the new dentalium shell fills under UV without being a distraction under normal light (Fig. 6).



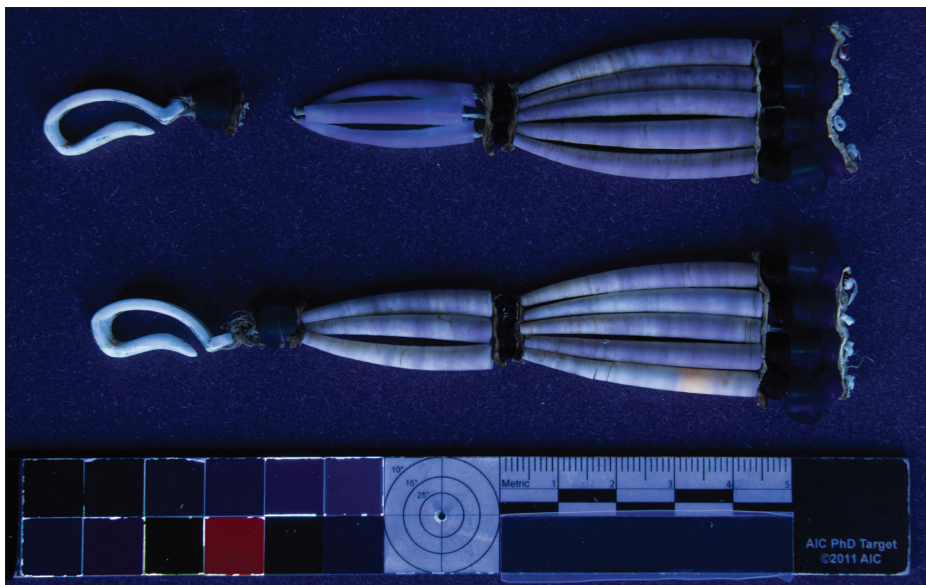


Figure 5. Tlingit earrings after treatment. UV-induced visible fluorescence. Photo by Paige Van Tassel. M14-001.13a-b. Agnes Etherington Art Center, Kingston, ON.



Figure 6. Tlingit earrings after treatment. Flash illumination. Photo by Paige Van Tassel. M14-001.13a-b. Agnes Etherington Art Center, Kingston, ON.

## DISCUSSION

In consultation with the artifacts treatment supervisor at the time, Amandina Anastassiades, we decided that the treatment plan would be guided by the Canadian Association for Conservation of Cultural Property (CAC) and the Canadian Association of Professional Conservators (CAPC) Code of Ethics article II, which states: “in the conservation of cultural property, all actions of the conservation professional must be governed by an

informed respect for the integrity of the property, including physical, conceptual, historical, and aesthetic considerations” (CAC 2000). UNESCO defines intangible cultural heritage as a “practice, representation, expression, knowledge, or skill as well as the instruments, objects, artifacts and cultural spaces that are a part of a place’s cultural heritage” (UNESCO 2003:2; UNESCO n.d.:9). Therefore, to use original material under the CAC-CAPC Code of Ethics and as a part of an intangible cultural heritage aspect of the Nuuchah-nulth people of Vancouver Island, the conservation treatment would be to preserve the tradition of collecting and using dentalium shells in the commercial exchange taking place with a First Nations community. In addition, the self-governance agreement of the Nuuchah-nulth peoples, as well as article 11 of the United Nations Declaration on the Rights of Indigenous Peoples (United Nations 2007), recognizes that they have legal control of the sourcing and distribution of this beautiful material. In the early days of trade and exploration, dentalium shells were of significant monetary value to the Nuuchah-nulth peoples, who sustained themselves through the trade

and bargaining of these materials with other nations and explorers in the area (Barton 1994). In sourcing the material for conservation treatment, we decided to source from a First Nations community in Northern Ontario so that there would be a reciprocal benefit to the First Nations economy. This community in Northern Ontario assured the conservator responsible for the treatment that these shells were sourced from First Nations in the Pacific coastal areas. Due to the project time constraints and limited

budget, it was not possible to directly source the dentalium shell from the Nuu-chah-nulth or Tlingit communities.

In his thesis for Simon Fraser University, Andrew John Barton (1994) notes various source locations of dentalium shells and the cultural group associated with each location. Notably, the trading of these shells happened among nations along the Northwest Coast, such as between the Nuu-chah-nulth, Tlingit, Haida, and Kwakwaka'wakw groups. Also, a traditional Tlingit source of dentalium is the Stikine River, which is adjacent to Wrangell Island. This is just 10 kilometers from the area where Henrietta Constantine collected the earrings.

With the TRC's Calls to Action and the United Nations on the Rights of Indigenous peoples (UNDRIP) being implemented in Canada and within the university, it was imperative to consult with a culture bearer/knowledge keeper who is familiar with the culture and traditions in which these earrings were manufactured and used. If care and conservation of Indigenous materials are to be taught in the program, time and care must also be given to students to effectively incorporate Indigenous methodologies into the curriculum, as stated in the TRC's Calls to Action for the "development of culturally appropriate curricula...and integrate Indigenous knowledge and teaching methods into classrooms" (TRC 2015:7). In 2017, Queen's University formed a task force of students, scholars, faculty, staff, and members of the surrounding Kingston Indigenous community to create recommendations responding to the TRC's Calls to Action. The Office of Indigenous Initiatives, under the auspices of the Office of the Provost and Vice Principal, was formed to continually implement and create new initiatives throughout the university in accordance with the TRC. The latest report released by the Office of Indigenous Initiatives, in September 2019, states a recent cultivation of donor support for the conservation of Indigenous art (Queen's University 2019:7). Unfortunately, given the time constraints of the classroom, and more broadly the Queen's University master of art conservation program in general, connections to build and establish meaningful relationships with Tlingit communities were not possible, nor was a critical reflection on the effectiveness of the conservation program structure.

I contacted the Alaska State Museum to determine whether they had any information on such earrings as well as guidance for appropriateness in using original material as a fill. Throughout these discussions, it was confirmed that the earrings were Tlingit in origin, as they were taken

from Wrangell Island in the 1900s as suggested in the archives at the Agnes Etherington Art Center. Alaska State Museum conservator Ellen Carrlee stated, "If I were treating this object myself, I would be more inclined to create faux shell from a non-shell material to prevent confusion from anyone studying these in the future who did not have access to the treatment report. However, if a cultural consultant told me shell were the better option, I would follow that guidance" (pers. comm., 7 November 2019). Given the various pedagogies, both Western and Indigenous, guiding a practicing Indigenous conservator, I thought it best to use original material to reflect the intangible and tangible aspects surrounding the trade and manufacturing of these dentalium earrings.

Indigenous pedagogy and knowledge systems require knowledge sharing as a collaborative effort, where consultation and compromise are employed to consider all aspects of cultural care and significance for the objects. If these earrings are to be part of an exhibition at the Agnes Etherington Art Center, the curator will have to discuss with the Tlingit community the appropriate display of these objects, especially since the time frame to complete the conservation project could not allow these consultations to take place. In any subsequent display, explanatory text next to the object should describe the use of "new" original material so there is no chance of deceiving the audience. It is important for museum goers to know that these earrings were conserved concurrently with the intangible cultural heritage aspects of sourcing dentalium shells.

## CONCLUSION

It is important to incorporate Indigenous learning and knowledge as part of a treatment course when dealing with any Indigenous object. For this reason and with respect to the TRC's Calls to Action, original dentalium shells sourced from a First Nations in Northern Ontario were chosen as the fill material for these earrings as a form of reciprocity between Queen's University and First Nations.

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