

Working with Amber

A Class for GNEW



THL Agnes Marie de Calais
www.agnesmariedecalais.com

Introductions

I am Agnes de Calais. My passion is researching varied topics that fascinate me and then putting what I learn in to easily shareable and accessible formats. Though my projects may vary from the provenance of a piece of pottery, to understanding a medieval room, wordsmithing in varieties of styles and now amber work. The constant overarching theme is to research and ask questions.



What is Amber?



Amber is ancient(most from the Eocene, Oligocene and Miocene eras 55-23 million years ago) tree resin.

There are many types of amber, however the one commonly discovered and traded is Baltic Amber.

The resin matches no known species of however seems to be related to trees and shrubs in the Family Pinoideae...like modern Pines.

Amber in history

Amber trade routes that date back to at least 3000 BCE have been documented by archaeological finds.

Baltic amber has been found in Egyptian and Syrian tombs and as far away as Mongolia.

Amber was well known for medicinal, mystical and incense uses as well as a carving medium.

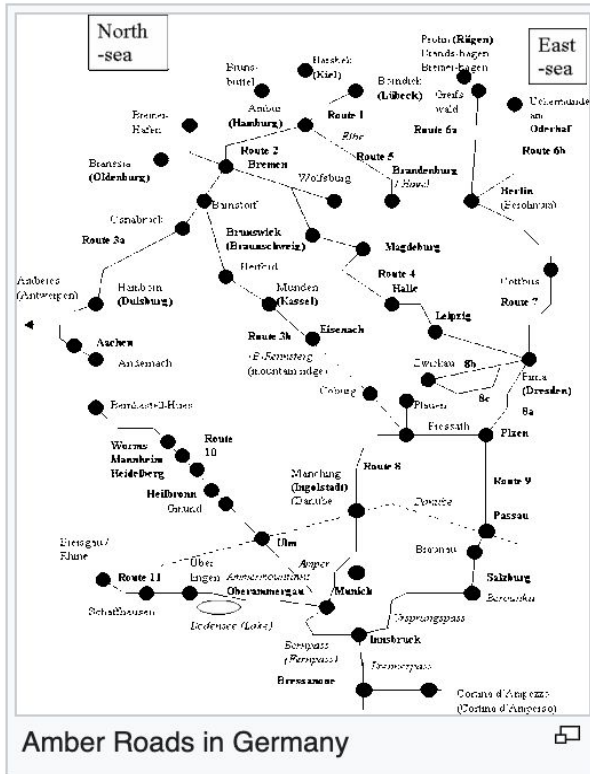
Actual documentation of ancient methods for amber use and trade do not reliably occur till the writings of Pliny the Elder around 75 AD and later Tacitus.

Amber trade routes are known through archaeology and and scientific analysis of amber samples/ works,



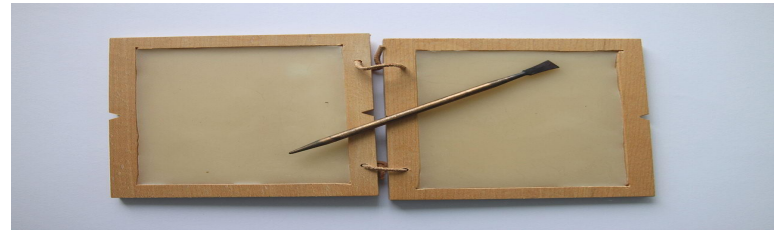
Figure 8 Sources of amber in the ancient world. Map by David Fuller.

Ancient Trade Routes



The Amber Road (east route), as hypothesized by Polish historian Jerzy Wielowiejski, *Główny szlak bursztynowy w czasach Cesarstwa Rzymskiego (Main Route of the Amber Road of the Roman Empire)*, 1980

Amber in classical writings



In Greek it was referred to as Elektron and is mentioned several times in the Odyssey

In the myth of its origins it is considered called tears of the daughters of Helios for their brother Phaeton

In other myths it was said to be formed with sun hitting the sea, Tears of Apollo or somehow linked with the sun and or the untimely death of a young hero

It should be noted that although there were many stories, early historians and thinkers also strongly believed it to be some kind of hardened tree resin.

(note- look for future storytelling by me with amber as a theme)

How ancient amber was worked

“A number of scholars have proposed that amber was worked by ivory-workers. Certainly, the tool marks on the objects in the Getty collection (and elsewhere) show that eighth-to-fourth-century B.C. amber objects were made with a toolkit probably no different from that of a Bronze Age ivory-worker, for which there is excellent archaeological evidence.²⁴⁵ (Much less is known about the pre-Roman period.) In fact, amber-working today has changed very little, with the exception of the speed offered by electric tools. Like Bronze Age toolkits, pre-Roman ones likely would have included bow drills, chisels, saws, knives or blades, points, awls, burins, rule and compass, vices, abrasives, oils, metal foils, pigments, and glues.”

From the Getty at <https://www.getty.edu/publications/ambers/intro/17/>

Early written evidence of amber work

“The twelfth-century A.D. guide to working crystal by Theophilus probably outlines the next steps, which are corroborated by the tooling remains on both pre-Roman and Roman-period ambers. The medieval treatise states: “Rub it with both hands on a hard sandstone moistened with water until it takes on the shape you want to give it; then on another stone of the same kind, which is finer and smoother, until it becomes completely smooth.”²⁵¹Theophilus then suggests the use of a flat abrasive surface to sand the nodule. Evidence of this is found on the remarkably well-preserved flat inside of the Getty pendant *Head of a Female Divinity or Sphinx* “

From the Getty <https://www.getty.edu/publications/ambers/intro/17/>

Spittal and goat skin

Other early writings mention the use of spittal also.

In my working I DO lick/use spittal and goat skin

because I feel it gives a polish that water can not.

I have a hypothesis that this MAY be due to the enzymes in saliva.

I pre rinse my amber before and after using this method, however all thoughts to hygiene and safety should always be thought of when working in public.



THE PROJECT

- I had an opportunity to purchase one pound of raw Baltic Amber.
- I decided to research pre 500 AD methods as my tool budget was low and I wanted to be as authentic as possible. Also, I have never worked with fabrication of art before and was not ready to be investing in a lot of tools until I decided how much more Amber work I wanted to do.
- This led me to research Amber, Amber working and the Ancient Amber Trade Networks of Europe.



Raw amber upon arrival

RESEARCHING EXTANT PIECES

- I wanted to find an extant piece to recreate and needed to find how to make it.
- After some research I found a set of Neolithic (2000 BCE) amber carvings from modern day Norway currently located at The University of Oslo, Norway. However, they could also be early Bronze Age



The Lines find from Ålfjord municipality. Probably from the Neolithic period. Photo: The Museum of Science, the Norwegian University of Science and Technology (NTNU).

- **Spit-** The use of spit or “spittle” is documented as having been used as part of the polishing of Amber. Because of the proteins and pH of human saliva, specifically the protein amylase, it makes sense that it would have been used. First I tried spitting on the goat skin and then a pool of saliva. Finally, I found that licking the Amber and or placing in my mouth worked best to help polish it. All Amber was cleaned and handled in a bacteria safe way and safety was kept in mind. It did however turn my tongue yellow for about two days.



Amber and spit on goat skin

- **Oil**- Olive oil was used to polish the amber. Oil was what was listed in the research and after talking to some artisans it seems tallow may have been used in period as well. Because of its definite long history of use, olive oil seemed an affordable and realistic option
- **Modern sandpaper**- Sandpaper was also used to help in the shaping process. I used a 150 grit paper. The rationale was that sand is not always portable and can have other things in it. I did not want to ingest dirt.

Manufacturing Process

Project 1



Raw amber is dusted and sorted



Before/After amber was washed in water and bathed in olive oil



Held to light to see clarity



Shaped using rocks



Sanding and polishing using goat skin



Sanding using modern sand paper 150 grit



Using spit to polish



Hand drilling used predominately

Final product

Project one



Finished piece. The final product started to fracture as I drilled so I stopped drilling



Extant piece. This is drilled at the other end in a thinner area. I had avoided that due to fear of fracture

Amber Pendant 2.0

Amber Pendant based on extant
piece using mostly extant type
tools and methods



Background-

In my previous amber work I cleaned, prepared and shaped raw baltic amber in order to recreate a late Stone/Early Bronze Age pendant using mostly period techniques.

The bead I was trying to make ultimately fractured in the drilling process.

In my second attempt I used the same period materials for polishing and techniques as in my previous work . However I did use fine grit sandpaper to finish and a hand drill



Drilling was done before polishing in this iteration to not waste time if it fractured again.

Drilling was also done on a thicker piece to prevent fracture.





Pendant next to the shards of the first attempt

Creating Sand Paper by accident

Research mentioned the use of pumice stones on amber. When I tried this the result was not effective. I did however produce a large amount of pumice powder. When I mixed this on the goat skin with spittle, bee's wax and water it dried to create a type of sand paper.

When wet it was also a useful abrasive mixture.

Amber shaping with pre-roman style tools



MATERIALS



STONE AND OR
FLINT



PUMICE



SPITTAL!



ACCIDENTAL SANDPAPER
IS MADE





FINISHED BOAR HEAD

What are my sources for this class?

Primary/ Classics:

Aristotle- Marvellous Things Heard

Homer- Iliad

Pliny the Elder, Roman Lawyer,commander and historian , author of *Bella Germaniae and Naturalis Historia*

Quintus Fall of Troy

Tacitus- Roman Historian

Secondary and Modern:

Amber & Poland: A history crafted in resin. Culture.pl. (n.d.). Retrieved November 5, 2022, from <https://culture.pl/en/article/amber-poland-a-history-crafted-in-resin>

Amber – the most glittering material of the stone age. Museum of Cultural History. (n.d.). Retrieved November 5, 2022, from <https://www.khm.uio.no/english/collections/objects/amber-in-the-stone-age.html>

Cartwright, M. (2022, November 5). Amber in antiquity. World History Encyclopedia. Retrieved November 5, 2022, from <https://www.worldhistory.org/Amber/>

Causey, F. (n.d.). The working of amber: Ancient evidence and modern analysis. Ancient Carved Ambers in the J. Paul Getty Museum. Retrieved November 5, 2022, from <https://www.getty.edu/publications/ambers/intro/17/>

Charles River Editors. The Amber Road- The History and Legacy of the Ancient Trade Network That Moved Amber Across Europe. Charles River Editors , 2022.

Getty Museum, Los Angeles.

Wang, Y. (n.d.). Experimental studies on the heat treatment of Baltic amber. Gems & Gemology. Retrieved November 5, 2022, from <https://www.gia.edu/gems-gemology/summer-2014-wang-heat-treatment-of-baltic-amber>

*images by Google Slides image search

