COCKATRICE

The Arts & Sciences Journal for the Kingdom of Lochac

Summer AS 55 (2021)

This is the Summer AS 55 (2021) edition of Cockatrice, a publication of the Kingdom of Lochac of the Society for Creative Anachronism, Inc. (SCA, Inc.). Cockatrice is not a corporate publication of SCA, Inc., and does not delineate SCA, Inc. policies.

We're looking for photos of completed or in progress works, as well as articles, documentation, or class notes!

Please send through anything you'd like to see featured in Cockatrice to editor@cockatrice.lochac.sca.org - **if you're excited about it, we're excited to help you share it!**

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COCKATRICE CALENDAR 2021

	Submission Deadline	Publication Date
Autumn Edition	1st April 2021	1st May 2021
Winter Edition	1st July 2021	1st August 2021
Spring Edition	1st October 2021	1st November 2021

From the Editor

It is with some relief that I introduce this issue of Cockatrice. The last 18 months or so of issues, each three months apart as they are, have taught me better than to anchor myself too firmly in what's going on in the mundane world. I think it is fair to say, though, that there is, at very long last, a glimmer of sunshine on that bleak mundane horizon.

Twelfth Night was a wonderful event, for those permitted by health and law to attend. Despite border closures at the last second, the remote A&S judging solutions implemented by Gwen verch David meant that there was an impressive turnout for the competition, the results of which are posted later in this issue of Cockatrice.

Also featured in this issue is a very thoroughly researched article by Gumuuinus de Eggafridacappella, detailing the reasoning and construction of a **Carved Wooden Spoon**.

THL Johnnae llyn Lewis returns for the Known World Spotlight with a beautifully written article on **Casting Sugar Figures**. I am fascinated by the idea of 16th C Italians reusing their large sugar items across multiple feasts!

Finally, I have included an illumination blank that I have made based on the **Book of Kells, folio 250v**. Use it in your scrolls, or as embroidery inspiration, or colour it in just for fun!

Autumn Crown will be the next Kingdom A&S competition. The categories for the competition are:

- For the feet
- Parchment & Paper
- 14th Century

Your group's A&S officer can organise a local judging session before the event, if you're unable to attend but wish to submit an entry, and judging will also occur at the event itself.

Keep doing stuff that makes you happy, and being good to each other.

Bjorn Sæmundarson

Twelfth Night Competition Results

BY GWEN VERCH DAVID

The prize-winners of the Twelfth Night A&S Competition were:

Beginners, golden bell: Nobilis Gumuuinus De Eggafrida-capella, for a wooden spoon carved with great attention to authenticity and documentation, entered for the theme 'For the Home'.

Experienced, golden bell: Lady Marget Die Goldschmiedin, for three enameled fibulae, entered for the theme 'Rome'.

Beginners, silver bell: Lady Shinjo Takame, for a Noren door curtain, entered for the theme 'For the Home'.

All three of these gentles entered by distance, two of them judged locally, and one judged by documentation and photos. My thanks to the coordinating A&S officers who made that happen: Mistress Joie Tigre d'Argentona in Politarchopolis, Lord Minamoto no Hideaki in Rowany, and Lady Frances Affrica Ray in Aneala. I extend my thanks also to the judges: Baroness Caristiona nic Bheathain, Mistress Alexandra Hartshorne, Master Dede Kilic ibn Sungur, Mistress Branwen of Wercheavorde, and the Honorable Lord Lokki Rekkr.

Non-prize winners:

Wooden butter mould by Master Lorcan Ruadh

Leather cutlery wrap with polymer clay 'antler' toggle, by Astridr Bogsvider

With the conclusion of the Twelfth Night competition, the Autumn Crown competition is now open for entries and judging. The themes are: 'for the feet', 'parchment & paper', and '14th century'. This competition will be the final one for the current A&S Championship period, which has been open since Midwinter Coronation in A.S. 54 (2019). Talk to your local A&S officer if you would like to enter, or check out https://artsandsciences.lochac.sca.org/competitions/ for more information!

Carved Wooden Spoon

BY GUMUUINUS DE EGGAFRIDACAPELLA

Summary

The household item of the spoon is likely an Early Neolithic utensil, and spoons made from wood may have been created during this time. Due to the decaying properties of wood there are less extant artefacts, however the Oseberg find gives preserved examples. Wood-carving tools were most likely in use in the Viking Age, using forging methods in existence since 1st century. These tools of hardened steel would have refined the creation process for making wooden spoons. The techniques and tools used from roughly AD 820 are still in use today. I have used these techniques to craft a wooden spoon.

Introduction

Household goods and items are things which are used within households. They are tangible and movable items of property, and generally of a personal nature, found within the rooms of a house. For this topic, I chose to explore the creation of the humble spoon. The shape of the spoon may be scaled up or down as required, so it can be created as an eating utensil, with evidence suggesting those of Viking ways using smaller spoons for removing ear wax and measuring out cosmetics (MacGregor 1985).

Spoons are the oldest eating utensil and date back to the Paleolithic age, originating likely in southern Europe (Stefanović et al. 2019). V-based cattle bone spoons dating from the Early Neolithic age were part of prehistoric weaning equipment of babies (Stefanović et al. 2019). These bone spoons show evidence of carving with sharpened stones (Stefanović et al. 2019).

The design of these spoons are shallow, indicating their use with a semi-liquid type of porridge (Stefanović et al. 2019). Animal milk would have been available in this area between 9000 to 8000 years ago, coinciding with the age of these spoons (Stefanović et al. 2019). Similarly, domestic cereals became available in this region between 9000-8500 years ago (Stefanović et al. 2019), providing alternative food choices and in turn accelerating the need to create spoons to bring these new food choices to the mouth.

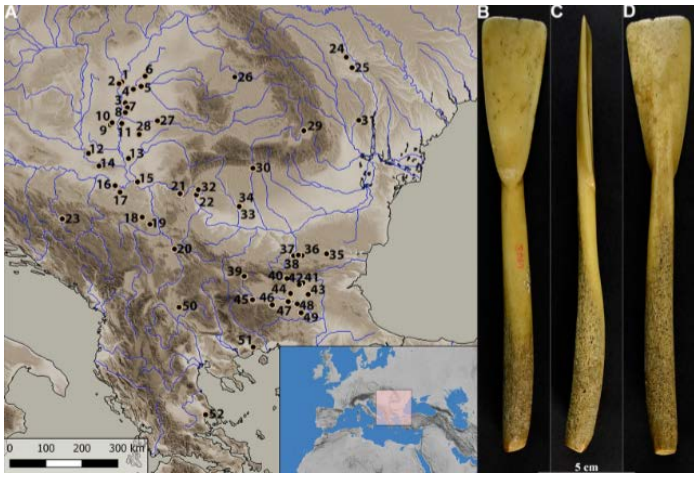

Figure 1: (A) the distribution of the Early Neolithic 'V' based bone spoons at 52 sites in South East Europe. (B) Front view of an example bone spoon. (C) Lateral view of the example bone spoon. (D) Back view of the example bone spoon. (Source: Stefanović et al. 2019).

In Ancient Egypt, spoons were made of materials such as ivory, flint, slate and different types of wood (Watson 2013). Greeks and Romans made their spoons from bronze and silver (Jones 2013). As the medieval times progressed, spoons were made from horn, wood, brass and pewter (Watson 2013).

Construction

Wood as a Medium

In the poem Húsdrápa, ca. 985, Úlfr Uggason described woodcarvings of mythological scenes adorning an Icelandic hall owned by the chieftain Óláfr pái (Schjeide 2015). Thus we know that the art form of skaldic poetry was presented on a wood-carved medium.

This description of poetry carved into wood indicates a sophisticated level of literacy, and we can infer that the actual finer carving of objects and items without a focus on writing literature would long pre-date this example. Archaeological finds of Viking Age (AD 800 – 1050's) and early medieval woodcarvings exist, and Old Norse literature provides further clues to culture being infused into wooden objects (Schjeide 2015).

Archaeological finds throughout the landscape of present day Norway show us that during the Viking Age there was a rich tradition of production of both everyday objects and ornate luxury goods made by highly skilled craftsmen. Although in most cases these artifacts are limited to metal, stone, glass, antler and other materials that would preserve well, we can assume that wooden artifacts existed at the time.

The deduction of wood carving existing prior to 985 is further supported by the abundance of wood-carved objects found in the Oseberg ship grave mound (Schjeide 2015). This ship was built in AD 820 and buried in a grave mound 14 years later. The preserved wooden objects owe their survival to favourable conditions creating a low-oxygen environment, along with extensive reconstruction efforts providing a wealth of information for us. The Oseberg provides us examples of wooden spoon artefacts, among other wooden artefacts.

Figure 2: Archaeological wooden artefacts from the Osenburg include an animal head post and kitchen equipment (Source: KHM, UiO).

In the artefacts from the Oseberg we can see the use of oak, ash, pine, yew, maple and birch (Amberger & Braovac 2015). In Australia a lot of these timbers are not as easily acquired.

I used pine for my first attempt at wood carving, as this is an easily accessible softwood, making it easier to carve, and not expensive to acquire. Hardwood can be used for carving and while it is more difficult to shape, it has longevity and a deeper luster. Softwood can be prone to damage.

It is important to pick wood that does not have the pith or knots (formed where branches extrude from the wood) present as these provide hard points that are difficult to carve. These aspects can be removed with an axe prior to carving.

Green wood is a more ideal age of wood to carve, rather than one that has been drying for years. The amount of moisture assists with ease of carving. To maintain the level of moisture I kept my spoon blank in the freezer, thawing it out when I was ready to carve. In between short bouts I kept it in the fridge. Moisture can be reintroduced to the wood by spraying a mix of isopropyl and water to the wood.

Figure 3: Replica's of spoons and spatulas found on the Oseberg.

Use of an Axe

Christensen (2008) notes that "both tool-marks and living tradition indicate that the axe was the most important tool used by all woodworkers". Norway has yielded approximately 3000 axes in Viking-Age graves, with large numbers also found in Sweden and Denmark (Christensen 2008). The Oseberg ship provides evidence of two small axes being used as tools (rather than weapons), with them found with other kitchen equipment near a butchered ox (Christensen 2008). Thus the use of an axe is supported in woodworking techniques.

After drawing out the top plane of my design, I used the axe to rough out the shape of the spoon with small incisions. This helps to remove most of the excess bulk stock.

Figure 4: An axe can be used to rough out the shape of the spoon and remove excess bulk.

Stop Cut

Where the wood needed to 'turn' at the neck (where the handle meets the bowl) I cut in perpendicular 'security stops' or 'stop cuts' with the axe, creating a shelf so that the wood does not continue to split along these lines.

I then cut out the back face of the spoon, leaving it deeper around the narrow point of the neck. The grain flow changes direction here so leaving extra meat would mean I could correct issues if the wood started to crack.

Figure 5: A sharp axe will allow for close cutting, reducing the amount of work needed with the knife.

Use of Carving Tools

Techniques can be gleaned from the relief carvings in the Oseberg find, where a knife could achieve most of the carving details (Schjeide 2015). More complicated relief carvings would have needed chisels and gouges to accomplish this, otherwise the variety of surface decorations could be made with a knife (Schjeide 2015). Mindfulness of the grain of the wood is demonstrated through the various hatching and chip patterns (Schjeide 2015).

The talented blacksmiths and metal workers of the time could have created specialized practical tools for a wood worker's craft, with arguments supporting the existence of chisels and curved gouges in the Viking Age (Schjeide 2015). In circa 983, over the heath in Laxárdalr, it is likely the woodcarvings in Óláfr's hall were created with aid of a V-groove parting tool (Schjeide 2015). A burial dating from the 9th or early 10th century contained a hollowing chisel (Saage, Kiilmann & Tvauri 2018), supporting the argument for a variety of chisels.

I used the following knives:

- Mora 120 Sloyd Knife
- BeaverCraft SK4LS Hook Knife (left hand)
- Mora 164 Hook Knife

Figure 6: The Mora 120 has a short but wide blade with a full tang, giving strength and stability.

Figure 7: The BeaverCraft Hook Knife has a long handle to provide addition leverage, and a shallow blade to create smooth curves.

Figure 8: The Mora 164 Hook Knife is distinguishable by its pointed end and the blade has a smaller radius than the BeaverCraft Hook Knife, allowing for finer detail and deeper bowl creation.

Figure 9: The three knives with the carved wooden spoon.

Tools with Hardened Edges

93 intact socketed axes were found at Kohtla-Vanaküla, dating to the 1st and 4th centuries, with examples of socketed iron axes in use in Central and Western Europe during c. 800-1 BC (Saage, Kiilmann & Tvauri 2018). Such axes could have been used as an adze by rotating the blade perpendicular the handle (Saage, Kiilmann & Tvauri 2018). Saage, Kiilmann & Tvauri (2018) thus speculate that such variations of the socketed axe and its range of uses could indicate a multi-purpose carpentry tool. I speculate further that this gives reason to think a collection of tools made fit for purpose could have been created for woodworkers.

Saage, Kiilmann & Tvauri (2018) found four types of forging patterns in the socketed axes studied (see Figure 10 below). While the core of the axe varied (with some having slag-rich iron cores and others having no filling to the blade core or socket), the cutting edge always consisted of a hardened edge (Saage, Kiilmann & Tvauri, 2018).

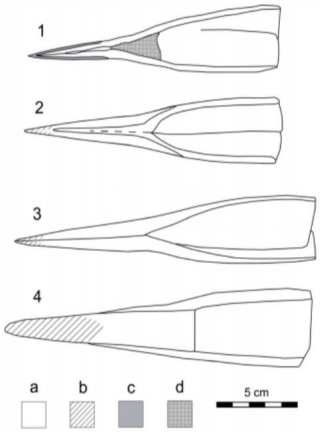

Figure 10: Four types of forging patterns of socketed axes. Legend: a – low carbon iron, b – locally carburized region, c – steel, d – slag-rich filling. (Source: Saage, Kiilmann & Tvauri 2018).

The first example shows a quenched and tempered martensite and this pattern of forging can date back to 3rd century CE (Saage, Kiilmann & Tvauri 2018).

The second pattern of forging shows an extra layer of material forge welded to the blade, however no filling is added to the blade core or socket, and this method of forging was used in 5th-6th centuries Estonia (Saage, Kiilmann & Tvauri 2018).

The third pattern of forging is simple where the axe is rolled and the blade is finished without adding extra components; this was used in 1st-2nd and 4th-5th centuries in Estonia, and later seen in the Oka river valley in the 5th and early 6th century (Saage, Kiilmann & Tvauri 2018).

The fourth pattern dates from the 3rd to 5th century, with an iron socket welded on either side of an iron core, which has then been carburized to steel and tempered (Saage, Kiilmann & Tvauri 2018).

Regardless of time or complexity, this demonstrates that axes were purposefully created with a durable and hardened cutting edge. There is no reason to assume that this method of forging did not extend to smaller blades such as those used in woodworking.

Softer metals used for the bulk of the blade allowed for decorating and engraving. Decorations such as inlaid strips of bronze are evident on the decorated axe-head of Viking type from Coventry, with the bronze embedded (but not flush) with the iron blade (Devenish & Elliott 1967).

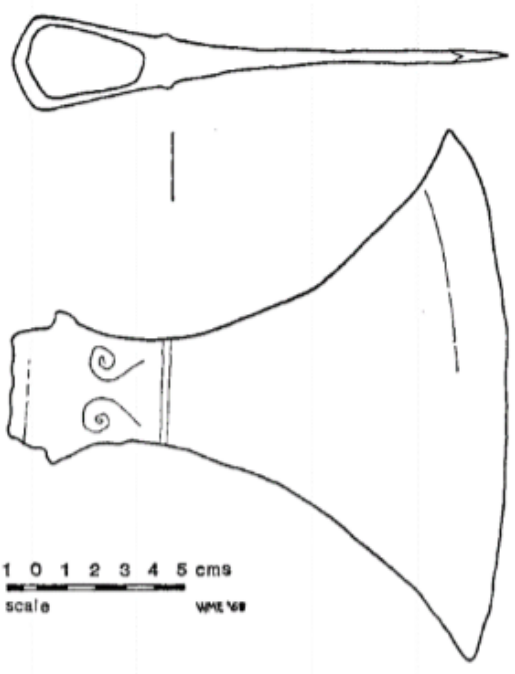

Figure 11: Drawing of the inlaid strips of bronze decorating the Viking axe from Coventry. (Source: Devenish & Elliott 1967).

Learning to Carve

The techniques used to create wooden spoons are likely to have been passed from carver to carver working together in close quarters (Stefanović et al. 2019). Studies on Bornholm Runestones and Slavonic pottery [both studies on items from the eleventh century and referred to by Stefanović et al. (2019).] suggest that technical execution would have been observed by the student, as similarities found could not be achieved by just providing models to the student. Viking mobility would have allowed for the exchange of information and techniques (Stefanović et al. 2019).

I had the benefit of being taught one-on-one by Little Spoon, following the traditions of seeking out a knowledgeable tutor. I reinforced my learnings via YouTube videos, in particular *Anne of All Trades* who provides woodworking techniques specifically tailored for female-built bodies.

The act of carving can take some time to get used to. The knives all handle differently, and there are several techniques that I needed to master.

Figure 12: I had to re-draw the pattern on the block of wood several times as I corrected for errors and the way the blade was guided by the grain of the wood. The length of the face should be with the grain to minimise concerns and work with the wood.

Pull Cut

The pull cut draws the blade towards the body. The best way to do this is to brace elbows against the sides of the body and stabilize the spoon against the sternum. This limits the movement of the blade and will not allow it to injure you.

Push Cut

The push cut is performed by pushing the blade away from the body, usually pushing with the thumb of the hand holding the spoon. The travel of the blade is limited by the distance the thumb extends.

Running Cut

The hand holding the knife stays in place, with the hand holding the wood drawing the piece against the blade. This results in long, shallow and controlled strokes.

Finishing

Spoons are curved in all 3 dimensions, so revisiting those planes were necessary. Redrawing assisted in making sure the centerline was maintained.

I made sure the spoon bowl fit comfortably in my mouth, and the handle sat comfortably in the hand, as this spoon was designed for eating with. I sanded the spoon lightly with 400, 800 and 1200 grit sandpaper,

giving it a smoother finish but not taking too much away from the roughened aesthetic of hand carving.

In between sanding, I wiped the spoon with a damp cloth. This removed the dust and assisted with 'raising the grain'. The water causes the wood fibres to swell, and sanding after this is done is only to smooth the surface and not cut deeper – this would expose more grain which would rise again when wetted.

By raising the grain like this, the wood fibres should not swell as significantly in subsequent wettings, and the spoon shouldn't feel as rough once it's dried again. This should be done prior to applying water-based sealants otherwise the final finish may not be smooth.

At this stage, a stain could be added to the wood. This is best done after rising the grain, as the now-opened grain more readily accepts the stain (Miller 2020).

Sealing

I used a beeswax/food grade oil combination that functions to both polish and seal the wood. I use this on my wood products, whether they are furniture or mugs or jewelry, as it works as both a safe and period alternative to varnish.

Beeswax was used in the mummification process, and so its conservation properties are well-known (Abdikheibari et al. 2015). Blends such as beeswax-colophony (that is, beeswax blended with rosin) is used as a sealant mixture for preservation (Abdikheibari et al. 2015).

The recipe I use requires:
- 1 part beeswax
- 3 parts food grade oil

I use beeswax brought from a local apiary, which required straining and filtering. I store this by itself and double-boil portions of it on demand to combine with the oil for the sealant. It is best to use the double-boiler method to melt the beeswax rather than put it in the microwave as this can cause it to explode.

Once the beeswax is melted then add the oil – it will possibly solidify again so maintain the heat to melt the beeswax again. Keep stirring to combine the two ingredients. Once it is melted you can remove it from the heat and allow it to cool (or transfer to your storage container). This makes a food-safe product that can be stored as it is for a year.

To apply the beeswax sealant there is no need to re-melt, as the heat of your hands assists in melting the sealant as its rubbed in. Rub it in to all surfaces of the wood and allow it to soak into the wood for 15 minutes. If required, add more sealant. Rub off the excess with paper towel. This sealant also acts as a water-resisting agent.

The beeswax will melt off the spoon if exposed to heat, however holding the spoon and moving it over a source of heat such as a flame will allow the beeswax and oil mixture to penetrate deep into the wood. Keep adding sealant until there is residue left on the spoon, indicating it has soaked to saturation. Wipe off the excess. This method also serves to harden the wood.

An alternative to using this sealant, especially if the spoon will be regularly exposed to heat, is to use linseed oil (not boiled linseed oil as this has added chemicals in it). Some people dislike the subtle flavor linseed oil can give their wooden items, and it can cause a slight yellowing of the wood. Another food grade oil with a high boiling point can be substituted to treat the spoon without the beeswax. Regular application of the oil will assist with longevity.

Final Product

Figure 13: Front view of the carved wooden spoon.

Figure 14: Side view of the carved spoon.

Figure 15: Back view of the wooden spoon, showing the bowl, neck and handle.

Figure 16: Close view of the back of the bowl.

Figure 17: Close view of the side of the bowl, showing the way the handle meets the bowl, and the curve of the bowl.

Lessons Learned

Bowl

I started on the handle first and while this was not bad, I think that working the bowl first would ensure that the edge of the bowl is maintained, and that the handle can then flow from it more naturally. The back of the bowl near the neck was not terribly difficult to carve, however I was very aware not to make the bowl too thin.

Handle

The curve of the handle where it met the bowl was the most difficult part of this, given the way the grain wants to cut along the vascular lines. I nearly lost the bowl with a long split from over-eager carving and thoughtlessness. Careful stop cuts ensured that the bowl was saved and the split was carved out completely without destroying the functionality of the item.

Finishing

I did not burnish the spoon before sealing it. Burnishing is the act of rubbing the wood fibres together again. This is generally done with a smooth hardened surface, and anything from a rock to a piece of antler or the back of the carving knife can serve this purpose. By rubbing the surface of the wood it smooths and hardens the surface and sharp corners can be dulled.

Complexity

A less complex project may have been more ideal for a beginning item. A kitchen spoon would not need such sweeping curves in all three planes and can be much more '2 dimensional' as shown by the *Anne of All Trades* free butter paddle template (Figure 18).

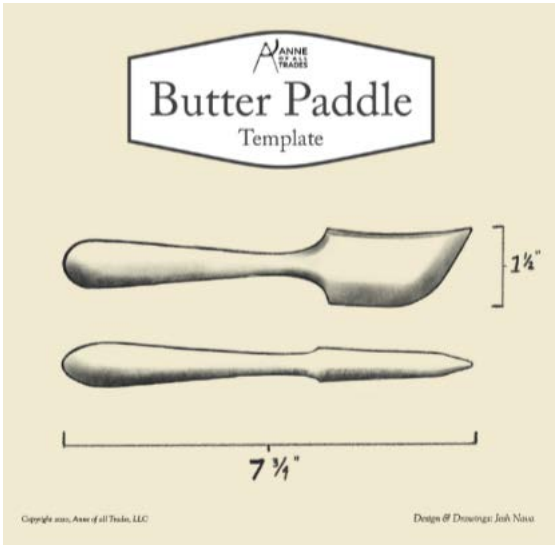

Figure 18: The *Anne of All Trades* butter paddle template shows the relative lack of complexity.

Conclusion

The humble spoon provides many learning opportunities to a beginning woodworker, teaching different cutting techniques as one navigates the grain of the

wood. The techniques rely on tools that would have been refined since the 1st century. The accessibility of appropriate wood in the European countries would have allowed for whittling to occur during the spring and summer months. Armed with the right tools and knowledge, an experienced woodworker could create an eating spoon in a matter of hours.

The basic spoon pattern template easily scales up or down depending on the intended use, allowing smaller ones for ear cleaning and cosmetics measuring, to larger ones for stirring food-laden pots and serving meals. This is a simple pattern to replicate once the nuances have been visited and accommodated through practice, and thus ensures the regular household item of the spoon maintains its place in the home.

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Known World Spotlight

Casting Sugar Figures

BY THL JOHNNAE LLYN LEWIS, CE

Today we are accustomed to seeing professional sugar artists create stunning sugar items for various public events and televised challenges. Cakes are decorated with pulled sugar flower blossoms, Halloween pumpkins are blown from isomalt, a type of sugar substitute dating from the 1960s; decorated Christmas trees with fabulous ornaments appear from what were once just blobs of molten sugar. How many of us have wondered: "Could I do that? Maybe I could do that? What does it take to do that? I want to do that!" The most intricate blown and pulled sugar works cannot be easily or cheaply accomplished at home, but one can heat up or boil a sugar mixture and cast or pour sugar items in molds. For those seeking to create such items, here are a few notes based on personal experience.

Sugar molding or pouring or casting sugar was widely practiced at various courts during the Renaissance, but the practice is documentable from centuries earlier. There is a recipe from the 13th C Andalusian manuscript known as *An Anonymous Andalusian Cookbook*. Some years ago, food historian Charles Perry translated it, with the encouragement of Society member and medieval culinary researcher David Friedman | Duke *Cariadoc of the Bow*, KSCA, OL, OP. In the Andalusian recipe, we find the following instructions:

Cast Figures of Sugar. Throw on the sugar a like amount of water or rosewater and cook until its consistency is good. Empty it into the mould and make of it whatever shape is in the mold, the places of the "eyebrow" and the "eye" and what resembles the dish you want, because it comes out of the mould in the best way. Then decorate it with gilding and whatever you want of it. If you want to make a tree or a figure of a castle, cut it piece by piece. Then decorate it section by section and stick it together with mastic until you complete the figure you want, if God wills. *An Anonymous Andalusian Cookbook*.

Moving ahead in time and to England, there are notable sugar working recipes in the British Library's Harleian MS 2378. The recipes are dated circa 1395 CE and use the olden characters of the thorn and the yogh. The thorn roughly represents "th"; the yogh originally indicated a "g" and over time came to be a "y." They are represented here as: **þ** and **3**. The transcribed section begins with a recipe for clarifying sugar before proceeding for a long recipe for creating "Anneys in counfyte."

The next recipe, in abbreviated format and as transcribed by Hieatt and Butler instructs how the boiled sugar solution is to be made.

#13 To make suger plate.
Take a lb. of fayr clarefyde suger and put it in a panne and sette it on a furneys, & gar it sethe. And asay **þ**i suger between **þ**i fingers and **þ**i thombe, and if it parte fro **þ**i finger and **þ**i thombe **þ**an it is inow sothen, if it be potte suger. And if it be finer suger, it will haue a litell lower decoccioun. [H&B, p 152]

The resulting hot syrup is poured or cast onto a marble slab to cool and set up. After a recipe for the ever popular "penydes," we come to "#15: Ymages in suger" which continues with the advice that this sugar mixture while hot can be poured into molds.

#15 To make ymages in suger.
And if **3**e will make any ymages or any o**þ**er **þ**ing in suger **þ**at is casten in moldys, sethe **þ**em in **þ**e same man ere **þ**at **þ**e plate is, and poure it into **þ**e moldes in **þ**e same manere **þ**at **þ**e plate is pouryde, but loketh ***3***oure mold be anoyntyd before wyth a litell oyle of almaundes. [H&B, p 153]

The recipe continues with advice on coloring the sugar item, suggesting gold, silver, red, green, yellow and so on, and how they can be created. It ends with this advice:

And in **þ**is maner mow **3**e caste alle manere froytes also, and colour it wyth **þ**e same colour as diuerse as **3**e will, and **þ**er **þ**at **þ**e blossom of**þ**at per of apel schull stand put **þ**erto a clowe & **þ**er **þ**e stalke schall stand makes **þ**at of kanell. [H&B 153]

One can experiment and work out a recipe based upon the original 13th or 14th C recipes cited above or even try one's hand at Sir Hugh Plat's recipe from 1600/1602 in his work ***Delightes For Ladies***. Such attempts can present a number of challenges, as was discovered by the gentlemen who recreate historical cookery at Hampton Court Palace in England. They are known collectively and colloquially as *The Tudor Cooks*, and they spent a good part of the recent 2016/2017 Christmas holidays attempting to cast a figure of Queen Elizabeth I in molten sugar. The exercise with various failures experienced along the way were well-documented in the blog and Twitter account ***The Tudor Cook***, (the latter a personal project of Richard Fitch, interpretation co-ordinator for the Historic Kitchens at Hampton Court Palace.) In short, the culinary team ran into problems with humidity, dampness, the sugar not coming up to casting temperature, the sugar figure sticking to the mold and not releasing, etc. etc. If one works with boiling and poured sugar enough, one gains an understanding of the medium, but when first starting out, of course there's no such depth of experience. Given enough time and effort, and by keeping a log of successes, amounts, humidity, and failures, most could over time -- as *The Tudor Cooks* eventually did -- manage to pour and create a cast item of sugar using the 14th C recipes and Plat's mentioned above.

However, if you want to cast a sugar figure for a given event at a given time in uncertain weather, you need a reliable recipe with proper amounts which works in modern kitchens, using affordable ingredients which are easily procured. To save both time and money, a good modern recipe is the one given by Bo Friberg in his classic volume ***The Advanced Professional Pastry Chef***. The recipe calls for:

1 cup or 8 ounces water; 2 pounds 8 ounces granulated sugar; I cup or 8 ounces Karo or glucose syrup.

In simple terms, proceed as follows: Place in a heavy weight pan of more than sufficient size as the mixture will boil up. The ingredients are heated slowly to 305 degrees F (152 C). [Any coloring agent will be added at 265 degrees when heating or when cooling. I only use food safe colors.] Plunge bottom of pan into cold water to stop cooking. As soon as bubbles quit coming to the surface the syrup is ready to pour into molds. Flavorings can be added at this stage. Figures should cool in the mold but not harden completely as the pieces should give a little. This may take 24 hours or even longer. Keep in mind you may not be able to safely move the mold while it is cooling. Pour and leave in place.

Perhaps it goes without saying but I will say it …. You also need to use a professional calibrated candy thermometer, and never test a hot syrup between your thumb and finger, as did the sugar masters of centuries past. Before attempting to pour hot sugar or work with a recipe such as this you need to plan ahead. It is a dangerous activity; burns from a boiling sugar syrup are no joke! Be cautious and hyper- careful! Keeping a bowl of ice water at hand to treat burns is something experienced sugar artists do.

Does a recipe need to be doubled? I often do multiple batches in order to ensure success. A large mold may require a double batch to start with; have extra ingredients on hand. Read any and all instructions which come with the mold. You may or may not need to very lightly oil or spray oil the molds. That part depends on the mold. There are also professional mold release sprays (not all are food safe) which may be necessary for an easy mold release. Stabilize the mold in some way so the mold doesn't shift and leak hot syrup.

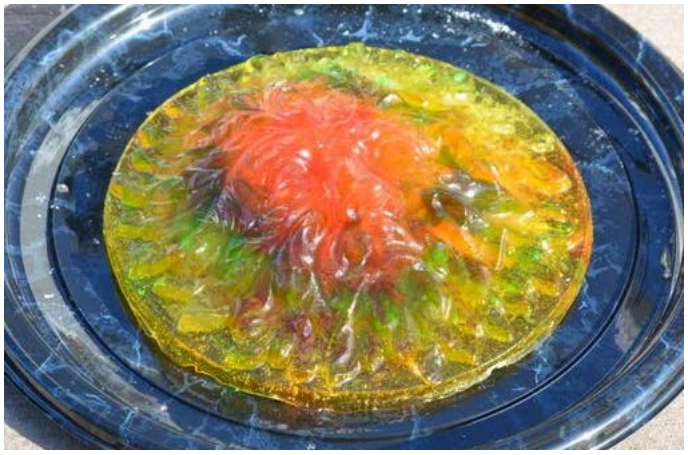
We used to watch our grandmothers or grandfathers handle hot candy mixtures; these days you can watch instructional videos on the Internet, and I'd advise some study there. By the way altitude and humidity can alter the results. This is a skill, above all, which

needs to be practiced, and yes, it works better in dry conditions. Keep a notebook or log of the results and recipes.

Note the use of the Glucose or corn syrup. This is now known as an interference agent or as a candy doctor. It helps ensure the final product or creation is clear and resembles glass and does not end up grainy or simply revert back to sugar. Some historical and modern recipes call for rose water, vinegar or lemon juice as their agent, but I tend to use glucose syrup or corn syrup. Why? It helps to ensure success, and when I am pouring or casting sugar, I am after success the first time. (I asked about the *Tudor Cooks*' Sugar Queen while visiting in 2019 and was told they had used lemon juice as their interference agent.)

Molds

In our period of interest as now, bakeries, households, and individuals bought their molds from professionals. English food historian and author Peter Brears notes molds might have been made of stone, wood, pewter, even alabaster or plaster of Paris. [p67] Cooks, such as England's John Murrell in the early 17th C, even advertised their molds and cutters for sale in their confectionary books. Food historian Ivan Day writes extensively about molds in his article on "Sugar sculpture" in **The Oxford Companion** to Sugar and Sweets. Speaking about subtleties, he writes: "Carved wooden molds were frequently used in their construction. A probate inventory of 1551 of the goods belonging to a deceased York cook called William Thornton lists an impressive array of these prints (or molds): "a print called Sampson; a print with Fleurdelice; small leache print; print with Lion and Unicorn; standing print with hart and hind; print with one knot; close print with birds...." (p. 691)



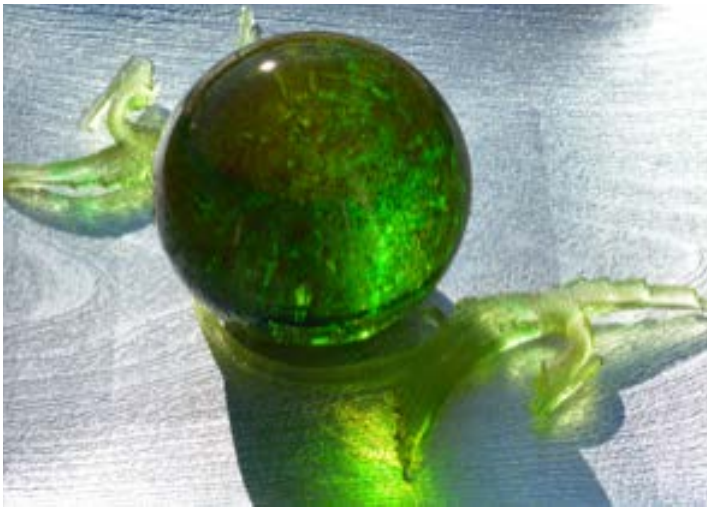
In Renaissance Italy professional artists' workshops supplied items cast in bronze, but also cast items of sugar for festivals, weddings, state funerals and other notable occasions. The spectacular cast sugar items created for Marie de Medici's 1600 CE wedding to Henri IV are described in the 2015 volume **Dolci Trionfi e Finissime Piegature.** The sugar sculptures were re-imagined and recreated for a Palatine Gallery display in Florence in 2015 and this is the outstanding exhibit catalog of that exhibit.

My advice is to follow historical practice and buy your molds, especially if you are just starting out. Buy something suitable -- professional weight preferred -- which can handle a very hot mixture and not deform. If the molded item is intended to be eaten, buy food-safe molds and use food-safe ingredients. If the item is for display only, an *appropriate heavyweight* but non-food safe mold can be used. Not every plastic item holds its shape when a 300 degrees F syrup is poured into it. Do not gamble with the possibility of resulting mess or burns, should a mold deform.

For the Green Man, I actually used a mold from Go-Molds.com intended for a concrete garden stone. My sugar creation was a display item and never intended to be eaten. The Green Man was created originally in November 2015 for a contest where the theme was "Green." I took it back home, stored it in a humidity-controlled environment over the winter, and sent it off in June 2016 to be displayed at the Arts and Sciences Expo at the SCA's 50 Year event. This proves, I guess, that these objects can last! (The Italians in the 16th C often recycled their large size sugar items. The workshops in effect rented them out as needed.) Over the passage of months, the Greenman had darkened into a darker more uniform green and the edges were not as sharp. It was highlighted on Facebook's 50 Year page where someone asked if it wasn't a green lime Jell-o mold, before it was corrected as being made of cast sugar.

In November 2020, I repoured the Greenman mold to create an Autumn version of the Greenman. This time with help from my son, we colored various small amounts of syrups and poured them to create a face with far more colors and depth. What became apparent is that we needed more practice with the colors. Once added, we couldn't tell how they were shading because the mold itself is black. It was like pouring into a dark

pond. It was an interesting experiment, and we learned that pouring and coloring hot syrups was nothing like all those in fashion lacquer color pours which are ever so popular on YouTube.



Cast sugar sphere with two dragons created for a Crown feast in 2015. (Professional sugar molds.)

Another Sugar Project

I tried off and on for a number of years to create a poured sugar sphere using small bowls or cake molds, all with no success. I finally broke down and bought a professional two-part spherical mold along with a pair of dragons. I've cast several pure sugar spheres since that time. I even experimented with Isomalt to the tune of it taking $20 USD worth just to cast the sphere and two dragons. (This is about four times the cost of using just sugar.) It takes more than 24 hours for the mold to cure and harden. It's worth every cent, and I do not regret the investment.

Smaller Sugar Figures

The items which today we call lollipops or suckers also have a medieval antecedent. In the Ottoman Turkish Empire "hollow moulded figures made of boiled sugar on sticks were popular" sweets, according to Mary Isin [pp57-60]. The Ottoman sweets even appear in an illustration, commonly called "The Seller of Sweets" from the early 17th C. [Yerasimos, p. 229] These sweets can be created today using two-part molds. I did such a batch of flavored and vividly colored sweets in 2006 for an Ottoman-themed Crown banquet. I used John Wright cast iron molds, but one could use any appropriate modern sucker or lollipop mold.

Ottoman treats from 2006. They were wrapped in cellophane for food safety reasons. The printed color photo is of the 17th century manuscript showing a seller of sweets.

Flat Cast Figures

Sugar items can be created in flat forms. Confectioner Jacques Torres' instructions on how one may create molds using rolled-out Play Doh modeling clay appear in his books and on the Food Network website. These instructions accompanied a recipe for chocolate lolli-pops, but the directions work equally well when casting sugar items:

Using those instructions and a cardboard template of a dragon, I've thrice created the Midrealm's dragon in sugar. It started by pouring the dragon and its wings, using Play Doh as the mold. I then took the dragon and its wings and layered it to make a large flat sugar subtletie. I have the right square pan, oddly enough an old ceramic microwave browning pan. These days I use non-stick foil to line the pan. I poured a layer of hot amber-colored syrup, let it cool, laid the already cast body of the sugar dragon and its wings on the now-firm base layer, and then encased the dragon in anoth-

er layer of syrup. Sometimes this works without incident, but of course the second or top layer can be too hot and melt the dragon or image, meaning that one could be up re-pouring the entire subtletie at midnight. Yes, this actually happened to me, and it is only funny in retrospect. Re-casting and pouring hot sugar at 1 AM is not too be encouraged. But yes, it worked on the second try. I strongly suggest that if you are transporting the completed item, let it travel in the pan. Once you've reached your destination safely, the item can be taken out at the event and placed on a suitable tray. The second time I cast and donated the sugar dragon as Crown feast subtletie, it was dubbed the "Kingdom Jolly Rancher" before it was broken up and served to the populace at the banquet.

Crown feast sugar subtletie of three dragons with sphere. 2015.

In conclusion, I would emphasize care and caution but would also like to say that pouring or casting sugar items in molds is great fun! Happy sugar experimenting!

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Recipes

The mentioned recipes in full, citations, and additional documentation may also appear in full at my blog:

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Contributed by THL Johnnae llyn Lewis, CE ©2017, Revised and expanded January 2021. J.K. Holloway

Linework from Book of Kells 250v

BY BJORN SAEMUNDARSON

Below is an illumination blank (or colouring-in page!) that I've made based on The Book of Kells (c. 800 CE), folio 250v. Feel free to print it for use in your illumination (or colouring) projects.

A link to the file is available on this article's page of the Cockatrice website.