ANGLO-SAXON GLASS BEADMAKERS

A NEW LOOK AT THE TOOLS, MATERIALS AND TECHNIQUES

SUE HEASER

Painting of the necklace from Snape Grave 10. This is a reconstruction of the necklace showing the beads as they would have looked before deterioration.

ACKNOWLEDGEMENTS

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INTRODUCTION

Anglo-Saxon cemeteries provide us with large quantities of beautiful colourful beads. There have been many studies in the past attempting to create a reliable typology and dating framework for these finds. More recently there have been studies on the chemical properties of the beads (Peake 2013) to trace the origins of the glass used.

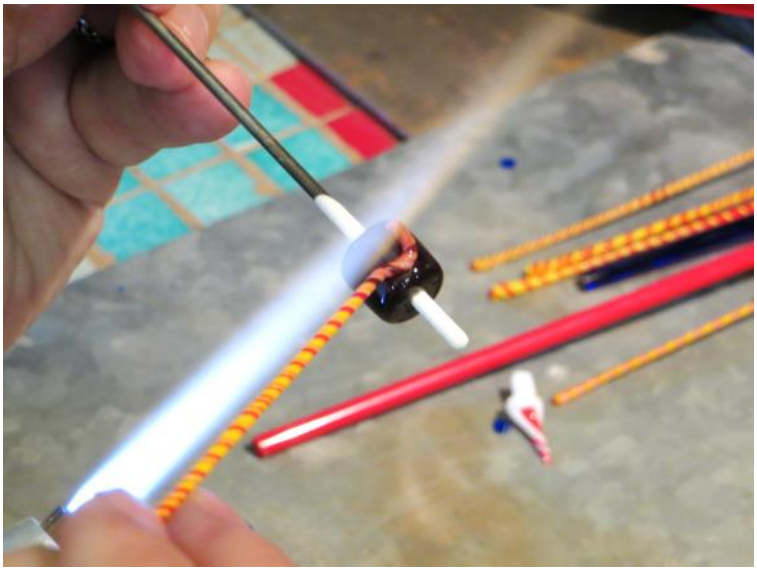
For several years I have been studying the bead collections held in museums and archaeological institutions in England and have used my skills in hot glass beadmaking to investigate how the beads would have been made. My findings suggest that to date very few attempts have been made to assess Anglo-Saxon beads using the skills of the beadmaker and this paper attempts to begin to redress that situation. My findings show that the existing literature has many erroneous assumptions as to how the beads were made. This means that the terminology used to classify beads is often wrong.

WORKSHOP OR ITINERANT BEADMAKER?

The current perception in many studies (e.g. Peake 2013; Brugmann 2004) is that workshops were responsible for making beads in Anglo-Saxon Britain. Several types of bead are only found in Britain and not on the European mainland which suggests that they were made by indigenous makers, particularly in East Anglia where many of these beads are found. Examples are Brugmann's so-called "Traffic Light" beads, annular twist beads and various "Norfolk" beads . I would like to challenge the idea of beads only being made in an established bead workshop. I can make 30 to 50 beads in a day, similar to Anglo-Saxon styles and using a few simple tools. I suggest that the beads could have been made by a travelling artisan who would have carried his tools and materials with him. The amount of glass needed for a necklace is small – about 50 gms for a 45cms necklace, depending on the bead size. Thomas Risom (2013), working on the Viking beads from Ribe, Denmark, has shown that a small clay furnace for beadmaking can be made in a day. This could have been used to make beads for a small community, then abandoned when the beadmaker moved on. Hardly any trace of the furnace would remain after weathering.

MODERN LAMPWORKING

Hot glass or "lampwork" beadmaking is practised today by artisans around the world using techniques that go back to ancient times. The term "lampwork" refers to the small heat source (originally an oil lamp) that is used to melt the glass to make beads one at a time on a mandrel. Modern beadmakers use gas blowtorches but otherwise the basic techniques have changed little since Anglo-Saxon times. These are the skills I have used to achieve an understanding of the techniques of the Anglo-Saxon beadmakers.



A replica Anglo-Saxon bead being made with a modern mandrel and blowtorch by Mike Poole of Tillerman Beads.

1. TOOLS OF THE BEADMAKERS

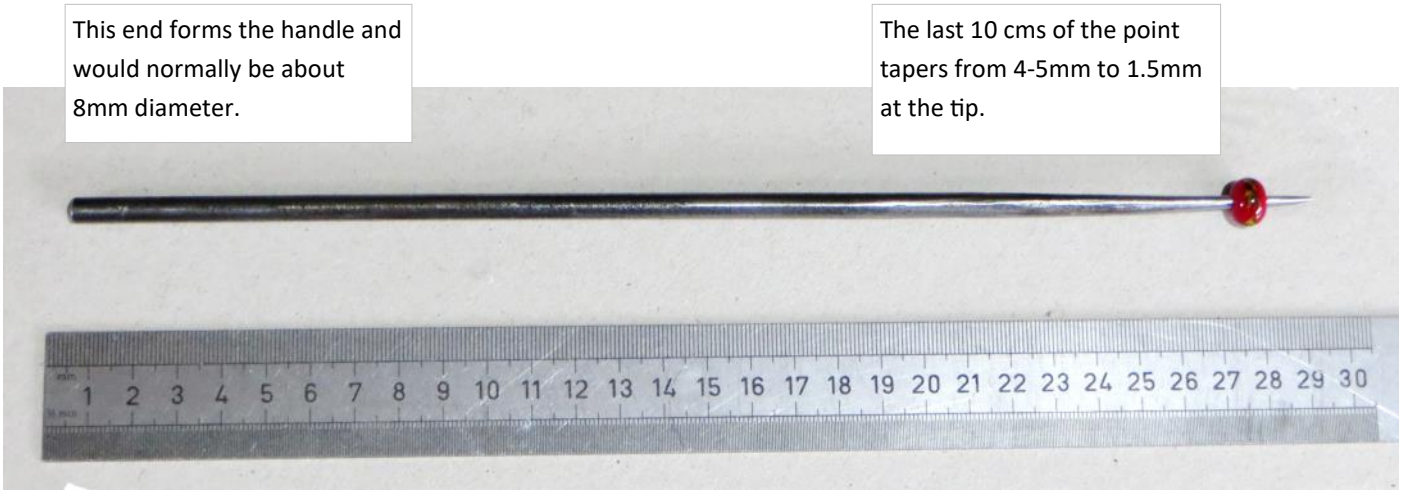
The following tools are all that are needed to create Anglo-Saxon beads. Not all are essential and simple beads can be made with just a few mandrels, a knife for shaping, and a furnace.

1. THE BEADMAKERS MANDREL

The mandrel is the main tool of the glass beadmaker and is used for all wound beads which make up the majority of Anglo-Saxon beads. It is a simple iron spike, about 30cms long tapering from about 8mm to 1.5mm at the tip. It would have to be made of metal and most likely of iron because any other materials would not withstand the temperatures required to melt glass.

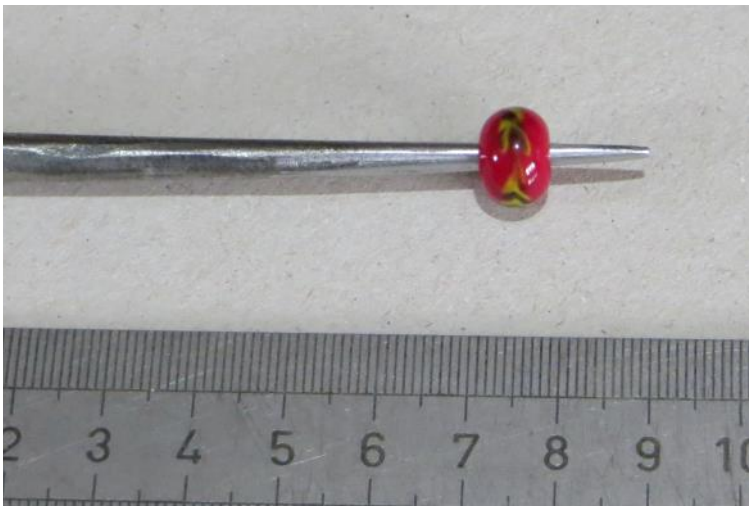
I have not found any reference in reports identifying mandrels in excavations in Britain but this is possibly because excavators are unaware of these objects. Also, a mandrel is such a simple thin piece of iron, they have either corroded completely or if traces are found, they are not recognised for what they were. The illustrations below show the suggested shape for a typical mandrel. A beadmaker may have had several so that beads could be made one after the other without the need to remove the bead from the mandrel each time. The tip is the important part and beads would normally have only been made in the last 10 cms of the point with the rest of the mandrel used as a handle to keep the hands away from the flame. The shape shown mirrors the internal measurement of the holes of typical beads from Anglo-Saxon cemeteries although some have larger holes of about 5 to 10mm or more such as the common annular blue beads and larger beads such as annular twists.

Reconstructed iron mandrel



Mandrels may have been set into wooden handles in the same way as awls and therefore could show a square section at the handle end. Another possible shape is with a hollow end like a ferrule to attach a wooden handle. However, my experiments show that a thicker handle is more difficult to control when winding a bead so it seems likely that they did not have wooden handles. The heat of the flame does not travel very far down the mandrel so a wooden handle is not necessary for avoiding heat.

Possible mandrels: Tattershall Thorpe hoard; Hyderabad Barracks, Colchester; Swallowcliffe Down bed burial; Thetford.



Detail of the tip of the mandrel. The mandrel was made using traditional blacksmithing.

2. PONTIL

This is a simple iron rod used by glass-workers to plunge into a crucible of molten glass to remove a "gather" of glass for working. Pontils are also used as handles where they are attached to glass being worked in the flame. Beadmakers would also use pontils for melting tesserae. A pontil for beadmaking would be similar in size and shape to a mandrel but would need less of a point. Mandrels may well have doubled for this task.

3. TWEEZERS

These are used to make long thin "stringers" of coloured glass for decorating beads with coloured trails (see page 11). Quite delicate tweezers are required, ideally 16cms long or less and with fine tapered points. They could be bronze or iron. The flat-ended tweezers found in Anglo-Saxon graves could be used too but pointed ends are more useful to a glass beadmaker.

Examples: Flixborough—alloy tweezers

4. MASHERS OR TONGS

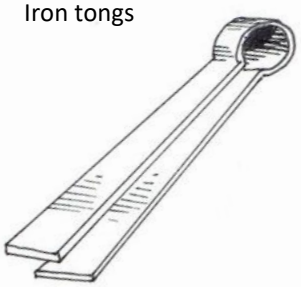
Spiral bead (top) and bead with twisted trail from Eriswell. (Courtesy of Suffolk Archaeology CIC)

Mashers are used by modern glass beadmakers for shaping beads and especially for disc beads, square beads and rectangular beads. They are a pair of small tongs with wide flattened ends. A simple flat surface could be used instead with a flat blade to press the bead down (see *Marver* overleaf).

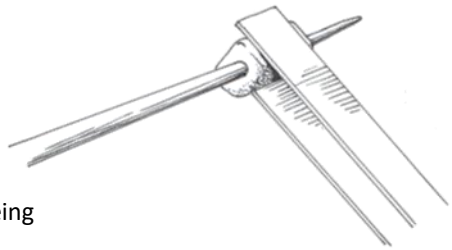
Spiral disc beads and rectangular "Traffic Light" beads (see right) would be easier to shape using some form of mashers rather than simply pressing them down on a flat surface. Iron tongs are found in Anglo-Saxon sites and a small pair of these would have been suitable. Also likely are wooden tongs of the type shown below. They would need to be soaked in water before use to prevent them burning.

There is no need for strength in these tools—they are simply for shaping small pieces of hot glass. The best size for bead-shaping is about 18-20cms long.

Iron tongs

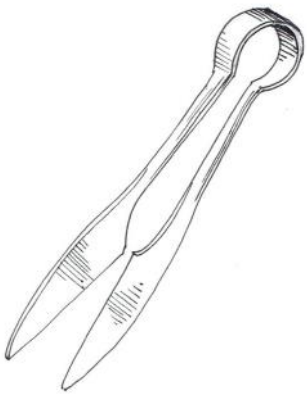


Wooden tongs



A rectangular bead being shaped with mashers

5. SHEARS



These would be used to cut hot glass when making rods or wrapping beads. They would have been relatively small and light like those found as weaving tools—about 15 cms long is ideal.

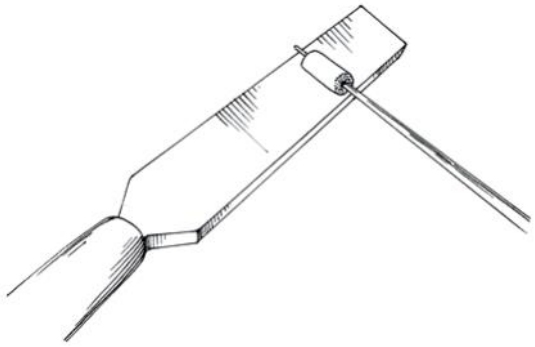
Examples: Flixborough; Tattershall Thorpe; Harford Farm; Thetford.

6. MARVER

A marver is a flat surface used to shape beads. It could be a knife, a chisel or any flat piece of iron. Wood could be used if it was wetted first.

The term “marvered” is frequently used wrongly in archaeological reports to describe polychrome beads that have applied decoration flush with the surface. Applied decoration on polychrome beads can be smoothed into the surface by simply heating the bead in the flame. The added trails and dots will sink into the surface completely without the use of any smoothing tool. Any bead that is spherical in shape has not been marvered, it is the natural shape resulting from heating a blob of glass while the mandrel is constantly rotated to prevent the glass slumping.

A marver is used mainly to shape beads that are not spherical. Glass will always return to a rounded shape when heated so a marver is used to form any shape with a flat surface such as a cylinder, bicone, square or rectangle.



A chisel being used as a marver. A cylinder bead is shown being rolled on the flat surface to shape it.

A modern marver with the paddle end made from graphite. Metal or wood can also be used.

7. FURNACE

A heat source was required to melt the glass. To date no bead furnaces have been identified in excavations in the United Kingdom. The remains of beadmaking furnaces have been found at Viking sites in Scandinavia. Thomas Risom, working at Ribe, has shown that a small furnace of about 22cms diameter and 45cms high can produce high enough temperatures to make beads. The drawing shows a furnace that Risom has used in his experiments (Risom, 2013). Soft glass melts at a temperature of around 900°C and a simple furnace of this kind with an opening at the top is capable of this temperature when used with wood as fuel. The furnace causes a natural draft and bellows or blow-pipe are not required.

Sketch of a “Volcano-furnace” after Thomas Risom, 2013

Risom has also experimented with similar furnaces using bellows and charcoal and discovered that this causes vitrification of the inside of the furnace. All the furnaces found at Ribe that had been used for beadmaking had no vitrification so Risom suggests that this simple furnace without an added air source was what the beadmakers used.

A small furnace like the one shown would appear the same as any small hearth in an excavation because the top would soon weather away leaving only the fire surface. Flat disc-shaped stones with a central hole have also been found at Ribe and Risom suggests that these could have been used on the top of the furnace to direct the heat more intensely. Another possibility is that they were used to plug the bottom fire hole after lighting so as to increase the draft.

2. MATERIALS

GLASS

The main requirement was glass and analysis of glass from Anglo-Saxon cemetery beads has shown that beads were made using several kinds (Peake 2013) including Roman glass and glass imported from the Middle East. There is no evidence that glass was made in Britain – but a lot of glass was imported into Europe during the Roman period from the Near East and it is suggested that this continued to some extent during Anglo-Saxon times.

Making coloured glass from raw glass would be beyond the capabilities of an itinerant beadmaker. The furnace described above would not supply sufficient heat. Beadmaking skills require manual dexterity but not high temperature furnace skills and in the same way as beadmakers working today, it is likely that the Anglo-Saxon beadmakers acquired their glass ready-coloured.

Types of Glass

The Anglo-Saxons made beautiful vessels as well as beads. But while the glass used for vessels is usually transparent and in subtle shades, the glass used for beads is mainly opaque and in brilliant colours. This shows that beadmakers sought a different colour range of glass for their work.

1. Tesserae

Tesserae from West Clacton—in many of the most common bead colours. By permission of Colchester Archaeological Trust.

Excavations at Ribe, Ahus and other Scandinavian sites as well as Dorestad in the Netherlands have produced large quantities of tesserae in a rainbow of different colours that have been shown to have been used for bead making (Risom 2013, Callmer & Henderson 1991). Very few glass tesserae have been found in Britain even from Roman excavations and Romano-British mosaics are normally made from stone tesserae. But glass tesserae would have been a very convenient way to trade and transport coloured glass in small quantities for beadmaking. West Clacton Reservoir has produced about 200 opaque coloured glass tesserae from an isolated ditch (Paynter & Kearns 2011) and it is likely that this could have been a travelling Anglo-Saxon beadmaker's materials and not of Roman date. David Neal (*pers. comm*) considers that these glass tesserae are unlikely to be a Roman mosaicist's stock due to the rarity of glass used in Romano-British mosaics.

Roman and Byzantine glass tesserae were made in all the colours that appear in Anglo-Saxon beads. James Peake notes that there have been few finds of glass tesserae in Britain so that beadmaking using them was unlikely (Peake 2013). But there have been virtually no finds of other types of glass cullet or raw materials in Anglo-Saxon sites either and none in bead colours. The colour match between Roman and Byzantine tesserae and Anglo-Saxon beads seems too close to ignore. There appear to be no other objects made with these colours of glass. Enamelling has some similarities but the quantities required for enamelling are very small compared to beadmaking.

Tesserae can be used with ease to create beads. No crucible is needed for melting glass inside a furnace and the beadmaker has only to pre-heat a tessera slightly before holding it in the flame to melt it and then wind it round a mandrel to make a bead. Stringers and twisties are also easily made from tesserae for decorating beads with trails and dots.

2. Waste glass or cullet

Roman scrap glass has turned up occasionally in Anglo-Saxon excavations (West Stow;) and was another source of material for the beadmaker. Sometimes a piece of broken Roman glass from a vessel has been found in a woman's grave, often contained in a bag or box to suggest it was treasured. Perhaps the woman had been waiting for the next visit of the glass beadmaker? However, most Roman cullet is transparent glass and transparent beads are in the minority. The later doughnut beads have been shown to have been made with Roman glass.

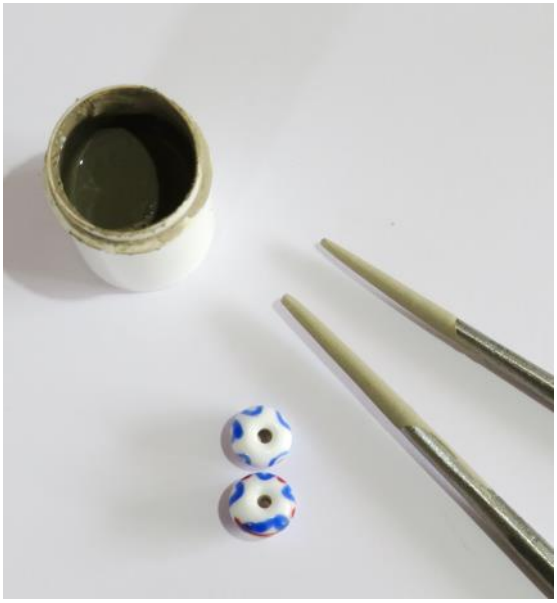
3. Glass cakes

The West Clacton finds contained the remains of two glass cakes. These are large discs of glass, about 25mm thick and about 16cms diameter, which were the products of glass making workshops and probably from the Mediterranean or Near East (Paynter et al. 2011). They are usually cut into sticks of glass and then tesserae but would be equally useful for cutting small pieces for melting to make beads.

Parts of a glass cake from West Clacton
by permission of Colchester Archaeological Trust

BEAD RESIST

Hot glass will stick firmly to metal so modern beadmakers dip their mandrels in a clay slip to aid removal after the bead is made. Clay has been found inside bead holes at Ribe and it is reasonable to assume that the Anglo-Saxon beadmaker used a similar resist. The beads below show possible resist in the hole. This could be soil accumulation although these examples are well adhered and look like resist. The photograph (right) shows replica mandrels that have been dipped into modern bead resist and allowed to dry. After the beads are made the mandrels are soaked in water to soften the clay and the beads twisted from the mandrel. The resist is then cleaned from the bead holes with a small file, or by pulling wet string through the hole. Residue often remains.



Bead from Langton Quarry—showing possible remnants of bead resist. Photo credit: Archaeological Research Services; Langton Quarry report. 2009

Two beads from Eriswell showing possible bead resist. Courtesy of Suffolk Archaeology CIC.

3. BEADMAKING TECHNIQUES

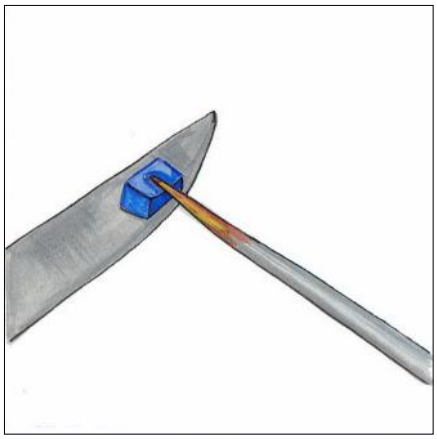
I have experimented making replicas of Anglo-Saxon beads using the above tools and materials but replacing a furnace with a modern blow-torch for convenience. My beads look remarkably like the ancient beads and I have been able to work out how many are made.

The following is a brief overview of the most common techniques.

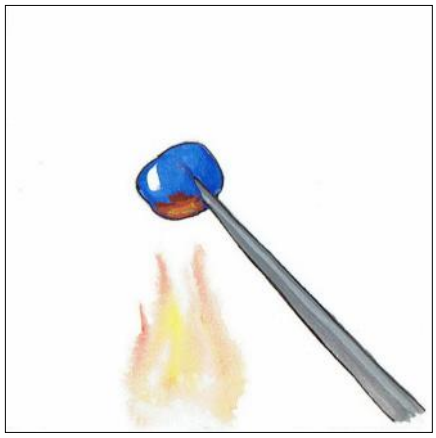
MAKING A BASIC ROUND BEAD

Various studies on Anglo-Saxon beads have suggested that scrap glass or broken cullet is melted in a crucible placed inside the furnace and a glob of glass (or a "gather") is scooped up on the end of an iron rod (a pontil) and wound round the mandrel. This is only one possible way and there are two others:

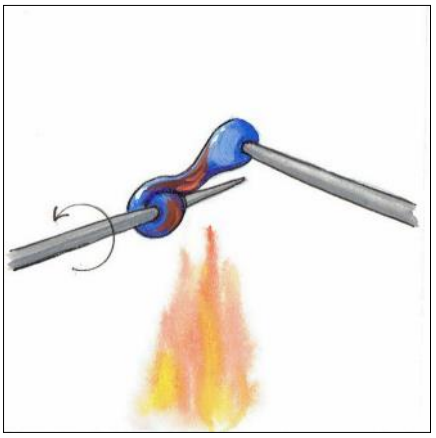
1. Using a Tessera:



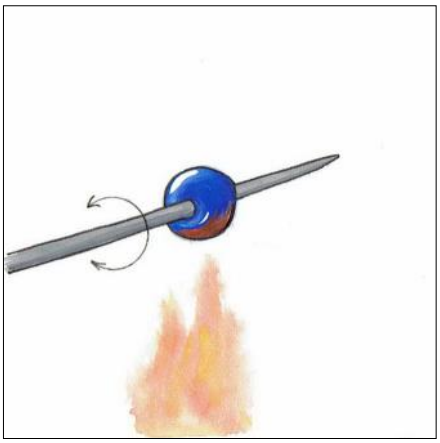
Step 1
The glass tesserae are warmed by placing them close to the furnace heat. This is so that they will not crack when held in the flame. Next, a pontil (or spare mandrel) is heated until red hot and pressed onto a tessera which will stick to the hot metal.



Step 2
The tessera is heated fully in the flame until it starts to melt and glows pale orange. It is then rotated to heat all the glass evenly. Meanwhile a mandrel is heated until the end is red hot.



Step 3
The red hot glass is touched against the mandrel, about 3-4 cms from the tip. It will stick to the hot metal which is rotated while the molten glass winds onto it. This takes skill to keep the glass at the right temperature.



Step 4
When the bead is the right size, the pontil holding the molten glass is pulled away. The bead is rotated continually in the flame until it becomes perfectly round. This is the point at which decoration can be applied. Otherwise, the bead is cooled slowly by pulling it gradually out of the flame. It will then be removed from the mandrel immediately or allowed to cool on the mandrel before removing. In either case, it will need to be cooled very slowly to prevent cracking (see *Annealing* on page 11).

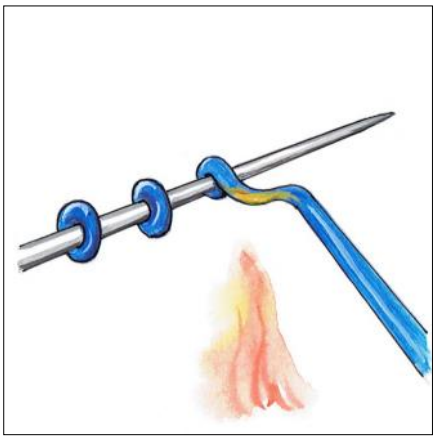
2. Using a glass rod:

This is the technique used today but there are many examples of glass rods found in Merovingian and Viking sites to suggest that that bead-makers in the first millennium CE knew the technique. Glass rods are usually about 5 – 10mm thick and 30cm long is a good working length. They can be made from a gather of molten glass taken from a crucible by dipping the end of a pontil into it. With the glass still molten, a small part is grasped with tongs and pulled into a rod which cools and solidifies as it is pulled. Using the melted end of a glass rod to create a bead on a mandrel gives more control than using a gather of molten glass scooped onto a pontil.

The glass rod is warmed in the flame, then heated to pale orange hot. The melted end is pressed onto a heated mandrel which is rotated as the hot molten glass is wound onto it. Only the end of the glass rod is heated to liquid point so that the rest of the rod remains cool and rigid. This is used as a handle by the beadmaker to control the hot glass at the other end as it is applied to the mandrel.

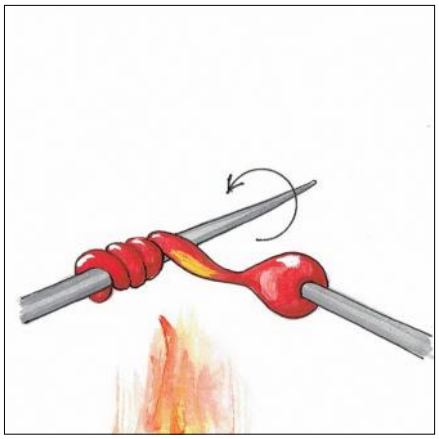
OTHER BEAD SHAPES

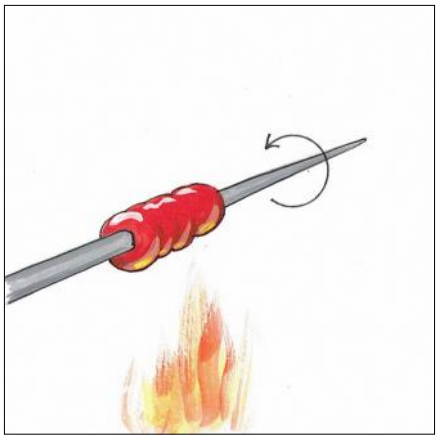
ANNULAR BEADS

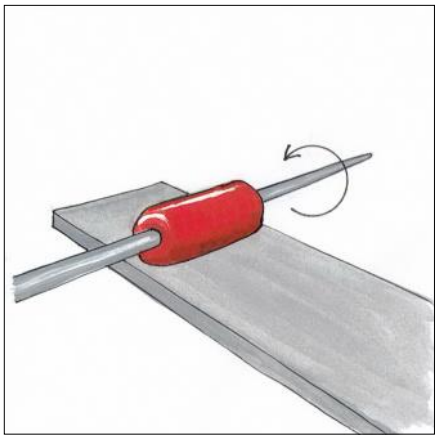


These are made in exactly the same way as round beads using a larger diameter mandrel. Several beads can be made on one mandrel. Starting about 15 cms from the mandrel point, a bead is wound, then heated to smooth and then cooled slightly. The next bead is wound about 2 cms from the first and so on. It is important not to let the earlier beads into the flame again or they will shatter. The gap between adjacent beads is therefore important.

CYLINDER BEADS







These are made by wrapping the glass over a longer length of the mandrel. The bead is heated to smooth out the wrap. Finally the bead can be rolled on a flat surface (marvered) to smooth the cylinder sides. The ends of the beads can be marvered as well to flatten them if required.

Many other shapes can be made with the simple tools: cubes, melons, rectangular, spiral, bicone, constricted and doughnuts. I will cover these in detail in my forthcoming book.

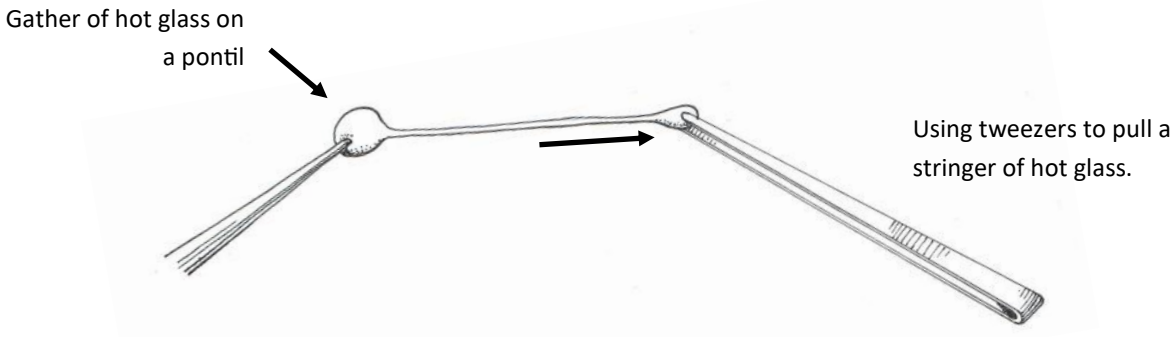
4. BEAD DECORATING TECHNIQUES

Monochrome Anglo-Saxon beads are relatively easy to make. I have managed to re-create most of the common types with only a few hours of practice. The decoration is more challenging but still not beyond the capabilities of a fairly novice beadmaker. However, I have the advantage of a gas blow-torch with predictable temperatures.

Most polychrome beads are decorated with lines (or trails) and spots and here is a brief overview of the main techniques. It has been suggested that monochrome beads could have been made elsewhere and then decorated at a later date but this is unlikely as there is no advantage gained. Reheating a bead to melting point often causes it to crack while decorating skills are not much more difficult than making beads.

STRINGERS

These are thin spaghetti-like lengths of glass that are a stock-in-trade for all glass beadmakers. I have not yet seen them mentioned in a report on Anglo-Saxon beads. They are relatively simple to make and a beadmaker will make a selection in different colours for decorating beads.



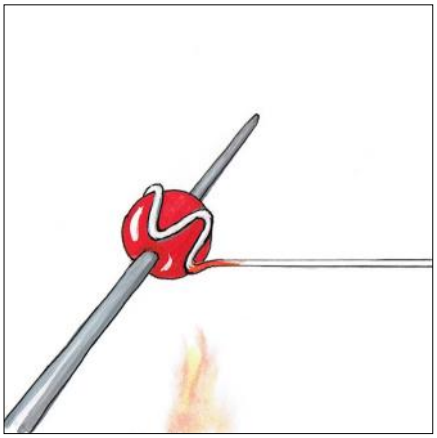
First a small piece of glass is melted on the end of a pontil. Tweezers are used to grab a small piece of molten glass and the whole is removed from the flame. Then the tweezers are pulled away from the glass melt to make a long thin strand about 1 or 2mm thick. The glass stiffens as it cools and the end of the pull results in a straight length.

Glass stringers made by the author and showing the imprint of tweezers at the ends. The stringers need to be about 1mm thick or less for fine lines. These are then applied to the hot glass bead and melted in. If they are made any thicker, the glass spreads and the delicate line becomes too thick. Stringers are very fragile and a beadmaker would have needed to make his own because they could not survive transporting or importing. They can be made from tesserae or small scraps of glass or even failed beads.

DECORATING BEADS WITH STRINGERS

LINES OR TRAILS

Once the basic bead has been made, it is kept hot just out of the flame and allowed to cool a little so it is not too soft. The mandrel is continually rotated to stop it sagging. A stringer of a contrasting colour is heated and then used to draw a line onto the bead. Waving trails such as the one shown are common designs or it could be a simple stripe, or crossing lines which involve going round the bead twice. As with the rod, only the tip of the stringer is heated so that the rest is used as a rigid handle.



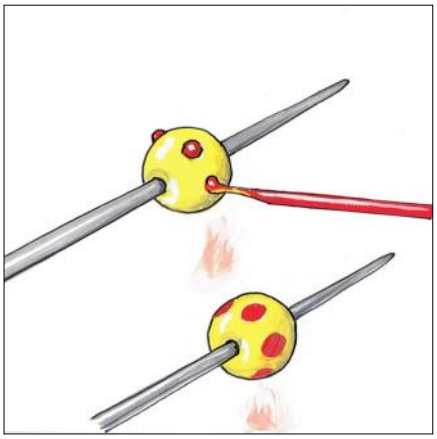
When the design is finished, the bead is rotated in the flame so that the added glass sinks in flush with the surface. Note that no marvering is necessary to achieve a smooth finish—just heat.

Sometimes the lines are not heated into the surface to give an embossed effect. This could also be accidental—the furnace possibly cooling down before the lines can be melted in. Thicker stringers will give thicker lines.

DOTS

This is another frequently used motif on Anglo-Saxon beads. Again a stringer is used, the tip heated and then pressed onto the bead. The whole is moved nearer the flame and the stringer pulled away so that the glass separates in the heat leaving a raised dot.

Once the dots are finished, they can be heated into the surface, or left proud. Larger dots are made with glass rods instead of stringers.



EXAMPLES OF BEADS DECORATED WITH STRINGERS

Bergh Apton green stripes

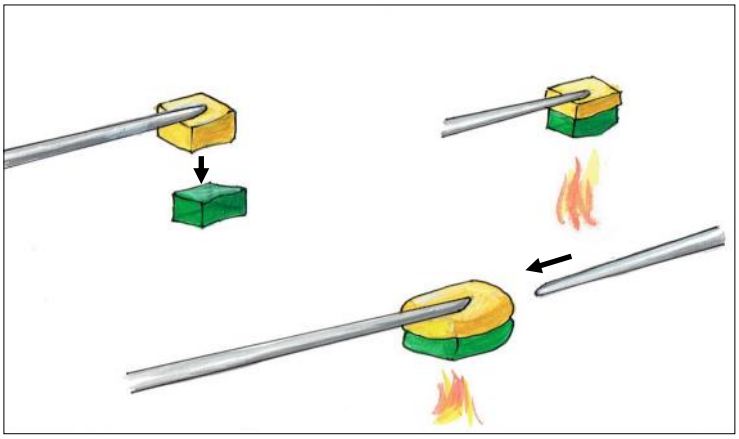
Morningthorpe dot and trail

Great Chesterford dots

TWISTED STRINGERS

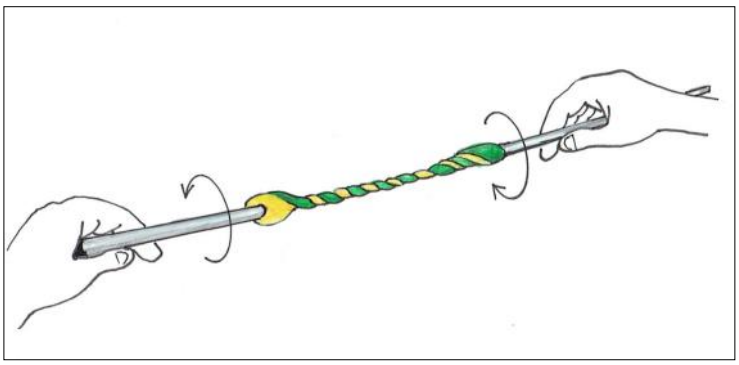
These are frequently used in Anglo-Saxon beads to provide twisted trails. The stringers have to be made first and then cooled into sticks of glass. The technique shown here uses two different coloured tesserae or pieces of glass. Glass rods could also be used. Opaque yellow and transparent dark green are the usual colours.

Step 1
The tesserae are pre-heated and then a red hot iron rod is pressed onto the yellow tesserae. This is heated in the flame until it become slightly molten when it is pressed onto the pre-heated green tessera.



Step 2
The two tesserae are heated further until they begin to melt and become one gather of glass in two separate colours. Then a second red-hot rod is pressed into the gather to make a second handle for twisting.

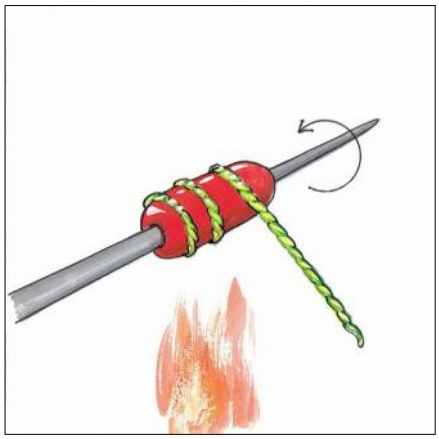
Step 3
The glass continues to be heated until it is evenly glowing all through. It is then removed from the heat and after cooling slightly, each rod is rapidly turned in an opposite direction while the rods are pulled gently apart. This makes a thin twisted stringer.



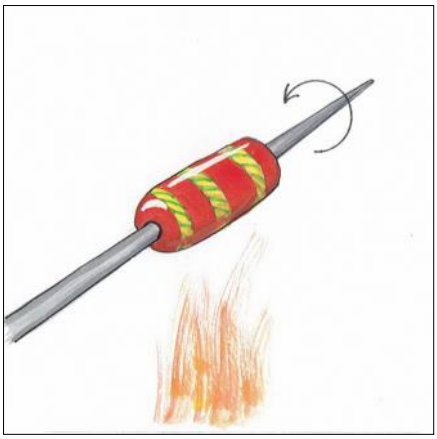
Twisted stringers should be about 2mm thick for the results seen on Anglo-Saxon beads.

MAKING BEADS WITH TWISTED TRAILS

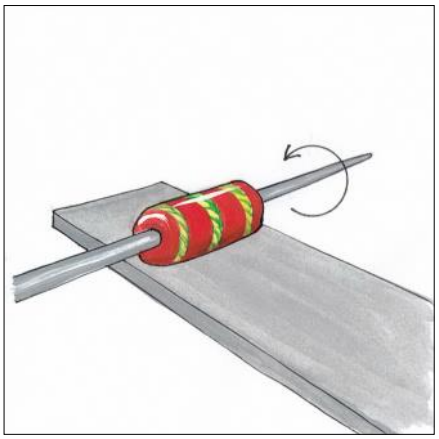
These distinctive beads are considered indigenous to Britain and are not found on the Continent. Brugmann calls them “Traffic Light” beads but this is not an ideal name and it covers too many different designs, both round and cylindrical in her typology (Brugmann 2004). The distinctive yellow/green twisted trail is found on black cubic beads as well. Perhaps “TWYG” bead could be a shorter basic term referring to the coloured twisted trail and standing for “Twisted yellow green”. This gives the opportunity to further categorise: Red cylinder TWYG; Black cuboid TWYG, Red rectangular TWYG etc. Other colours of twist are found but much less frequently.



Step 1
A red cylinder bead is made. The bead is kept in the flame and a twisted stringer is wrapped round the bead.



Step 2
The bead is rotated in the heat so that the twisted trail sinks flush with the bead surface.



Step 3
Finally the bead is rolled on a marver to correct the cylinder shape and make it sharper.

5. ANNEALING

Beads have to be cooled slowly to avoid cracking after they have been made and this process is called “Annealing”.

Coefficient of Expansion (COE)

Modern glass is given a coefficient of expansion rating such as COE 90 or COE 104. This is to ensure that glass-workers only use compatible glass in one piece. Ancient glassmakers were probably unaware of this but we can see traces of the problems they had as a result in some beads.

The Annealing Process

When the bead has lost its red hot glow, the mandrel, with the bead still on it, can be plunged into hot sand or ashes to cool down slowly. Alternatively the bead can be knocked from the mandrel immediately after it has lost its glow which is at a point when the iron has contracted more than the glass. Beads can then be placed inside a pot and buried in hot ashes to cool down slowly.

Modern beadmakers anneal their beads by placing them in a kiln and heating them to 500C and then allowing them to cool slowly over a few hours.

Problems with annealing

If beads are not annealed and cooled too fast, applied decoration can fracture and fall away. White beads from Bergh Apton and several other East Anglian sites exemplify this. They show a groove where the waving trail has fallen out, due to either poor annealing or incompatible glass types, or possibly both. The missing glass is probably blue as beads of this design are found without deterioration. These beads could be the work of a single beadmaker or even one batch of beads. This gives the possibility of studying the work of a single artisan and the distribution their work. Examples are : Bergh Apton Grave 56; Eriswell Grave 195; Hadleigh Road; Icklesham; Dover Buckland Grave 42; Morningthorpe Grave 288, Mucking Graves 845, 924B.

Beads from Bergh Apton showing a lost coloured trail between the red dots. Courtesy of Norwich Castle Museum.

Comparisons of the chemical composition of these beads from Bergh Apton and Eriswell from James Peake’s analysis (Peake 2013) show they are of the same type of glass: Saxon II (natron).

When beads are annealed at too high a temperature, they can melt slightly and if they are lying adjacent to each other, they can became joined. The example shown is a double bead from Eriswell Grave 353. Beads like this are sometimes assumed to have been made next to each other on the same mandrel but this would be very difficult to achieve if the beads are decorated with trails close to the join like the one shown.

Some beads that have been classified as “Hourglass” could have been a result of over-hot annealing rather than a deliberate attempt to make double or triple beads.

Bead from Eriswell Grave 353. Courtesy of Suffolk Archaeology CIC.

6. BEADMAKING WASTE

Beadmaking waste has been found in Scandinavia and several sites in mainland Europe but not so far in Britain. If Anglo-Saxon beadmakers were solo itinerant artisans, this may explain the lack because the amount of waste that results from beadmaking is small. The photograph (right) shows my own waste from making a few hundred beads. All of this can be recycled as well so it is hardly surprising that no traces of this work have been found. The collection shows failed beads, ends of glass stringers and rods, as well as droplets of glass that fractured from a rod being heated too quickly.

Glass materials for making TWYG beads: yellow and green twisted stringers and a red glass rod next to replica beads.

Glass rods that are now too short to use. They will be recycled by melting the ends and pressing two of the same colour together. Or they can be cut into short lengths and melted like tesserae.

Pulled rods made by the author to produce striped decoration on beads. These are within the capabilities of a relatively novice beadmaker.

Modern glass tesserae with replica stringers pulled from them next to replica beads made from the tesserae.

7. GLASS VESSEL-MAKING VERSUS BEADMAKING

The skills, tools and materials required for these two crafts are very different. Therefore the two types of artisan would be unlikely to share a workshop. The differences are summarised as follows:

- Making glass vessels requires handling larger quantities of glass and therefore larger and hotter furnaces with melting tanks or large crucibles.
- The glass colours used in vessels are mostly different to beads. Nearly all are transparent glass and in more subtle colours such as amber, light blues, olive green and pale green.
- Scrap vessel glass (cullet) is usually found in considerable quantities where vessels were made in Saxon and Roman periods to supply the requirements (Glastonbury, London). This was not used for beadmaking.
- The tools are different. Beadmaking requires small, light tools and mandrels. Vessel-making requires heavier tools and blow-pipes.
- Thomas Risom (2013) has shown that beadmaking furnaces can be small and used at a lower temperature to furnaces used for vessels. They were probably fired with wood and did not need bellows.
- Vessel-making requires assistance for the glass-blower. A beadmaker can operate singly-handed or with some un-skilled help stoking the small furnace.
- Beadmaking waste would have been very small and mostly recycled immediately. Materials could have been glass tesserae or small cakes of glass as well as coloured glass scrap.

8. CONCLUSIONS

My aim in this paper is to demonstrate the process of glass beadmaking as probably used in Anglo-Saxon and earlier times. I feel there has been a lack of understanding of the processes in the past by archaeologists and this is reflected in many reports where erroneous assumptions are sometimes made and then perpetuated in the literature. I hope that this paper will help to improve accuracy of bead terminology and description.

The evidence of glass beadmaking from Anglo-Saxon excavations is almost non-existent and this is most likely due to the ephemeral nature of the glass beadmaker's craft. Tools are simple and not unique and waste would be largely recycled. Also, as I have demonstrated, beadmaking was likely to have been the practice of individual itinerant artisans and not larger workshops.

Further study on the analysis of glass to attempt to associate particular styles of bead with a single maker could make it possible to identify the work of individuals. After studying hundreds of beads from Anglo-Saxon sites I am beginning to identify details that could suggest individual makers and I plan to investigate this further. I am also studying the arrangement of beads in single strings to create painted reconstructions and identify taste and design choices of the women.

More recent reports on Anglo-Saxon cemeteries have sometimes only shown the beads photographed from one angle, looking down on one of the pierced sides. This is a real problem for analysing decoration and shape, particularly if the beads are now inaccessible or lost. Two views are essential , particularly of the side of the bead visible when it is worn, and I do hope this will return to being the norm in the future, whether it is drawings or photographs of beads.

Sue Heaser

Suffolk 2018

ABOUT THE AUTHOR

Sue Heaser is a writer and illustrator and has published many non-fiction books on jewellery making and other crafts. She studied Art at the Sadat School of Art in Beirut, and at Falmouth School of Art, UK. A degree in Geography and Archaeology followed at Exeter University. She first worked as a Finds Assistant for the Museum of London and then as an Archaeological Illustrator for the (then) Inspectorate of Ancient Monuments, drawing finds from many of the great Anglo-Saxon sites such as Dover Buckland, Great Chesterford, Mucking and West Stow. She has studied a wide range of crafts and in particular jewellery-making techniques and has skills in silversmithing, enamelling, filigree, lampwork beadmaking and metal and polymer clays. She has published 15 international books on jewellery making and other crafts. Her books have been translated into many languages.

Sue has now returned to her main interest of archaeology and is using her artisan skills to better understand the techniques of the ancient craftspeople. Her next book on Anglo-Saxon beadmakers is in the works. She can be contacted through her website:

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