Glass News

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Welcome to Glass News 49! from the new editorial team!

As you may be aware, Dr. Rachel Tyson and Dr. Andrew Meek have stepped down from their roles as editors, handing over the reins of *Glass News* to us: Victoria Lucas, Eleonora Montanari and Tim Penn.

Victoria Lucas (AHRC NBDTP) is a postgraduate student at Newcastle University, her thesis examines glass recycling practices in Early Medieval England (C7th – 9th) through a combination of chemical analysis and experimental archaeology.

Eleonora Montanari (AHRC NBDTP postgraduate student) is investigating 1st millennium BC glass beads from burial sites in Abruzzo, Italy. Encompassing chemical and use-wear analysis, materiality, funerary archaeology and ethnography, her research attempts to reconstruct the intrinsic symbolic properties of these beads, their production processes and life histories.

Tim is a doctoral student at the University of Edinburgh. His thesis examines Roman and post-Roman burial in Italy, and he also contributes to researching and publishing glass finds on archaeological field projects in Italy, Turkey, Azerbaijan, Iran and Jordan. We are very excited about the future of *Glass News* and we hope to fulfil our role as well as Rachel and Andrew did!

At the most recent AHG board meeting, several other changes were agreed. Sally Cottam has been re-elected as Honorary Secretary and Justine Bayley's role as acting President has been renewed. Five members of the board have retired. Three did not stand for re-election (Andrew Meek, Rachel Tyson and Chloe Duckworth). Daniela Rosenow and Justine Bayley have been re-elected as members of the board. Martine Newby-Haspeslagh, Eleonora Montanari, Victoria Lucas and Tim Penn have been co-opted as new members.

The year 2021 brings further surprises in store, as after this current issue, *Glass News* will become a yearly bulletin focusing on current research carried out on all things glass, and featuring articles, reports and book reviews. This means that updates on events will be sent to members at regular intervals via email instead, so that subscribers will be in-the-know in real time.

The next issue of the *Glass News* will be out in October/November 2021. This is something to celebrate, as not only *Glass News* will have a new look and contents, but more importantly because it will be the 50th issue!

New and current members will be able to choose the format in which they would like to receive the next issue of *Glass News*, with the options being PDF, hard copy or PDF+hard copy.

Subscription renewals for the year 2021 to 2022 are now due, and a renewal form is enclosed or attached as a PDF. We hope that you will all wish to renew your subscriptions to continue to receive *Glass News*, information on our activities and invitations to events. (In the event that your payment has been made by standing order; or if you have joined AHG since January, your membership is valid for the new year). If you return the form by post or email, please remember to indicate on it whether you wish to receive the next issue of *Glass News* as PDF, hard copy, or PDF+hard copy – or email John Clark johnaclark@waitrose.com with your preference.

Turning to the contents of this issue of *Glass News*, we hope that readers will enjoy updates on recent finds, ancient and modern. Colleagues from France and Germany provide a first glimpse at a late Roman cage cup found in Autun last year. Closer to home, Hilary Cool presents some preliminary news about two exceptional glass vessels from Croft Gardens, Cambridge. Finally, a team from AOC Archaeology outlines some fresh discoveries from the industrial glassworks excavated at Salamander Street, Edinburgh.

The biography of objects in the past is an increasingly fruitful field of scholarly study and glass

is no exception. Colin Brain's study of 17th- and 18th- century drinking glasses highlights a number of vessels with historical repairs from his own collection. The care with which damaged glasses were repaired highlights the significance of these objects, which were perhaps simply too valuable to consider throwing away.

Despite the challenges posed by the COVID-19 pandemic, the last year has seen a reassuring number of conferences and other glass-related events, both in person and online. Ondrej Šály offers a summary of an interdisciplinary Conference, Workshop, and Experiment on the History of Glass, held in Eastern Slovakia in July 2020, while Suzanne Higgott reviews the socially-distanced Venice Glass Week 2020 which took place during September. In the virtual sphere, the Association for the History of Glass held its own study day in December 2020 thanks to the organizational dynamism of Daniela Rosenow. Speakers at this event have kindly provided extended abstracts for those who could not make it on the day.

Looking forward, AHG's Spring Study Day, scheduled for May 12th, will again be held online. Speakers will cover topics as diverse as Iron Age Mesopotamian, ancient Jewish Glass, and early Anglo-Saxon glass, as well as Jenny Price's unpublished archive. As vaccinations roll out across Britain and the rest of the world, it is hoped that we will also be able to hold an in-person meeting in the not-so-distant future. As such, the 'Glass in the North' event is provisionally slated to take place in September 2021 (for more details see p. 3). Interested readers will also find news of online events organised by the Society of Glass Technology and the Stained Glass Museum in Ely. The call for applications for the 2021 Study days on Ventian Glass is also now live, this year focusing on diamond-point engraved and cold painted glass of the Renaissance and Baroque periods.

This edition of *Glass News* closes with information about a lavishly new catalogue of the glass held in the Museum aan de Stroom in Antwerp, which may be of interest to readers.

While every effort is made to check the content of the articles and reviews, Glass News does not accept responsibility for errors.

AHG STUDY DAYS

Spring 2021 Study Day: New Research in Ancient Glass

12th May 2021

For registration and enquiries, contact:
ahgstudydays@gmail.com

The meeting will be held via Zoom

10:00 a.m. (BST)

Introduction by Dr Daniela Rosenow, Academic Research Fellow at the Griffith Institute, Oxford University

10:05 a.m.
Katharina Schmidt (Director of the German Protestant Institute of Archaeology (GPIA), Amman)
'Iron Age Glass from Mesopotamia with a Focus on Transparent Glass'

The lecture examines glass finds and their manufacturing techniques from Mesopotamia and adjacent regions in the Iron Age period. In particular, the group of "cast and cut" vessels and inlays represents the most important group of glass objects in this period. Within this group, transparent glass occupies a special position since it first appears in the 9th century BCE and occurs only in Neo-Assyrian palatial contexts of the city of Nimrud. The lecture will deal in detail with the transparent glass vessels and their use in the Neo-Assyrian palace context in Nimrud.

10:35 a.m. (approx.)
Martine Newby-Haspeslagh (Fellow of the Society of Antiquaries and independent glass scholar)
'A Blast from the Past: The Place of the Shofar in the Corpus of Ancient Jewish Glass'

The shofar is integral to the practice of the Jewish faith, a sacred object typically made of a ram's horn that is used, and has been used, since Biblical times to mark Rosh Hashanah, the Jewish New Year, among other ceremonies. The use of the shofar is first mentioned in *Exodus* and *Leviticus* and examples have been depicted in early carvings and synagogue frescoes, usually to one side of the Temple Menorah.
However, what is less well known are the handful of surviving examples made in blown glass. This talk will examine a Roman era example from a private collection here in London and compare it to others preserved in museums as well as to contemporary depictions including those on other ancient Jewish glasses, on both mould-blown eulogae and sandwich gold-glasses.

11:05 – 11.20 Break

11:20 (approx.)
Sally Cottam (Honorary Secretary of the *Association for the History of Glass*)
'Unfinished Business: The Jennifer Price glass archive'

Jenny Price was one of world's most eminent scholars of ancient glass and an enthusiastic and much-admired President and member of the Association for the History of Glass. Her prolific
body of published work includes hundreds of reports on Roman glass from Britain and beyond, as well as books, journal articles and conference contributions. Jenny continued her
research despite periods of poor health and was working on a number of projects right up until her death two years ago, in May 2019. As her literary executor I have been exploring opportunities to complete her unfinished projects and make this valuable research available to a public audience. At the heart of this unpublished archive is a catalogue of the Romano-British Glass in the British Museum, a project stretching across several decades and one particularly close to her heart. This presentation looks at the challenges of handling an important literary estate, the problems that arise when dealing with an unfamiliar, complex and unfinished research project and the most effective strategies to bring such projects to fruition.

11:50 (approx.)
Victoria Sainsbury (Post-doc, Institute of Archaeology, Oxford University)
The glass of the earliest king halls: Analytical Results from Lyminge

The Anglo-Saxon settlement at Lyminge is characterised not just by its early age, but also by the amazing richness of the fifth and sixth century layers. Among the many finds from the site, perhaps the most extraordinary is the collection of glass. Over 550 glass finds came from these early layers alone. The sheer volume of material, as well as the presence of both moiles and droplets, challenges the view that glass vessels were not made in Anglo-Saxon England. An analytical pilot study was undertaken to understand the origin of this material, and to access how reliant this early industry was on imports or recycling roman remnants.

12:20 (approx.)
Denise Allen (Independent glass scholar)
Some new glass finds from excavations in Exeter and the South-west

The lecture will discuss some interesting new glass finds from excavations in Exeter and the South-west: a few choice fragments from within the legionary fortress in Exeter, from the nearby supply base at Topsham and from two villas in Dorset. Not always visually spectacular, they nevertheless add to the discussion about the role of Roman women in the trade of glass containers or their contents, the recycling of glass fragments for further use, and the range of possible uses of glass tesserae found amongst excavated assemblages.

To register please send an emails to ahgstudydays@gmail.com

Update on Glass in the North

This year's AHG autumn meeting, on the theme of 'Glass in the North' is provisionally scheduled to take place in September 2021 (dates tbc), COVID-19 restrictions allowing. This two-day meeting will be dedicated to the memory of our dear friend and former President of the AHG, Jennifer Price, who published and lectured extensively about glass in northern Britain and who made Durham and Yorkshire her home for many years. The event will take place in and around Newcastle-upon-Tyne, to showcase the rich history of the North-East in the production and consumption of glass and glass objects, spanning from the Roman period, through the Middle Ages, with sites such as Jarrow-Wearmouth Priory, through to the 18th Century up until 1994, when the Lemington glassworks, founded in 1787, closed its doors after more than two centuries.

The legacy and pride of this glass-making and working tradition still survives in institutions such as the National Glass Centre in Sunderland, which hosts not only a wide collection of historic and contemporary glass masterpieces, but also a hot shop, where glassworkers can be seen in action and glass-working and bead-making classes can be taken.
The first day of the meeting will be based at Vindolanda Roman Fort and the second day will include visits to some famous glassmaking sites in north-eastern England.

More details will appear on the AHG website as they become available, or please contact Victoria Lucas and Eleonora Montanari via email:
glassinthenorth@gmail.com

AHG GRANTS

Grants are available from the Association for the History of Glass, for educational or research activities consistent with the Association's charitable aims. These could include, for example, attendance at a conference to present a lecture or poster, a study visit, fieldwork, or publication of scholarly works. There are no restrictions on who may apply or on the topics of applications, which will be judged on merit. Multiple applications in different years will be considered with individual awards up to £500. A list of grants that have previously been awarded can be found on the AHG website.

An application form may be downloaded from the website, or can be obtained from the Honorary Secretary, Sally Cottam, at ahgstudydays@gmail.com, or writing to The Association for the History of Glass Ltd, c/o The Society of Antiquaries of London, Burlington House, Piccadilly, LONDON W1J 0BE.

UPCOMING CONFERENCES AND TALKS

Note on 22nd Congress of L'Association Internationale Pour l'Histoire Du Verre

13th – 17th September 2021

A note for members who are not aware that AIHV22 will now be held completely online as a result of the pandemic situation. The dates remain the same.

Please visit the conference website for up to date information: https://eventos.fct.unl.pt/22aihv

Glass: Reuse and Recycling through the Ages

A free webinar, 2pm-4.30pm on Wednesday 23rd June 2021

Colin Brain will present the keynote talk

In these increasingly green-conscious days one could be forgiven for thinking that the emphasis on glass reuse and recycling was relatively recent. However, most of the glass worked in Britain during the Roman period was probably recycled. Many of our ancient stained-glass windows include elements that have been reused from other windows, or even other churches. 17th- and 18th-century drinking glasses show evidence of having been repaired so that they could be reused. So, there is nothing new about glass reuse and recycling. Today our main concern is with protecting the environment, but then it was probably more a desire not to waste such a valuable commodity as glass, just because it was broken. Yet reuse and recycling mean more to the glass history and heritage community than just bits of broken glass. Reuse and recycling of glass: designs; recipes; techniques; etc. are all important, although perhaps less obvious. This talk looks at reuse and recycling in glass over the years by focusing on a number of examples and trying to understand how and why they were done.

This theme will then be taken up by a few invited glass artists and research students who will describe some of their work in this field. The following artists and researchers have already agreed to talk: Inge Pannels, Gregory Alliss, Hannah Gibson. The audience will be encouraged to participate, with 5 to 10 minutes allowed for questions using 'chat' rather like a *bring and share* session.

Please contact Christine at the Society of Glass Technology (christine@sgt.org) to book your place. Your reservation will be confirmed by return and login details will be sent a few days before the event.

Organised by the History & Heritage Team at the Society of Glass Technology.

Stained Glass Museum in Ely
Spring lecture series

The Stained Glass Museum has added more talks to its series of online lectures this spring. We hope you will join us and discover something new! Topics include Welsh saints in stained glass, tips on how to identify the makers of 19th century windows, an artist talk by Mark Angus and exploration of some medieval stained glass treasures in Leicester.

Free tickets for talks taking place in April are available at https://stained-glass-museum.arttickets.org.uk

Find more information about our lecture series, and other events taking place at the museum website, accessible at https://stainedglassmuseum.com/toursandlectures

Study days on Venetian glass

Diamond-Point Engraved and Cold Painted Glass of the Renaissance and Baroque Periods Istituto Veneto di Scienze, Lettere ed Arti 8 – 10 September 2021

Taught by
Rosa Barovier Mentasti, Wiilliam Gudenrath. Nicole Riegel, Cristina Tonini and Marco Verità

The "Study Days on Venetian Glass" are an opportunity for in-depth study on Venetian glass and are tuned to an audience of glass scholars, museum curators, conservators, scientists and collectors. The programme includes lectures by art historians and glass experts. All the participants are invited to present the results of their studies and researc on this subject. Every lecture is followed by a discussion. Lectures and discussions will be held in English.

The theme of 2021's edition is: ***Diamond-Point Engraved and Cold Painted Glass of the Renaissance and Baroque Periods.***

Diamond-point engraving on glass was applied, at Murano, by Vincenzo d'Angelo dal Gallo who first used it to decorate mirrors (in about 1535). Then, in 1549, he obtained a ten years patent for decorating blown glass vessels with this technique from the Venetian government. Diamond-point engraving is sometimes combined with cold painted ornamentation in Renaissance glass vessels. Engraved decorative motifs changed from the Renaissance to Baroque period. The Venetian production of diamond-point engraved glass is far more important and wider than it is supposed. The *Façon de Venise* underwent substantial and important developments after the diffusion of this Venetian technique in European countries. The production of Renaissance glass includes also a series of cold painted vessels some of which took inspiration from prints.

The topics that will be touched upon will include:

General overview of the history of glass art; raw materials and casting/processing techniques; Archaeometrics; Conservation and Restoration; Discussion about individual pieces of Museum collections; Recovery techniques and ancient models during the nineteenth century.

The seminars will be completed by a tour of the Murano Glass Museum and by practical demonstrations in glassmaking studios.

As usual the lectures will be published in English by the Istituto Veneto di Scienze Lettere ed Arti.

How to enroll:

Applications should be sent by e-mail to laura.padoan@istitutoveneto.it by **15 of May 2021** at the latest**.** Applications should include a CV highlighting the applicant's interest for the topic and any other previous studies in this specific field.

Applications will be reviewed by the Scientific Committee who will select participants based on their qualifications and their stated motivations. The selection made will attempt to ensure the participation of candidates from different cultural backgrounds and countries of origin. Participants must be committed to take part in all courses, seminars and visits scheduled. At the end of the course, participants will receive a certificate of participation. The number of places available is limited to 30. The enrolment fee is 300 €. All expenses relating to travel to and from Venice, and food and lodgings on arrival, will be borne by participants. The organisers will cover the costs of the trip to Murano and the tour of the Glass Museum, in addition to the demonstrations held there.

The Programme of the 2019 Study Days is available at:
http://www.istitutoveneto.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/1645

NEW DISCOVERIES

A new cage cup from Autun

Carole Fossurier [1], Tisserand, Nicolas [1], Constanze Höpken [2] *and* Katja Broschat [3]

[1]*Inrap Bourgogne-Franche-Comté, France,*
[2]Landesdenkmalamt Saarland, Germany,
[3]Römisch-Germanisches Zentralmuseum Mainz, Germany

In the summer of 2020, an excavation of part of an ancient cemetery in Autun (ancient *Augustodunum*) directed by C. Fossurier was carried out near the church of Saint-Pierre-l'Estrier, which itself dates back to Late Antiquity. The excavations uncovered more than 230 tombs, including about fifteen in lead coffins, six stone sarcophagi and several mausolea (all of which were looted). The grave goods were rare but valuable, and included amber and jet objects, gold jewellery and precious clothes. In one of the stone sarcophagi, an extraordinary glass vessel was recovered: a cage cup.

Figure 1: *cage cup in situ inside stone sarcophagus.*

Figure 2: *excavations of the cemetery at Autun.*

The vessel, although archaeologically complete, was broken into many pieces and was held together by the earth that filled it. It is bowl-shaped, colourless and monochrome. The diameter is about 16 cm, the height about 12 cm. Below the flared rim is a small rib and a neck. This is followed by an area of lettering and, towards the bottom, a row of net meshes ending in a single round mesh at the base. The letters are Latin. With the exception of three, most of the letters are well preserved and clearly identifiable after a separator: V I V A S ? E L I ? I T ? R. The proposed reading is VIVAS FELICITER X (with the X used for separation). This is an injunction that may be known on *diatreta*, where a common text reads "BIBE VIVAS MVLTIS ANNIS."

The vessel is one of about one hundred known cage cups, but only a few examples are both complete and have a known, datable context. The Autun vase provides information about its owner and his social background: The stone sarcophagus shows the wealth of the deceased. This individual must have been an important person who undoubtedly belonged to the upper class. We cannot link the deceased and his case cup to an early Christian community, but the cemetery was home to the graves of the first Christians of Autun, as evidenced by earlier discoveries and testimonies from the 16th and 18th centuries.

The vase was quickly dismantled and the soil removed to prevent it from being damaged. At the beginning of

March it was taken to the Römisch-Germanisches Zentralmuseum Mainz (Germany) for analysis and restoration, as it is assumed that the production site of these vases is around Koln (Germany). Residue analyses are also in progress.

Figure 3: *cage cup undergoing conservation at the Römisch-Germanisches Zentralmuseum Mainz.*

Anglo-Saxon glass vessels from Croft Gardens, Cambridge

Hilary Cool

Barbican Research Associates
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During the autumn of 2020 Albion Archaeology excavated an Anglo-Saxon cemetery at Croft Gardens in Cambridge in advance of the development of graduate student accommodation by King's College. The excavations attracted press attention at the beginning of February and the editors of Glass News noticed that a claw beaker had been found. They asked us to provide some information for their readers and this we are happy to do.

The claw beaker was found fragmented and has been restored by Pieta Greaves of Drakon Heritage and Conservation (**Figure 1**). As can be seen it is a handsome light yellow/brown vessel with indented trails on the claws and fine trailing on the upper and lower body. As such it belongs to the commonest variant of claw beakers in use in the sixth century. The person it was buried with also had a spear, shield and knife to accompany them to the afterlife. Osteological analysis by Corinne Duhig of Cambridge University has shown that the deceased was a male probably less than 30 years old.

Figure 1: *Claw beaker after conservation (Image: Pieta Greaves © Drakon Heritage and Conservation).*

Glass vessels in Anglo-Saxon graves are far from being a common occurrence, but where they do occur claw beakers were one of the more favoured forms. The same cannot be said for the second vessel. This is a small barrel-shaped flask in the greenish bubbly glass typical of the fourth century and was found intact (**Figure 2**). It has a ring handle and four little feet. The ends are decorated with spiral, self-coloured trails. This is a very unusual fourth century vessel. The form is always very rare but is known in the Rhineland during the late second and third centuries. Those, however, are made in colourless glass with coloured trails and are part of the snake thread tradition. The Croft Gardens vessel is later and cannot be part of that production.

Figure 2: *Barrel-shaped flask as excavated (Image: Albion Archaeology).*

Though there are earlier Roman burials on the site it is believed that the grave the flask was found in belongs to the Anglo-Saxon cemetery. This is a long-curated vessel, old at the time it was deposited. In this it recalls the famous Mucking claw beaker made in the late Roman tradition at the end of the fourth century but not deposited in the grave until the first half of the sixth century. Unfortunately only a small part of the grave it was found in survives, but amongst the other material there were two coins with perforations that must have been used as pendants. My colleague at Barbican, Peter Guest, has kindly identified the currently legible one and informs me it is a GLORIA ROMANORVM struck in the name of Valens at Siscia (AD 364-78). Preliminary indications are that this too may have been an unusual choice for an Anglo-Saxon grave good as, when similar Roman coin pendants are found, normally other issues with different obverses were preferred.

When full post-excavation analysis is undertaken with its full panoply of radiocarbon dates, isotopic and residue analysis etc. we shall learn more about the people buried here. Hopefully there will then be clues as to quite why the mourners chose to deposit this very unusual flask and possibly unusual coin pendants with them.

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Please send your contributions for future issues of Glass News to the editors:

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REMINDER

Would you like to see the photos in this issue in colour? We can send a colour PDF version of this issue of Glass News on request TO MEMBERS AND SUBSCRIBERS (in addition to your paper copy – we know you like something to read in the bath!). Please email one of the editors (see back cover) if you would like a PDF copy.

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ARTICLES

Drinking glasses with Historic Repairs

Colin Brain
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Mention repaired glasses and many people would probably think of modern repairs using modern specialist adhesives meticulously done for conservation and display purposes. This article is about something rather different – seventeenth- and eighteenth-century glasses with period repairs so they could be reused and perhaps re-displayed. There is evidence for such repairs from both archaeological fragments and complete survivals, but it is difficult to pin down how common the practice was. My best guess is that around 5% of stemmed glasses in use for the later 17th-century had been repaired and reused. Assuming the rate of breakage was of a similar order to the domestic production rate (say around 800,000 glasses per year in the 1680s) this would mean 40,000 glass repairs per So there must have been a significant trade in repairing these glasses, but why did people want glasses repaired and how was the repair trade organised? Let's start with some examples of repaired glasses. The earliest example (that is the oldest glass, not necessarily the oldest repair) is an engraved Verzelini glass, dated 1577, in the Corning Museum of Glass. This has a turned fruit-wood foot. By comparison the 1583 'KY' glass in their collection has a soldered lead-cage repair at the base of the stem which links the merese at the stem base with a similar merese on a replacement foot. These are the two most common types of repair so far identified and in these examples were presumably carried out as bespoke activities so that the proud owners could continue to display these fabulous glasses.

The **Figures 1** and **2** show excavated fragments which have lead-cage repairs and were probably made between about 1630 and 1660. These were found on the banks of the Thames. The excavation site that has yielded the greatest number of repaired stems like these was that at 48-54 High Street, Bagshot. This was thought to have been the site of an inn. One apparently unique repair from this site was made using twisted gold-coloured wire instead of a lead cage. This site also yielded quite a number of similar, but un-repaired glass fragments suggesting that the repairs had been made so that the year. This was not the work of one itinerant repairer! The repair rate is based on the ratio of stems with evidence of repair to those without such evidence from our fragment database. The production rate is based on three independent documentary sources which allow estimates of 750,000 to 970,000 drinking glasses per annum. If one considers that only a proportion of the stem breaks would have been repairable by the methods covered here and that many of the repairs would have involved making one serviceable glass out of two broken ones, the proportion of repairable glasses that were repaired would have been significantly higher. Estimating the repair frequency in the 18th century is more difficult because of the small number of fragments recorded.
vessels could continue to be used by customers. Twenty-two such fragments have been previously published (Willmott 2001).

Figure 1: *Lead cage-repair on a line mask stem.*

Figure 3 shows a similar lead-cage repair at the base of a high quality lead crystal wine glass from about 1690. The stem colours on both of these illustrations are due to surface discolouration from its long immersion in the Thames. There are other examples from the thirty or so years between these two glasses, such as the repaired tapering-stem glass found at Rathfarnham Castle in

Dublin and the cold-painted tapering stem in the Victoria and Albert Museum. The latter has a replacement foot, but this time in metal rather than wood. Both these examples were presumably repaired for re-use. The last two examples of repairs take us well into the eighteenth century. Both have turned wood feet, probably reflecting the difficulty of using any of the other repair methods mentioned on these designs of stem. (**Figure 4)**

Figure 2: *showing lead cage repair on a cigar stem*

Figure 3: *similar repair on a lead crystal*

Figure 4: *showing two examples of C18th turned - wood repairs*

There are a few documentary references that may be relevant to how glass repairs were carried out. For example in 1675 an inventory for John Bartlett's shop in Abingdon includes an item (Valsey 1974):

> *"One other parsell of glasses broeken and hoel 15s 0d."*

Similarly the ship "Industry of Yarmouth", William Currell master, was recorded in 1678 (Data Base: Intoxicants in Early Modernity England 1580 – 1740) as carrying as part of its cargo from Great Yarmouth to London:

> *"1 chest broken glasses."*

The more usual terminology was 'broken glass'. Four years later an inventory for Robert Browne a grocer of Ditchingham Norfolk records (ibid) that in the parlour there were:

> *"several broken glasses."*

None of these references are conclusive, but they all suggest that broken glasses were sufficiently valuable for appraisers and customs officials to want to record them. This could be just that they were being kept, or transported, for recycling as cullet, but at this date that appears to have been an activity mainly confined to poorer people collecting up discarded broken glass. Given these few references it appears possible that there was one or more businesses undertaking these repairs and that repaired glasses were traded by smaller shops and itinerant 'glass men.'

This quick survey has suggested that there was a significant drinking glass repair activity in England throughout much of the 17th and 18th centuries. Part of this appears to have been a bespoke activity concerned with glasses that had a particular value to their owners, but the bulk was probably associated with repair for reuse. The figures suggested for the number of repairs seem high, but apparently there were around 30,000 alehouses in England and Wales in the 1630s (Smyth 2004) so that would roughly equate to one repaired drinking glass per alehouse per year. Even if the repairs were confined to inns or taverns this would probably only equate to about 10 repairs per establishment per year. It seems unlikely that the motivation for repair and reuse was an environmental one, just that glass was too valuable to waste just because it was broken.

Note: All photographs are by the author of items from the author's collection.

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CONFERENCE AND EVENT REPORTS

Report on the Interdisciplinary Conference, Workshop, and Experiments: The History of Glass 2020 - East Slovakia

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Hanušovce nad Topľou, Slovakia: 23th-26th July 2020

In the summer of 2020, an interdisciplinary conference, which included workshops dedicated to historical glass, took place in Slovakia (**Figure 1**). During the scholarly part, several lectures were given by scholars from Slovakia and Czechia. For instance, historian Peter Chrastina talked about the texts devoted to glassmaking in the geographical works of Matthias Bel (1684 - 1749) and archaeologist Hedvika Sedláčková (though not physically present), spoke about glass in the context of epidemics.

***Figure 1**: Lecture room in manor house in Hanušovce nad Topľou. (Photo © Ondrej Šály)*

During the roundtable discussion, Kateřina Tomková presented a new book *Through the Landscape of Archaeology, Landscape of Glass* (Prague - Most 2020), which was dedicated to Czech archeologist Eva Černá, who to our great delight was able to be present among us. The book contains approximately 30 studies in languages including Czech, German and English written by authors of various nationalities.

***Figure 2:** Historical wood-fired glass furnace. (Photo © Ondrej Šály)*

In addition to these and other activities, experiments were held in the living open-air archeological museum in Hanušovce, where there is a reconstruction of a wood-fired glass furnace from the 9th century (**Figure 2**). Danica Staššíková-Štukovská, the Chair of Historical Glass Commission attached to the Slovak Archaeological Society at the Slovak Academy of Sciences provided professional commentary for the public. In this context, I would like to highlight a study called "Glass Melting Experiments in the Reconstruction of Glass Furnace from the 9th century" which was published in *Archeologia Polski* in 2020 and written by Slovak scientists Danica Staššíková-Štukovská, Dagmar Galusková, and Alfonz Plško.

Venice Glass Week 2020

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Given all the uncertainties about travel and social distancing, it is perhaps remarkable that Venice Glass Week 2020 went ahead from 5–13 September last year, under the title '#TheHeartofGlass'. Not only did it go ahead, but it delivered a heady cocktail of exhibitions, tours, demonstrations, workshops, screenings and online events. Equipped with a colour-coded programme and a map, the glass enthusiast was spoilt for choice by the multiplicity of events taking place around Venice, Murano and Mestre.

Figure 1: *View across to the Doge's Palace from near the entrance to Le Stanze del Vetro on the island of San Giorgio Maggiore.*

The offering at this fourth iteration of the festival comprised over 180 events proposed by people from around the world. They included sixty-seven exhibitions, installations, inaugurations and receptions, more than twenty guided tours, and fifteen demonstrations and workshops. Wide-ranging online options ranged from 'Collecting glass today' to 'The fine art of transporting glass'.

The Venice Glass Week information desk in Campo Santo Stefano was close to the Palazzo Loredan and the Palazzo Franchetti, homes of the Istituto Veneto di Scienze, Lettere ed Arti. Together, these palazzi formed the festival HUB, exhibiting installations by 17 glass artists between them. Palazzo Franchetti hosted the 'Autonoma Residency Prize' and the 'Bonhams Prize for The Venice Glass Week'. The awards ceremony was live streamed and is available to view online. The Autonoma Residency Prize is awarded to the best project exhibited at the Venice Glass Week HUB by artists in glass aged between 18 and 35. The winner is awarded a two-month Emerging Artist residency at the Pilchuck Glass School in Seattle, Washington. The Pilchuck Glass School was founded by Dale Chihuly, who was himself inspired by the Venetian glassmaking tradition and exhibited a ground-breaking series of glass chandelier installations in the city - 'Chihuly Over Venice' - in 1996. The idea of the prize is to expose young Venetian glassmakers to external influences and thereby facilitate the dynamic development of the Studio Glass movement. The winner was 'Touch Me', a highly innovative project that brings together the Venetian glassmaking tradition and cutting-edge digital techniques. Designed by Matteo Silverio and Stafano Bullo, it is counterintuitive, with the viewer invited to touch the glass and rearrange its shape. The Bonhams Prize was first awarded in 2019. The thousand-euro prize money is awarded for an original project, designed for the festival, which acknowledges the Venetian tradition and celebrates the vision of Murano artists and their contribution to design. Two projects won prizes in 2020. The first was 'The Window Says to Me', comprising seven glass sculptures inspired by a line written by French novelist Marcel Proust. The idea was conceived by Tristano di Robilant and brought to fruition on Murano in collaboration with glass artist Andrea Zilio. The second Bonhams prizewinning project was 'Unbreakable: Women in Glass'. A celebration of

the unbreakable spirit of the women artists who have collaborated with Berengo Studio over the years, the exhibition, at the Fondazione Berengo Art Space on Murano, was curated by Nadja Romain and Koen Vanmechelen.

Among a number of fascinating visits, the present writer enjoyed a tour of the Salviati factory on Murano and saw a bee-themed display of Judi Harvest's glass, 'Art and Honeybees in the Time of Quarantine', at the Concept Store Palazzo Contarini Polignac. The highlight, though, was the inspiring and beautiful landmark exhibition 'Venice and American Studio Glass', which was curated by Tina Oldknow and William Warmus and held at Le Stanze del Vetro from 6 September 2020 to 10 January 2021. The initiative of the Fondazione Giorgio Cini and Pentagram Stiftung, Le Stanze del Vetro is fabulously located on the island of San Giorgio Maggiore. (**Figure 1**) Established in 2012, it mounts exhibitions of modern and contemporary glass and is developing an archive on Venetian glass and a specialised library. Each year, the opening of a major exhibition there coincides with the start of Venice Glass Week. The exhibition 'Venice and American Studio Glass' and its accompanying catalogue, edited by the exhibition curators and published by Skira, are devoted to the American Studio Glass movement and its reciprocal relationships with Venice in the second half of the 20th century. The exhibition focused on the work of American artists who spent time learning and/or working in Venice and pioneered or adapted its style and techniques in their glassmaking. In the late 1950s Harvey K. Littleton, a founder of the Studio Glass movement, was among the earliest American glass artists to visit Murano. Having been awarded Fulbright Fellowships, Dale Chihuly and Richard Marquis were able to study glass-working at the Venini glassworks on Murano in 1969. Chihuly found inspiration in the concept of the glassmaking team, (**Figure 2**) while Marquis took away the Venetian *murrine, a canne* and *incalmo* techniques. A decade later, in 1979, the Venetian glassmaker Lino Tagliapietra taught at Pilchuck. The exhibition brought the story of the American Studio Glass artists' love affair with the Venetian tradition bang up to date with numerous recent works. Those illustrated here testify to the creative ways in which the Venetian tradition is still being absorbed and reinterpreted by American Studio Glass artists. (**Figure 3**)

Figure 2: *Part of Dale Chihuly's 'Laguna Murano Chandelier' installation, made on Murano in 1996, in the Sala Carnelutti of the Fondazione Giorgio Cini during the 'Venice and American Studio Glass' exhibition at Le Stanze del Vetro.*

Venice Glass Week 2021 is scheduled to take place from 4 to 17 September. Sadly, the Study Days on Venetian Glass course that coincides with Venice Glass Week and is held at Palazzo Franchetti, with a visit to Murano, was cancelled in 2020 as a result of the pandemic. However, it is scheduled to return this year from 8 to 10 September, when it will be dedicated to the theme 'Diamond-Point Engraved and Cold Painted Glass of the Renaissance and Baroque Periods'. For further information about the Study Days, including how to apply to participate by the 15 May 2021 deadline, please see **p.5**.

Figure 3: *Nancy Callan (b. 1964), 'Linea', 2018, at the 'Venice and American Studio Glass' exhibition.*

Abstracts from the AHG Autumn 2020 Study Day: New Research in Ancient Glass, 2nd December 2020

The AHG hosted a mini study day in December 2020, in conjunction with the Association's AGM, hosted by Dr Daniela Rosenow the study day highlighted research in glass currently being undertaken by PhD candidates across the UK. Below are presented extended abstracts from the four speakers summarising their papers.

Why Recycle Glass? The Answer is Clear?: Experimental glass recycling using a wood-fired glassworking furnace.

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The life histories of glass artefacts are complex, the inherent transmutable nature of glass lending itself to recycling and to distinct objects returning to a common 'pool' of glass numerous times to be reformed. The chemical composition of glass reflects this; containing not just the life history of the object itself but allowing access to a tapestry of past glassworkers technological and decision-making practices that form part of a deeper biography. It is important to include recycling in any big picture view of glass compositional analysis, and the study of the emergence of new glass groups, recipes, and technologies. Therefore, greater understanding of the effects of repeated recycling on glass composition and working properties is vital.

Reliance on anecdotal information from modern glassworkers – working with electric and gas fired furnaces; with highly oxidising atmospheres and stable, high temperatures – has led to the widespread assumption that glass can only be recycled a very limited number of times before it becomes unworkable due to loss of flux. However, an accurate picture of recycling in antiquity cannot be obtained without considering the impact of the use of a wood fire on the furnace environment and temperature regulation; and their effects upon the chemical composition and working properties of glass.

My research is the first experimental work to test assumptions about how we can recognise past glass recycling, and the effects of repeated recycling on glass, using period appropriate fuel and furnace structure. The work adopts an approach combining experimental archaeology, chemical analysis, and expert craftsperson knowledge; to produce a picture of recycling that will deepen understanding of the links between craftsperson experience, chemical composition, technological practice, and object biography.

Chemical analysis of the glass by LA-ICP-MS and EPMA combined with assessment of the workability of the glass carried out by Colin Rennie from the University of Sunderland and the National Glass Centre, have demonstrated that previous assumptions of rapid deterioration of glass workability with repeated recycling, assumed to be a function of loss of soda flux and contamination by potash, are incorrect. After five cycles of closed loop recycling very little change in working properties was observed, and loss of soda only totalled a maximum of -6%. Whilst contamination by potash and phosphates was the most significant compositional effect of recycling this was still relatively small in terms of actual values and appeared to have little to no effect upon the overall workability of the glass. These results suggest that current models are likely significantly underestimating the amount and intensity of glass recycling taking place in antiquity.

If you would like to hear about Victoria's research and findings in more detail the version of this paper she gave for EAC12 can now be viewed on YouTube following the link below:
https://youtu.be/INedDH5ZDy0

Unwinding the Glass Beads of Pre-Roman Abruzzo, Italy

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Among the earliest objects crafted from hot glass, beads reveal exciting stories about the people who made, owned and possibly curated them. Due to the artificial nature of glass, colour, opacity and durability of the

beads largely reflect intentional choices, which are regulated by the technological know-how and belief systems of a given society. Glass beads can be re-arranged throughout their life cycle to form necklaces, bracelets, earrings or garments. When part of a costume, they can act as markers of gender, age or social affiliation through visual codes.

Glass beads from female and child burials found in the cemetery sites of Campovalano, Fossa and Bazzano, located in Abruzzo, central Italy (1st Millennium BC) have been traditionally interpreted as mere ornaments. Their intrinsic symbolic properties, production processes and life histories have been overlooked, with previous research mostly focusing on typology.

My research intends to shed new light on glass bead biographies and to assess whether the use of beads in death reflects the ways they were used in life. Experimental archaeology and use-wear analysis are fundamental tools to access untapped information around glass bead production and consumption. To redress the imbalance, the methods and partial results obtained from qualitative use-wear analysis carried out on replica bead sets will be discussed below.

To test wear formation processes on glass beads, volunteers were asked to wear a necklace for approximately a year. The experimental protocol consisted in the making of beads by lamp winding, using blue soda-lime-silica (Murano 3effe) glass canes. The use of a lamp allowed for a high degree of uniformity and replicability of the beads. Subsequently necklaces with two glass beads each and a bead in softer material, either in amber or in copper alloy, were handed out to ten participants, who were tasked to wear these for a period of ten months. The glass beads crafted by the author have the same broad chemical composition of the archaeological specimens from Abruzzo. The materials selected for the third bead are based on the information available in the archaeological record for the sites, as amber and copper alloy beads are frequently associated with glass beads. Besides this, a second variable introduced in the experiment was the use of either vegetal or animal string, represented respectively by flax/cotton fibres and leather. Although there is no direct evidence related to the use of such stringing materials, as no traces of strings were found in the burials, it appears likely that organic materials were employed.

Prior to stringing, the beads were observed under a digital microscope (Dino-Lite) to establish the presence of any major manufacturing traces. After the beads were worn, they were examined using in addition an incident light or metallographic microscope. By doing so, it has been possible to establish that traces of wear by use were present on the beads. The traces were mainly observed around the area of the thread-hole and had different morphologies according to the agent – either beads or string – and the type of action that caused them. The evidence collected so far will lay the methodological foundations for further use-wear analysis on archaeological beads retrieved from burials, allowing me to interpret the datum through the wider lens of production *chaînes opératoires* and funerary archaeology.

Analysing glass bangles from the Middle East to establish likely primary production locations and dissemination

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A wide variety of glass bangles have been found across the Indian Ocean trade network, particularly from the 13th–18thcenturies CE. However, although assumed indicative of differing manufacturing periods and places, no definitive connection has been established. A few studies have undertaken chemical analysis to establish links between the primary production locations of the glass and secondary production of styles, but likewise proven unsuccessful. This may be due to the differences having no link to period, provenance, nor workshops – perhaps holding transcending symbolic meanings across the Islamic World. Alternatively, it may be owing to flawed methodological approaches.

Previous research has based stylistic typologies on only one, or a few, regional collection(s) and limited chemical analyses have only studied small surface find collections, lacking archaeological context. To identify patterns between style, chronology and provenance, a detailed master typology must be created to subsume existing studies and enable future developments. Additionally, core collections must be larger and have reliable stratigraphic information to anchor chronologically. To address such issues, this study undertakes similar analysis on approximately 200 excavated fragments from the Siraf collection at the British Museum. The focus is the Gulf region, set within the context of sites along the Indian Ocean, compared with existing collections from surrounding regions. This approach enables a more detailed – yet holistic – view, building on and adapting previous studies.

To identify likely regional sources of the raw materials, multiple trace element analyses of the glass is necessary.

Preliminary SEM-EDX analysis has identified at least three general regions of production for the most common varieties of Siraf bangles – dark 'black looking' Type A (plain) and Type B (twisted), none of which are localised, despite evidence for a glass production workshop. Instead, groupings are Syria-Palestinian, Mesopotamian and Central Asian. These exciting results tentatively establish correlation between the sub-types of core categories A and B, and general regional glass groups. Additionally, it appears that the dark glass bangles were a result of a high iron recipe, purposely emulated across manufacturing regions to produce a similar hue, rather than the result of recycling of coloured glasses or accidental additives. For the first time provenance of glass can be scientifically linked to bangle styles, offering potential for further interpretation into their distribution patterns, cultural values, and as reference catalogue to contextualise other collections.

We now eagerly await the results of further LA-ICP-MS analysis to hopefully reveal more precise glass signatures within the general regions identified.

Charlotte's full talk can be viewed at the following link: https://www.youtube.com/watch?v=LzztX6o0FTY

The trade and use of Roman Glass in Ancient Times

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As archaeology, using modern techniques and technologies, reveals more material evidence about the ancient world, so the interpretation of the material culture becomes a significant component in the quest to tell the story of life in the Roman world across a chronology that saw dramatic changes to society, commerce and the state itself.

The Romans used more glass than any other previous civilisation and were expansive traders and consumers of glass (Grose 1977). From 50 BCE, the glass industry rapidly expanded across the Empire with the spread of the Roman empire. Over this period, glass rapidly changed from being solely luxury objects to become common domestic products just at the same time as a new glassblowing technology was introduced into the industry (Prior 2015; Larson 2016).

Glass is a unique archaeological material as it survives for long periods in the ground and had a wide range of uses to ancient societies. This study focuses on consumerism, trading and the Roman economy as revealed by patterns of different glass forms found on sites over time. The research hypotheses are that consumer culture was the driver for the patterns of consumption seen in local areas and glass workshops and traders of glass products were responsive to changing glass fashions. It aims to answer questions like: What was the value of glass to ancient societies? As many ancient glasses did not have decoration (Harden 1989, 7), were decorative forms 'high value' (**Figure 1**)?

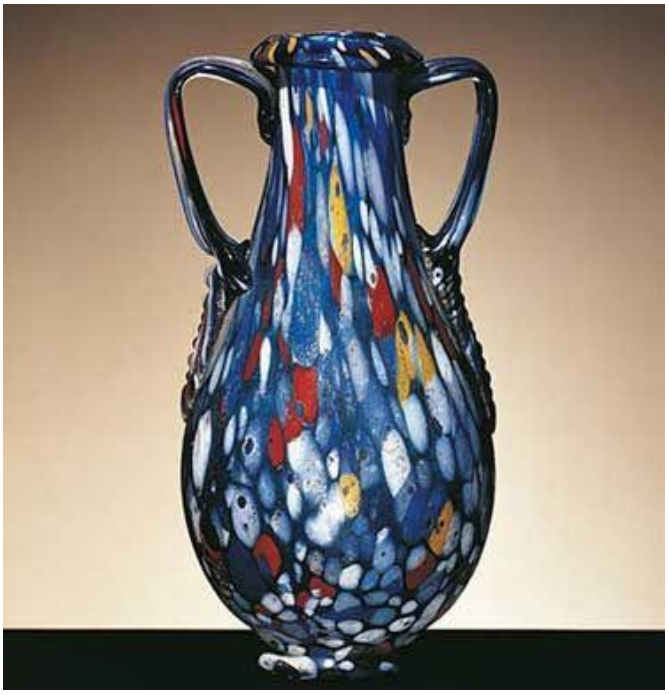

Figure 1: *Blue. Blown, blobbed Two-Handled Jar.*

Testing of these hypotheses will be through the collection and analysis of detailed archaeological evidence of fragmentary assemblages with locations and period phases as associated variables. The research is at an early stage. The current phase of data collection aims to gather information about excavated glass finds from the first two centuries recovered at a diverse range of settlements across Roman Britain (Allen 2011; Cool and Price 1995; 1998; Price and Cottam 1996). With an identification of forms not always possible, the data pool will be increased using the accession line data evidence of glass types and characteristics, using catalogues and a typological guide to provide clues to Roman glass variants (Price & Cottam 1998). The next logical step is to create a unified database of the glass finds, locations and period/phase data and apply statistical multivariate component analyses.

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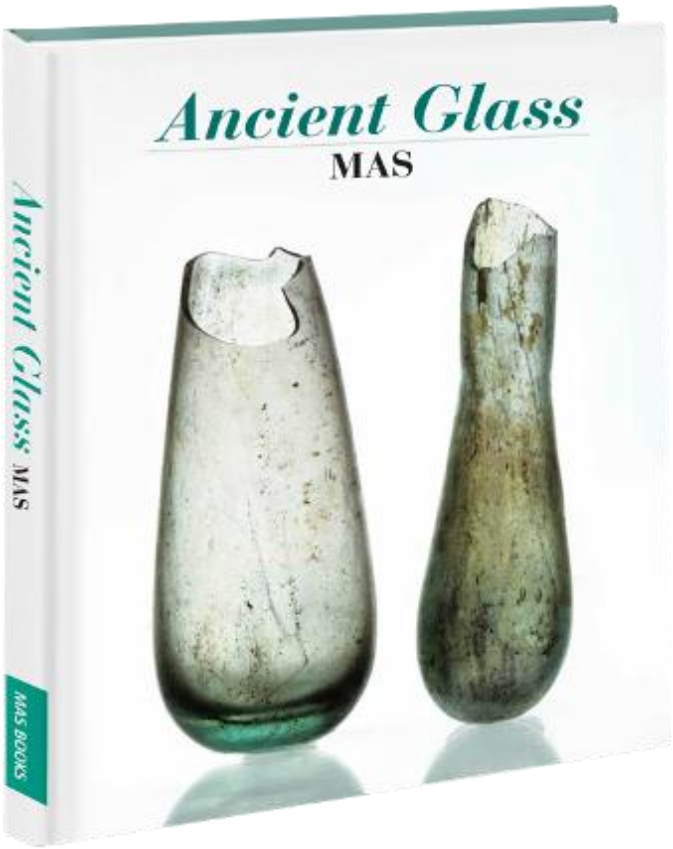
NEW PUBLICATIONS

Ancient Glass at MAS



The ancient glass collection is one of the hidden gems at the MAS (Antwerp, Belgium). It is part of a valuable glass collection numbering nearly 700 objects and is on a par with other international collections of glass. Now, for the first time, the subcollection of ancient glass is published in this comprehensive catalogue.

The ancient glass collection held at the MAS contains along-side more conventional objects, such as Roman toiletry items, some quite remarkable pieces that appear only rarely in international collections. The collection of approximately 150 ancient objects provides a historical outline of fragile Roman, Merovingian, Byzantine and Early Arabian glass tableware. The catalogue also includes some jewellery and a few modern replica pieces of ancient glass. Each object is described in detail and illustrated with high quality photographs. A section has been added at the end of the catalogue providing archaeological drawings.

A richly illustrated introductory chapter about the history of the MAS collection and of the institution itself illuminates how the glass collection has grown to become the extensive collection that we see today. On the one hand the ancient glass collection is made up of archaeological glassware collected from the Antwerp region, while on the other it owes itself to the acquisition of European and Mediterranean glass collections put together by collectors from Antwerp. The authors are Dr Peter Cosyns (Vrije Universiteit Brussel), Dr Eugène Warmenbol (Université Libre de Bruxelles) and Annemie De Vos, former curator of the Vleeshuis collection of the MAS.

This catalogue is intended for lovers of glassware and scholars alike. Moreover, just as in the past, museum collections were deliberately put on display for the artistic instruction of painters, sculptors and craftsmen. And also today, we are inviting practising artists to take inspiration from this exceptional collection.

*Price: **45 euro***

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