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Glass News

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The Association for the History of Glass Ltd is a charity which exists to advance the education of the public in the historical, archaeological, aesthetic and technological study of glass for all periods of history and all parts of the world together with the problems of conservation and presentation in museums and universities. To these ends its activities include the organisation of conferences and meetings, provision of grants to support scholarly work, and it publishes Glass News and occasional volumes on ancient and historical glass.

Membership of the AHG is currently £15.00 per annum and is open to all interested individuals. It is available through our website www.historyofglass.org.uk. It includes Glass News, reduced costs to attend events, and access to the resources of the members only area of the AHG website. In addition, we are currently trialling ***The Glass Intelligence***, an email bulletin which goes out to members several times per year providing information about current exhibitions, forthcoming conferences, and other events.

THOMAS DERRICK

Welcome to the Winter 2025 edition of Glass News, the magazine of the Association for the History of Glass. This is our 54th issue since 1996. You may have noticed we underwent a rebrand/visual update in Issue 53. We hoped to improve the visual appeal and readability of Glass News, and we would appreciate any feedback you may have. We are continuing to publish two issues a year: the winter edition (at the beginning of the year) and the summer edition later in the year. Firstly, two issues a year represent good value for our membership. We also feel this allows our members to stay more in touch with events, which are sometimes advertised with a shorter deadline. Our newly launched Glass Intelligence email newsletter also aims to keep you better informed; if you are a member and have not received that, please check your junk folder. Please consider joining if you are not a member and wish to receive the Glass Intelligence and Glass News (the most recent three issues are hosted in our member area only).

This issue has a wide range of interesting articles, from grant reports related to projects on Ancient Egyptian jewellery and ancient glass composition to a report of a new find of a Roman cinerary urn in Lincolnshire and fascinating experiments with glass weathering. Board members also review the latest Study Days event in Venice and ancient glass collections and art exhibitions in Australia. We also have a conversation article on using antimony in ancient glassmaking. We have been trialling this format for the last few issues; if you like this type of article, please let us know!

As our President and Editorial Director, Ian Freestone, mentioned in the last editorial, we would like to publish short research articles as well as summaries of research findings published (in greater length) in specialist journals that you think would interest our readership. We are interested in content from people of all career levels, and we would be delighted to work with early-career researchers and postgraduate students to publish preliminary work. We frequently hear from our board members in Glass News, but we would also like to expand our range of contributors. Did you receive a grant for a new project? Just publish a paper and are willing to write a summary? Do you want to put something into our Events and Notices section? Please get in touch with me if you have any ideas for content for Glass News, and I would be happy to explore those with you (tjderrick@gmail.com).

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AHG CALL FOR PAPERS

'GLASS IN ARCHITECTURE AND CONSTRUCTION IN THE ANCIENT AND HISTORICAL WORLDS'

FRIDAY 16 MAY 2025
IOE, LONDON

We look forward to welcoming you to our next meeting, which will be held at the IOE (UCL Faculty of Education), Bedford Way, London. Proposals for presentations and any queries should be sent to the organisers at events@historyofglass.org.uk. More details about the speakers and the times will be posted on our website soon.

AHG GRANTS BUDGET INCREASED

Due to our members' continued support, we have increased our Grants budget by half for 2024/25! We are moving from a total of £2,000 to £3,000 to support research, projects, and activities to advance the study of the history of glass. This includes supporting you to attend events like those on this page. Applications are always open, and details can be found here:
https://historyofglass.org.uk/grants/

23RD CONGRESS OF AIHV UPDATE

8 - 12 SEPTEMBER 2025
MAINZ, GERMANY

The AIHV has recently confirmed that the 23rd Congress of the International Association for the History of Glass will take place on 8th - 12th September 2025 and will be hosted by the Leibniz-Zentrum für Archäologie (LEIZA) in Mainz, Germany. The organising committee will share specific dates and arrangements in due course.

AIHV WEBSITE UPGRADE

Following downtime caused by a hack, the AIHV has updated their website (htps://aihv.org), and the board have encouraged people to keep an eye on the "News Section" and to contribute relevant items.

AFAV CONFERENCE, SAINT-ALBAN-AURIOLLES, FRANCE

11 - 14 SEPTEMBER 2025

From 11 to 14 September, Association Française Pour L'archéologie Du Verre is hosting a conference at the Archéosite d'Ardèche Randa Ardesca (Saint-Alban-Auriolles), to mark 40 years of AFAV and the 1st International Festival of Archaeological Glass.

CONFERENCE

'GLASS LINKS BETWEEN TRADITION AND INNOVATION'

10 - 12 APRIL 2025
NOVO MESTO, SLOVENIA

The conference is organized by the Dolenjski muzej Novo Mesto as part of the Glass Experience project, the purpose of which is to present and evaluate modern research on glass products from prehistory to the present day.

The conference themes include:

- Glass as a Raw Material (production technology, raw materials, glass workshops, trade).

- Glass Products through Time (diversity of glass products, characteristics of glass products in different periods, representation of glass products in collections).

- Conservation and Interdisciplinary Research (conservation, restoration, prevalence and significance today, archaeometry).

To participate, contact petra.stipancic@dolenjskimuzej.si. The deadline to submit an abstract to deliver a paper in English is 15 February 2025 (which may be tight for readers of this edition). The team requires a title, five keywords, and a 300-word abstract for a 20-minute paper. The proceedings will be published via e-book.

STUDY DAYS ON VENETIAN GLASS

'VENETIAN GLASS IN FRANCE AND ENGLAND AND ITS INFLUENCE IN THEIR GLASS PRODUCTION'

16 - 18 SEPTEMBER 2025
VENICE, ITALY

The 'Study Days on Venetian Glass' are an opportunity for the in-depth study of Venetian glass and are geared towards an audience of glass scholars, museum curators, conservators, scientists and collectors.

The program includes lectures by art historians and glass experts. All the participants are invited to present the results of their studies and research on this subject. Every lecture is followed by a discussion. Lectures and discussions will be held in English.

This event, organised by the Istituto Veneto di Scienze, Lettere ed Arti, is an annual event. See Higgott (this issue) for an account of the most recent Study Days event. The enrollment fee is €300, and applications to attend (along with a CV highlighting your interest and any relevant work) should be sent to laura.padoan@istitutoveneto.it by 9 May 2025, at the latest. Places are limited to 30.

AHG GRANT REPORT: EAR STUDS, EAR PLUGS OR BEADS?

ANNA K. HODGKINSON

EAR STUDS, EAR PLUGS OR BEADS?

AHG GRANT REPORT

In May 2024, I attended the AHG spring study day 'GlassWEAR: Glass in Jewellery' in London, at which I had been invited to present a paper entitled: 'Ear studs, ear plugs or beads? Reinterpreting a group of personal glass ornaments from New Kingdom Egypt'. My aim was to present a fresh perspective on some fairly common pieces of glass jewellery dating to the Egyptian New Kingdom (1550-1069 BCE) in the collection of the British Museum (Figure 1), and to question antiquated interpretations of this material, arriving at a possible new interpretation for these objects.

The items in question appear in virtually all museum collections that hold Egyptian material, and they are commonly referred to as 'glass ear plugs' or '-studs'. This is due to the fact that they are similar – but not equal – in size and shape to the contemporary domed, mushroom-shaped ear studs in other materials (stone, faience). While ear jewellery was worn by both the elite and royalty in New Kingdom Egypt, the objects in focus were narrower and flat-fronted in comparison with the ear studs depicted in tombs or on sculpture (see Figure 2). If they were not obtained through the antiquities market (they are small and colourful and therefore desirable), they were excavated at settlement sites, mainly in domestic contexts.

The glass objects were made by lamp-working and shaped on a mandrel, evidenced by the perforation through the length of their shaft. They display a flat-fronted disc instead of a 'dome', with a frontal aperture (Figure 3). The shaft is usually – but not always – decorated with a spiral in a contrasting colour (the most common type being a blue

***Figure 1**: Overview of the glass objects in focus in the collection of the British Museum. Photo: Anna K. Hodgkinson. © The Trustees of the British Museum.*

Figure 2: *(Left) Lady Mi, ca. 1390–1353 B.C.E. Wood, bone?, gold leaf, 6 1/8 x 1 3/4 x 2 1/4 in. (15.6 x 4.4 x 5.7 cm). Brooklyn Museum, Charles Edwin Wilbour Fund, 47.120.3. Creative Commons-BY (Photo: Brooklyn Museum).*

Figure 3: *(Right) The 'anatomy' of the glass objects: side, front and rear (or top and bottom) views, based on British Museum EA 16446. Photo: Anna K. Hodgkinson. © The Trustees of the British Museum.*

base with white spiral decoration and a yellow coil around the base and rim of the disc). The frontal aperture appears to be intentional and could easily have been avoided by manufacturing the object towards the tip of the mandrel and sealing the hole. This somewhat unsightly aperture, together with the fact that the decorated shaft would have disappeared below a wig, makes me believe that these items were not worked through the ear lobe.

When examining the literature on these items, it becomes evident that the objects in question were initially understood as a type of bead. Petrie, in his volume Amulets, for instance, groups them with the 'papyrus-sceptre amulets' of faience, most of which date to the Late Period (664-

Figure 4: *(Left) Statue of Anen, second priest of Amun. Note the vertically-strung beads on the kilt of the statue. Granodiorite, from Thebes, reign of Amenhotep III. Museo Egizio, Turin, Cat. 1377. Public domain.*

Figure 5: *(Right) Papyrus-column amulet. Faience, from Egypt. New Kingdom – Ptolemaic Period. Metropolitan Museum of Art, New York, inv. no. 10.130.1818. Gift of Helen Miller Gould, 1910.*

332 BCE). These protective amulets mostly appear in burial contexts, and they are solid, with a suspension loop, although somewhat similar in shape to the objects in question. This interpretation can also be found in the excavation records from the site of Amarna (Middle Egypt) from the 1920s and 30s. In 1976, John Cooney, in his catalogue of British Museum glass, named these items 'ear-plugs of papyrus-column form': this designation appears to have stuck and can be found throughout later literature.

If not ear jewellery, what then may these glass objects have represented and how may they have been used? The problem is that we are lacking depictions of glass objects and glass manufacturing processes from ancient Egypt. Therefore, we must proceed with caution.

One possibility is that they were used as beads, strung vertically or horizontally to display the decorated shaft, possibly on a garment such as a kilt: when the wearer moved, the bead chains would have rattled, evoking the sound of the papyrus marshes of the Egyptian Delta and the associated deities (see Figure 4). The objects may also have been threaded into wigs, evoking the same effect.

Finally, there is also the possibility that the objects in question were in fact precursors of the aforementioned papyrus-column amulets: the latter are mentioned in the Egyptian Book of the Dead and were to be worn around one's throat as protective amulets (Figure 5). Since the archaeological record only presents us with individual finds, mainly from domestic contexts, it is possible that the glass objects were worn during the lifetime of the owner. Other protective amulets in glass exist from the period, and it is not completely impossible that this was their function.

In summary, it is impossible to tell for certain what the function and purpose of these glass objects was. However, I hope that I have been able to stress the importance of questioning old interpretations of (common) objects!

My conference attendance was made possible by an AHG grant, for which I am very grateful. I would also like to thank Daniela Rosenow, Eleonora Montanari, and Ana Franjić for their kind invitation to the Study Day. I am grateful to the Trustees of the British Museum and Marcel Marée for their permission to include the images of the objects here.

References:

The initial research on this topic was carried out during a fellowship at the British Museum in 2014 and resulted in the following publication:

Hodgkinson, Anna K. Ear Studs, Ear Plugs or Beads? Reinterpreting a Group of Glass Objects from New Kingdom Egypt. London: Nicanor Books, 2021.

Cooney, John D. Catalogue of Egyptian Antiquities in the British Museum: IV Glass. London: British Museum, 1976.

Petrie, William M. Flinders. Amulets. London: Constable & Co. Ltd., 1914.

See https://www.flickr.com/photos/egyptexplorationsociety/albums for various albums containing the scanned object cards of the 1920s and 1930s excavations at Amarna (accessed 10 July 2024).

LIAM RICHARDS

UNIVERSITY COLLEGE LONDON

GRANT REPORT ON ATTENDING THE XVIII CONFERENCE OF THE EUROPEAN CERAMIC SOCIETY, LYON, FRANCE, 2-6 JULY 2023

AHG GRANT REPORT

This conference was mostly about current ceramic and glass technology, but there was a special session that ran over the course of one day that was specifically about cultural heritage and art. However, most of the presentations were more technical than mine, the majority based in the subjects of conservation science and archaeological science. I had not attended a conference this focused on the materials science aspect of the field, and it was eye-opening to see the high-tech methods used in various institutions. Methods using photoluminescence and X-ray absorption spectroscopy were very interesting, and the use of novel techniques to both monitor museum environments and protect glass from degradation intrigued me. It was also constructive to have a discussion with other researchers about the techniques we use for analysis, and hear their feedback on my presentation, giving me interesting ideas to help address unanswered questions I had.

The oral presentation I gave was on the composition of Roman mosaic glass found within a roughly 100-year time-period in the early Roman Empire. The vessels were made by fusing coloured glass into a flat disc, and then placed over a ceramic mould and put back in the furnace, causing the glass to slump over the ceramic mould into the desired form (Figure 6). My presentation went into detail about the colours found,

Figure 6: *Positioning of a polychrome glass disc over a hemispherical former before slumping in a wood-fired furnace to form a bowl. Experiment by Mark Taylor and David Hill (for similar see Roman Glassmakers Newsletter 6) (Photo: Ian Freestone).*

and how the base glass composition correlated to colour; translucent colours were almost exclusively made from Levantine glass, whereas opaque colours were mainly made from Egyptian glass. Further, opaque red glass belonged to one of two subgroups of Egyptian glass, whereas opaque yellow glass appeared to be mainly made of the other Egyptian subgroup. Opaque red glass could be further sub-divided on the basis of the technique used to reduce copper oxide to copper metal. Furthermore, opaque yellow glass also occurred as two groups with high lead and high antimony on the one hand, and low lead and antimony on the other. These two groups also exhibited different PbO/Bi and PbO/Ag ratios. This suggests there was more than one technique used to make opaque yellow glass. The questions I received after the presentation were very helpful and constructive, pointing me towards possible explanations for some of the unanswered questions that I still had.

I also presented a poster about method optimisation for the analysis of ancient glass using LA-ICP-MS. There are many different operating parameters for LA-ICP-MS reported in the literature. The research presented explored the optimal repetition rate and laser power to maximise sensitivity (i.e. to detect elements in very low amounts) while minimising elemental fractionation (hence the accuracy of the analysis). Using a lower laser power is advised, as it reduces fractionation without noticeably affecting results. These tests enabled me to select the best conditions for my analyses.

Figure 7: *The largest venue at the conference (Photo: Sébastien Ferraro - https://www.ecers2023.org/)*

SALLY COTTAM

A GLASS CINERARY URN FROM LINCOLNSHIRE

A fascinating presentation on Roman glass cinerary urns by Lucy Halfacre at our autumn 2024 meeting (A Fresh Batch: Current Research in Ancient and Historical Glass) prompted me to revisit an example from Lincolnshire, discovered during excavations by PCAS Archaeology Ltd in 2020, with which readers of Glass News may not be familiar. The vessel contained an adult cremation and was found in a pit within a ditched enclosure in the village of Burton by Lincoln. A suspected villa site has been identified nearby. More details of the excavation, which was undertaken in advance of construction work, can be found in the Archaeology Data Service Archive report.

This large pale green vessel had broken into 230 fragments, and it was not possible to restore it completely. Most of the rim, part of the neck, one of the two handles, and part of the body were missing, but although incomplete, it could be identified as a globular jar 32.5cm high (Figure 8). The rim was folded horizontally, and the neck expanded out gradually to a wide convex body in places only 1mm thick. It had a pushed-in base ring and a low concave base. The surviving handle was M-shaped (Figure 9) and had been applied to the upper body on the left and then drawn up vertically, bent to the right and down, and re-attached to the upper body. The centre of the handle had been pulled down to

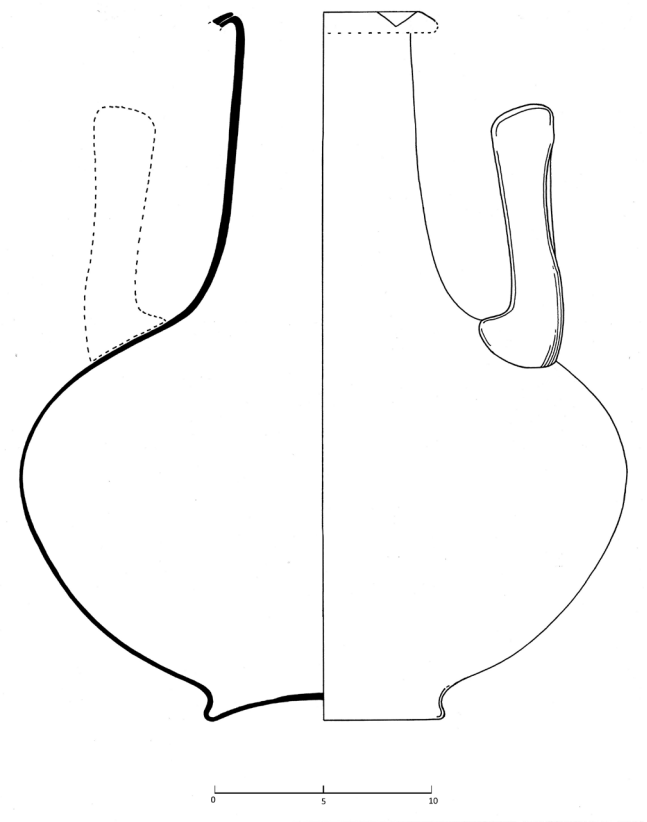

Figure 8: *The Burton by Lincoln cinerary urn (Image [and all images in this article]: S. Cottam).*

meet the body and then manipulated with a tool into two square-ended loops. The two handles would have sat opposite each other on either side of the upper body.

Cinerary urns with these M-shaped handles occur in Roman Britain and in other parts of the Roman world, including France, the Rhineland, Switzerland, Italy, Spain, and Algeria (Morin-Jean 1913 type 2; Isings 1957 form 63; Price and Cottam 1998, 138–140 type i). Closely dated examples are scarce, though they appear to have been mainly used in the later 1st and 2nd centuries. An urn from the tomb of Obellius Firmus at the Porta Nola, Pompeii, indicates that vessels with M-shaped handles were produced before 79 CE (Scatozza Höricht 2012, 249–250, no.17052, tav.LXVI). The Pompeii urn and others from the Mediterranean region differ from the Burton vessel in that they have a funnel neck and rolled-in rim. The form illustrated by Isings, with a folded rim and expanding conical neck (to which the Burton urn closely corresponds), is generally associated with the north-western regions of the Roman world, and several are known from Britain. It should be noted that the funnel-mouthed variety also occurs in Britain, as demonstrated by urns from Colchester Museum (COLEM: JOS.31) and the Museum of London (2241/1), which have funnel mouths and smaller rounded M-shaped handles.

Perhaps the closest in form to the Burton vessel amongst the examples from Britain is a complete urn with a horizontal folded rim and a pushed-in base ring found with an accompanying glass lid at Old Newton near Stowmarket in Suffolk and now in the British Museum (Low 1907/9, Plate A; BM acc. no.1912,0528.1). This, too, has a simple folded rim and M-shaped handles, which have been tooled into a slightly squared profile at the top of the loops, very similar to the handle on the Burton vessel. The urn from Low Newton has an accompanying glass lid, and whilst no glass lid was found with the Burton vessel, it may have had a covering

Figure 9: *(Top) The M-shaped handle of the Burton by Lincoln cinerary urn.*

Figure 10: *(Bottom) The pieced together body of the Burton by Lincoln cinerary urn.*

made from organic material, such as cloth. Also similar in form, though slightly smaller, is an urn originally from Upchurch in Kent but now in the Saffron Walden Museum in Essex, which has a folded rim and looped handles with a squared profile (Figure 11), though there is no further information about the burial from which it came. Another large urn with M-shaped handles and a similar profile, differing only in the rim form, was found in a stone cist at Southfleet near Gravesend in Kent in the early 19th century and is also now in the British Museum (Harden 1987, 96 no.38; BM acc. no.1836,0213.18). None of these vessels are closely dated, though the Old Newton urn was found with other glass vessels of the 1st and early 2nd centuries CE, and Samian pottery from the Southfleet burial has been dated to the Antonine period.

The glass vessels most frequently found containing ashes in Romano-British burials are the cylindrical and square bottles more commonly used as household containers in the 1st and 2nd centuries CE and occasionally re-used as cinerary urns. The body of the Burton vessel was in parts very thin-walled, suggesting that it may have been expressly designed as a cinerary urn as it would have been vulnerable to breakage if used as a household storage jar. The lack of wear on the edge of the base ring also indicates that it had probably not been used day-to-day before burial. The acquisition of a vessel that was probably designed specifically for a funerary purpose suggests a degree of attention and investment being afforded to this burial. Other similar cinerary urns, however, do show signs of wear. For example, the urn from Low Newton, which is equally thin-walled in places, has wear on the base edge and horizontal scratch marks around the neck. The biography of these vessels before burial is intriguing and probably varied according to different burial rituals and the material resources of the participants.

Figure 11: *The cinerary urn from Upchurch, Kent (now in the Saffron Walden Museum, Essex).*

Whilst cremations in glass vessels are known throughout Roman Britain, they are relatively rare in Lincolnshire. A complete glass cinerary jar without handles was found in a stone chest in the late 18th century at Ashby Puerorum, near Horncastle (Banks 1796), and a square bottle containing a cremation was found east of Lincoln in 1790 (Pownall 1789, pl.XXXIII, nos.3–5). Another glass cinerary urn with a lid was found at Rauceby near Sleaford in 1935 and is now in

the Macquarie University History Museum (thanks to Glass News Editor-in-Chief Thomas Derrick for this information; MU4177). However, the Burton urn appears to be the only example of the form with M-shaped handles so far known in Lincolnshire and extends its geographical range slightly further north.

Find out more

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CONVERSATION ABOUT ANTIMONY IN ANCIENT GLASS

IAN FREESTONE

IN CONVERSATION WITH PATRICK DEGRYSE ABOUT ANTIMONY IN ANCIENT GLASS

Antimony was the magic ingredient of much ancient glass from the Late Bronze Age to the Roman period. It was used to make the compounds calcium and lead antimonate, responsible for the opaque colours in many early glasses, and later also as a decolouriser in clear transparent glass. Only recently have the origins of the antimony used in ancient glass begun to be understood, mainly thanks to isotopic research undertaken in Belgium by the research group of Patrick Degryse and colleagues such as Andrew Shortland of Cranfield University.

Professor Dr. Patrick Degryse is head of the Department of Earth and Environmental Sciences at KU Leuven, where he is also director of the Centre for Archaeological Sciences (CAS). He is also Chair of the Standing Committee of the International Symposium on Archaeometry. His research focuses on the exploitation and use of industrial minerals and ores in ancient times. He is particularly well known for his work involving isotopic studies of ancient glass, which, for example, underpins our understanding of the long-distance trade between primary glass production in the southeastern Mediterranean and the regions that formed the Roman Empire.

Below, we discuss some recent work on antimony (Sb) and its implications with Professor Degryse.

IF: *Patrick, you trained as a geologist and still work in a geology department. How and when did you become involved in archaeology and archaeological glass?*

PD: When the time came to choose a master thesis subject, we had to apply to a research group which then presented a number of topics. Research which required fieldwork abroad was always popular… I applied for a thesis involving climate reconstruction from stable isotopic analysis of travertine deposits, which required mapping and sampling in the territory of ancient Sagalassos, already then a long-running cooperation between the Geology division and the archaeologists of KU Leuven in Turkey. By sheer coincidence, a PhD position came up when I finished my master's, so I got the opportunity to explore the mineral resources of the territory of Sagalassos. After that, I did a von Humboldt postdoc in geochemistry applied to archaeological materials in the isotope laboratory of the University of Giessen in Germany, and there was no way back from archaeological science after that!

IF: *How common are antimony deposits compared to (say) lead or copper, and in what form does antimony occur?*

PD: Antimony deposits are significantly less common than those of lead and copper. Antimony most commonly occurs as the mineral stibnite or

antimony sulphide, although it can occur as a native mineral and as other, less common minerals.

IF: *From time to time, it has been suggested in the literature that a potential source of the lead antimonate in opaque yellow glass was the mineral bindheimite [$Pb_2Sb_2O_{6.75}(OH)_{0.25}$]. Do you think that this is a likely possibility?*

PD: It is not realistic; bindheimite is a very rare and dispersed product in lead-antimony sulphide deposits. Lead antimonate was much more likely produced by the craftsmen who would have mixed lead and antimony and heated them to high temperatures.

IF: *So, is the source of all antimony used in glass likely to have been stibnite ore?*

PD: Yes, but although it is rare, we cannot exclude the possibility of native antimony metal being used in some cases.

IF: *Where do you think that the impetus to use antimony came from? Was it used in metalwork in the ancient world?*

PD: In metallic form, antimony was used in jewellery and decorative artefacts, although it may not have been recognised as a separate metal; rather, it was confused with lead. The co-occurrence of copper and antimony in some ores, often combined with arsenic, seems to have led to the production of copper antimony alloys, which have a shiny golden appearance.

IF: *How can you tell where the source of antimony used in glass was?*

PD: Different ore-forming processes lead to different isotopic compositions of stibnite deposits in terms of the $^{123}Sb/^{121}Sb$ ratio in these minerals, and our work has been directed towards mapping the differences between known deposits to then compare to archaeological glass and metal. However, using this isotopic ratio is not straightforward. The isotopes fractionate (i.e., the ratio changes) during laboratory measurement and (ancient) technological processes such as smelting. Therefore, we have had to model this process and determine the magnitude and direction of these effects to allow for them to be corrected.

IF: *This makes the work difficult for archaeologists because it makes the papers complex and difficult to critique. Do you think you have these "corrections" sorted out sufficiently to come to some conclusions about the origins of antimony?*

PD: It took quite some time to understand this process. Subsequently, we waited for our experiments to be confirmed by other labs to make sure our archaeological interpretations, which we always presented with the necessary disclaimer, were valid. Now, it seems that other labs do come to a similar fractionation. Nevertheless, I'm not certain what would happen to the antimony isotopic signature of glass that is repeatedly melted, say in recycling… For the moment, our initial interpretations appear to remain valid, but I'd feel more comfortable if more laboratories would actually do antimony isotopes on ancient glass. Keeping all this in mind, we still think LBA glass has an isotopic signature that points to the use of stibnite matching only a Caucasian source. In contrast, Iron Age and Greco-Roman glass have an antimony isotopic signature that can match a few sources in Europe besides the Caucasus. Combining antimony isotopes with lead isotopes, it appears that sources in Spain and Roman Dacia are the most likely mining sites exploited in the later period.

IF: *Any idea as to when the change from the source in the Caucasus to the source in Dacia occurred?*

Figure 12: *Late Bronze Age Egyptian vessel, Freer Gallery of Art (Washington D.C.) (Photo: Ian Freestone).*

PD: Alas, the number of analyses performed so far is not that high. If we could do many more samples of pristine glass from well-dated contexts that we think have not been mixed or recycled, perhaps a better resolution could be obtained. However, as long as there's no absolute certainty over the corrections to apply for fractionation following the ancient glass-making process, I would say we better focus on that aspect first.

IF: *Was the antimony used by the Romans in colourless glass the same as that used in opaque yellow and white glasses? It looks as if the use of antimony for both purposes dried up in the fourth century CE. Why do you think this was the case?*

PD: We see a remarkable difference between the isotopic composition of, on the one hand, LBA glass and, on the other hand, Iron Age opaque and Greco-Roman translucent glass. Within those two groups, in the LBA, both Egyptian and Mesopotamian LBA glass, and in the Greco-Roman period, the opaque strong-coloured and antimony decoloured glasses are identical in compositional range.

However, the latter group has a much wider range. We've suggested that the loss of antimony sources, in particular the rich stibnite deposits of Dacia, may have contributed to or even been the cause of a change in glass decolouring technology in the 4th century when the use of antimony appears to cease.

IF: *The "invention" of glass making is conventionally considered to have been in Mesopotamia. Was antimony an important factor in the innovation, and was the proximity to the Georgian antimony source likely to have been a factor?*

PD: I believe the jury is still out on who was first: Egypt or Mesopotamia. However, as it seems from the isotopes, they both used Caucasian stibnite, of which the deposits are simply much closer to Mesopotamia. Conversely, Egyptian glass making is simply better developed and much more standardised for the materials and period we've looked at, so I wouldn't want to place any bets.

IF: *Where would you like to see the work on antimony sources continue, and what barriers do you face in taking it forward?*

PD: The number of laboratories involved is too low, and I'm rather pessimistic about the near future. Once the idea is out there and published, not many funding bodies will find a 'more thorough check' an interesting type of research. There's also the question of how far we can push the method to answer new, relevant archaeological research questions.

IF: *Patrick, many thanks for talking to Glass News and generously sharing your thoughts with us.*

Find out more

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Lobo, L., Degryse, P., Shortland, A., Vanhaecke, F. (2013). Isotopic analysis of antimony using multi-collector ICP-mass spectrometry for provenance determination of Roman glass. Journal of Analytical Atomic Spectrometry 28 (8): 1213–1219. https://doi.org/10.1039/c3ja50018g.

GLASS DOWN UNDER: AUSTRALIA

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GLASS DOWN UNDER - ANCIENT MEDITERRANEAN AND MODERN ART IN AUSTRALIA

While a whole hemisphere apart from the geographical location of most of our members, Australia has powerful connections with Britain. A strong and continuing desire to collect (and therefore import) antiquities relating to the ancient Mediterranean world followed the British colonisation of Australia in the late 18th century. This piece is intended to share some knowledge with our readership about glass collections and recent exhibitions in Australia—but with a focus on ancient glass (mainly due to the author's research interests!).

Recent exhibitions in Sydney and Canberra

Consuelo Cavaniglia – seeing through you (Chau Chak Wing Museum, Sydney)

An exhibition at the Chau Chak Wing Museum (University of Sydney) of the work of Consuelo Cavaniglia, entitled "seeing through you", opened in August 2024 and is set to run until 23 March 2025. Consuelo, an Australian glass artist and graduate of the Sydney College of the Arts (University of Sydney), has previously exhibited work throughout Australia, with solo exhibitions at Perth Institute for Contemporary Arts, Gertrude Contemporary (Melbourne), and University of NSW Galleries (Sydney). Cavaniglia's work is housed principally in the Penelope Gallery at the museum and is joined by artworks from the Museum's collections by Lily Greenham (1924-2001) and Martha Boto (1925-2004). Installations have also been placed on glass surfaces around the museum to alter light and, therefore, the perception of spaces and the display of existing collections. A panel discussion, convened

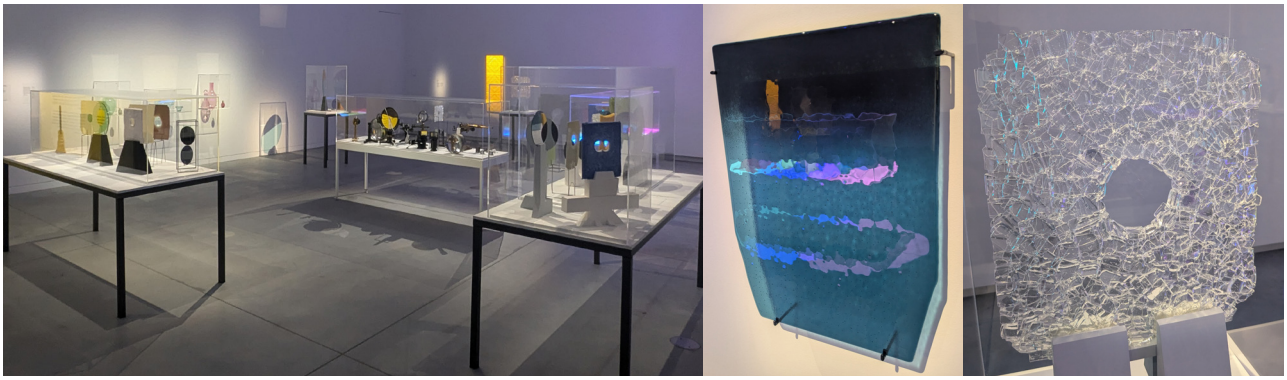


Figure 13: *(Left) The Penelope Gallery with Consuelo Cavaniglia's exhibition – "seeing through you", Chau Chak Wing Museum (Photo [and all images in this article]: T. Derrick).*

Figure 14: *(Middle) Untitled kiln-formed bubbly flat glass, reflecting light from the other exhibits (reminiscent of early Roman window glass – author's opinion).*

Figure 15: *(Right) Untitled piece of kiln-formed colourless glass with a central aperture.*

by the exhibition's curator, Katrina Liberiou, and titled "The Lens of Perception: A Panel Discussion on Glass", was held in November, when Consuelo was joined by glass artists Prof. Andrew Lavery and Bronte Cormican-Jones, as well as me (to share insights about ancient Graeco-Roman glassworking).

While I am sure that many of our members are interested in glass art, I wanted to focus on some of Cavaniglia's reactions to historical glass from the Chau Chak Wing Museum's collection, within "seeing through you". Entitled "shadows (three shadows for three objects)", three hand-blown glass parts are inspired by, and displayed alongside, three ancient/antique vessels. The first object, a Roman 'collar-rim bowl' (NM54.11) (Figure 16), was donated to the Nicholson Museum in 1954 by Dr Kurt von Stutterheim (a German journalist and author who was interned in Australia during World War II and went on to teach at the University of Sydney). The provenance of this very unusual vessel is only given as the "Mediterranean region", and a very loose date of AD 100-400 is shown on the label.

The second is an 'iridescent bottle' of unknown date excavated in London in the 1850s, which was donated in 1860 by Sir Charles Nicholson (NMR.1227.43 and Figure 17), who was a founding member of the University of Sydney, upon the foundation of the Nicholson Museum (which was dissolved in 2020, the collection subsequently forming a key part of the present Chau Chak Wing Museum). The third and most recent of the inspirational artefacts is a Neker Glass Studio bottle with an iridescent pink/purple finish, which was donated to the Nicholson Museum in 2014 by the estate of Cynthia Mary Archibald de Quincey (NM2014.427 and Figure 18).

Figure 16: *(Left) A Roman 'collar-rim bowl' (NM54.11) and its 'shadow'.*

Figure 17: *(Middle) An iridescent container of indeterminate age (but pre-1850s) from London and its 'shadow'.*

Figure 18: *(Right) A Neker Glass Studio (Israel) vessel and its 'shadow'.*

Pompeii – Inside a lost city (National Museum of Australia, Canberra)

Opened in December 2024, and running until 4 May 2025, is a new and innovative exhibition of material from the ancient city of Pompeii, comprising 90 objects. Although there have been exhibitions on Pompeii in Australia before, this is the first to be housed in the nation's capital city. Through audiovisual effects (including an immersive volcanic eruption sequence), the audience is transported to Pompeii as it was and Pompeii as it is now. Pompeii (and Herculaneum) are a crucial part of high school syllabi in many parts of Australia for those studying Ancient History, and this exhibition is a vital experience for those who are unable to visit the site in Italy.

Figure 19: *The entrance to Pompeii – Inside A Lost City, National Museum of Australia, Canberra.*

The main reason for mentioning this exhibition in Glass News, however, is the transportation from Campania to Canberra of two remarkable large 1st-century BCE-early 1st-century CE cameo glass furniture settings excavated in 1960 near the House of Marcus Fabius Rufus (Regio VII, Insula XVI). These two plaques (Parco Archeologico di Pompeii 13109 and 13110) feature scenes depicting Ariadne, the daughter of King Minos, and Bacchus, the god of wine, in a dark (appearing black) glass with white glass in relief. One (Figure 20) shows Bacchus (L) watching Ariadne (R), abandoned by the heroic Theseus. The second (Figure 21) has Ariadne reclining (central). At the same time,

Figure 20: *(Left) Cameo glass plaque from Pompeii with (L to R) Bacchus, a cupid, a fawn, a cupid, and Ariadne.*

Figure 21: *(Right) Cameo glass plaque from Pompeii with (L to R) Silenus, a cupid, Ariadne, a servant/maenad.*

a woman pours her a cup of wine (R), and to the side is an older male figure (presumably Silenus, satyr, companion, and tutor to Bacchus - L). Although we cannot be sure that these plaques were integral to furniture in the house of Marcus Fabius Rufus (a large house with sea views), they were likely highly prized adornments. While not entirely complete, a large portion of the decorative scheme remains.

While there are also some small unguentaria (perfume vessels) and a square bottle among the exhibits, it was these plaques that (for me) stole the show. They were placed on the central thoroughfare of the exhibition, where many of the items perceived as luxurious were located (as was the viewing gallery for the projection of Vesuvius's eruption, on the back wall of the exhibition). These plaques and their bacchic ornamentation clearly belong within the elite context of wine consumption and revelry. Further details on the iconographic schema of the plaques are described by Ilkka Kuivalainen (2021, 225-227).

Figure 22: *Ancient glass on display – Classics Museum, Australian National University, Canberra.*

Ancient glass in university museums

Many university museums in Australia have ancient glass collections – although predominantly in the country's east. These university museums are the most usual place to see Graeco-Roman antiquities in Australia. Some objects were collected during the earlier colonial period, and others were purchased more recently. Many ancient Mediterranean objects in Australian university museums were purchased as part of teaching collections or for personal collections of antiquities (the latter subsequently donated to museums). These objects were typically acquired from antique dealers in Europe or North America for import to Australia. Provenance research on these ancient glass collections is ongoing, but the histories of the artefacts and the reasons why they came to Australia are deeply interesting for histories of collecting, teaching antiquity, and elite culture in the country.

I came to Australia in July 2023 to work on a large (200+) and significant collection of ancient glass vessels and objects housed at the Macquarie University History Museum on Sydney's north shore, and formed the Ancient Glass Project. Like many university museum collections in Australia, glass objects for this collection (alongside objects in different materials) were primarily bought from antiquities dealers, particularly in the UK and Germany. A significant donation of ancient glass from Dr Janet Gale in 2018, under the Australian Cultural Gifts Program, vastly bolstered the

Figure 23: *Ancient glass on display (temporary installation, ahead of permanent re-display in 2026) – Macquarie University History Museum, Sydney.*

collection both in quantity and quality, particularly with reference to the large quantity of high-quality early-Roman blown glass. The research carried out for the Ancient Glass Project will culminate in a permanent exhibition/re-display of the collection, together with publication of the accompanying research, including scientific analyses.

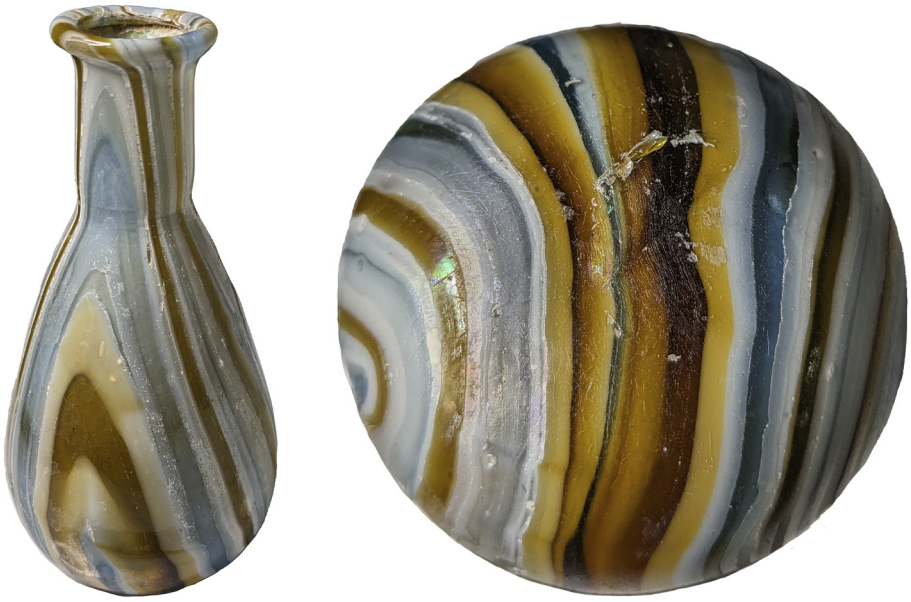
Grose, D.F. (1989) The Toledo Museum of Art - early ancient glass: core-formed, rod-formed, and cast vessels and objects from the late Bronze Age to the early Roman Empire, 1600 B.C. to A.D. 50. New York, Hudson Hills.

Kuivalainen, I. (2021) The Portrayal of Pompeian Bacchus. Commentationes Humanarum Litterarum 140. Helsinki, Societas Scientiarum Fennica.

Non-exhaustive list of museums with ancient Mediterranean glass collections in Australia

New South Wales

Macquarie University History Museum (Sydney, New South Wales)
https://www.mq.edu.au/faculty-of-arts/departments-and-schools/macquarie-university-history-museum



Figures 24 & 25: *Cast and blown colour-band mosaic polychrome unguentarium, with amber, opaque white, and transparent sky-blue glass (Grose 1989, Family VI), early to mid-first century CE. Archaeological provenance unknown. Macquarie University History Museum MU5026 - Donated under the Australian Government's Cultural Gifts Program by Janet Gale 2018.*

Chau Chak Wing Museum, University of Sydney (Sydney, New South Wales)
https://www.sydney.edu.au/museum/discover-our-collections.html

Powerhouse Museum (Sydney, New South Wales)
https://collection.powerhouse.com.au/

The University of New England Museum of Antiquities (UNEMA) (Armidale, New South Wales)
https://www.une.edu.au/info-for/visitors/museums/museum-of-antiquities

Australian Capital Territory

Classics Museum, Australian National University (Canberra, Australian Capital Territory)
https://slll.cass.anu.edu.au/classics-museum

National Gallery of Australia (Canberra, Australian Capital Territory) (although it has several objects on loan [and display] at the Classics Museum at ANU)
https://nga.gov.au/

Queensland

RD Milns Antiquities Museum, University of Queensland (Brisbane, Queensland)
https://antiquities-museum.uq.edu.au/

Abbey Museum of Art and Archaeology (Caboolture, Queensland)
https://abbeymuseum.com.au/collections/

Queensland Museum (Brisbane, Queensland)
https://www.museum.qld.gov.au/collections-and-research

South Australia

Museum of Classical Archaeology, University of Adelaide (Adelaide, South Australia)
https://able.adelaide.edu.au/humanities/the-museum-of-classical-archaeology

Victoria

Potter Museum of Art, University of Melbourne (Melbourne, Victoria)https://art-museum.unimelb.edu.au/collection/the-classics-and-archaeology-collection/

Centre for Ancient Cultures Museum, Monash University (Melbourne, Victoria)
https://bridges.monash.edu/authors/Centre_for_Ancient_Cultures_Museum/11646676

Tasmania

John Elliott Classics Museum, University of Tasmania (Hobart, Tasmania)
https://exhibit.utas.edu.au/s/university-of-tasmania-cultural-collections/page/john-elliott-classics-museum

CAROLINE JACKSON

THE BALLIDON GLASS EXPERIMENT: 50 YEARS ON

Dr Clare Thorpe of the School of Chemical, Materials and Biological Engineering at the University of Sheffield is the latest in a succession of materials scientists who have worked alongside archaeologists to investigate long-term corrosion and changes to glass in a burial environment (Thorpe et al., under review).

More than 50 years ago, sets of glass samples were buried at Ballidon in Derbyshire, which is on the site of a limestone quarry currently owned by Tarmac. The project arose initially from a previous long-term experiment, begun in 1960 at Overton Down, which was designed to study changes in soils, features and artefacts in a typical archaeological bank and ditch earthwork. Selected materials were deposited in the man-made earthwork and the aim was to recover these artefacts over set time intervals to see how they had changed. Unfortunately, at Overton Down no glass samples were deposited, so in 1963 a further experiment, depositing identical multiple sets of 9 model glasses of compositions produced to mimic both archaeological and modern glasses, was initiated in the acidic soil at Wareham in Dorset. In 1970 the scope of the experiment was extended, and identical sets of glasses were deposited in the alkaline soil at Ballidon. This site was chosen because, at the time, it was thought that the alkaline environment would produce a faster rate of corrosion than the acidic environment at Wareham, and so would demonstrate more effectively the chemical resistance of glasses. Whilst the experiment at Wareham has ceased, that at Ballidon is still yielding results.

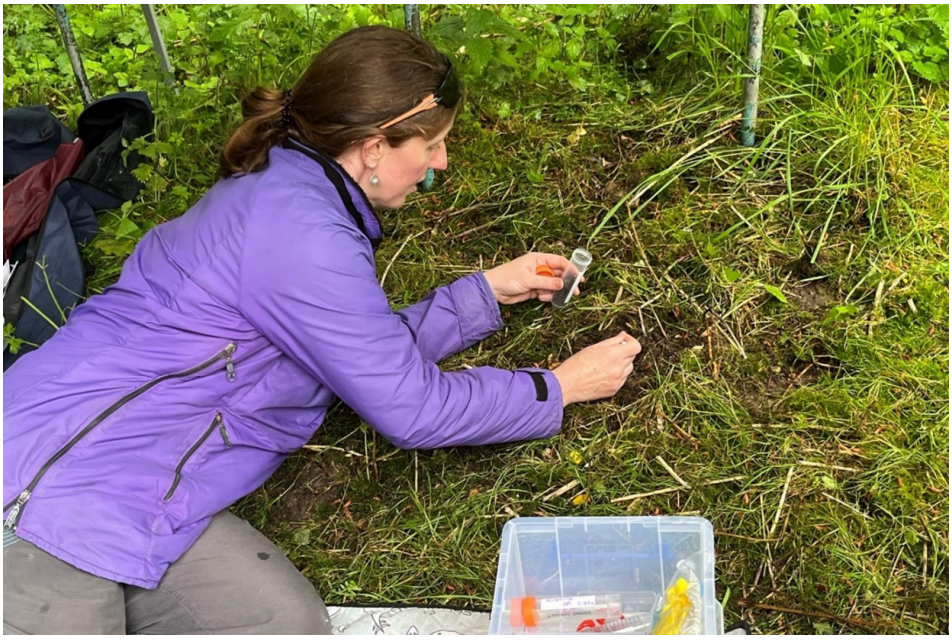


Figure 26: *Dr Clare Thorpe performing initial soil tests at Ballidon (Photo [and all images in this article]: C. Jackson).*

This experiment was designed to run for an ambitious 500 years, with glass samples unearthed at periods of increasing duration. So far, samples from years 1, 2, 4, 8, 16 and 32 have been excavated. The next excavation was scheduled to take place in year 64, but Dr Clare Thorpe obtained funding to enable her to dig the next set of samples in 2022, year 52, because of a renewed interest in glass corrosion which has arisen because of the present practice of burying vitrified nuclear waste for extensive periods of time.

The glasses at Ballidon were buried in a mound of just over 5 m^2 in area and approximately 1m in height. Ten grid sections were marked out with steel poles which each contained 18 glass samples (2 sets). To secure an alkaline environment limestone 'chatter' (small fragments of limestone) were deposited in the mound and a pH of around 9.5 was measured in the soil at the time of burial.

The model glasses deposited were (1) Roman (high sodium and calcium), (2) medieval (high potassium and calcium), (3) medieval linen smoother (low silica), (4) modern polished plate glass (high soda, lime, silica), (5) plate glass as produced (same as [4]), (6) marble (low alkalis, high alumina, boron), (7) borosilicate oven ware (high boron, silica and lime), (8) soda-lime optical glass (high soda, lime, silica), (9) lead ground optical glass (high lead). The samples reflected a range of compositions and surface finishes as both factors affect the degree and rate of degradation.

When sets of the 9 glass surrogates buried in the 1970s were removed in the 1980s and 2000s, other samples were added to the mound. These included ten more 'archaeological' surrogates and a number of nuclear waste glass simulants (without the radioactive waste) from the UK, USA and Russia. The results of the excavations of these later buried glasses have yet to be published.

In 2022 one of the grids was excavated by Dr Clare Thorpe and PhD student Gary Manifold, recovering a set of the 9 original glass samples. Samples of sediment were also taken so that tests, including pH and microbial activity, could be conducted into the burial environment 52 years on from the initial

Figure 27: *Swabbing the surface of the excavated material for further tests.*

deposition (Figures 26 and 27). Climate (temperature and precipitation), which also affects the rate of degradation, was also noted, using a weather station for the 12 months prior to the excavation. The glass samples were relatively small, so the excavation was conducted over two days to make sure the area was excavated carefully and that no samples were lost.

The soil at the time of removal of this sample set averaged pH 8, which was less alkaline than that measured when they were buried. Therefore, the rate of corrosion is likely to be lower now than it was 50 years ago. However, despite initial suggestions that an alkaline environment is more corrosive for glasses, it is now known that an acid environment, such as that at Wareham, provides a much more corrosive substrate than an alkaline one. Microbial swabs of the glass surface demonstrated that the community was comparable to the surrounding substrate and whilst microbial action probably did not directly affect the corrosion rate or effect, it may have contributed to the reduction in pH which would affect the burial environment.

Figure 28: *Bronwen Stone producing a video of the excavation.*

The glass samples were mounted in epoxy resin, polished so that a cross section of the glass and the corrosion layers could be seen, and studied using a range of scientific techniques. Analytical techniques have developed rapidly since the 1970s, so both micro- and nano-scale alteration effects can be observed. This allows a more thorough analysis and a more in-depth assessment of the mechanisms causing the changes in the glass.

Scanning electron microscopy (SEM) was used to produce a high-resolution image which revealed micron-scale changes in composition across the surface. SEM was also used with energy dispersive X-ray analysis for chemical analysis, alongside electron microprobe analysis, which could quantify in more detail the chemical composition of the alteration layers. The samples from Ballidon were compared to pristine samples kept aside in the original experiment. Each pristine sample was partly masked with silicon and exposed to heated deionised water to promote dissolution. Stirred reactor coupon analysis (SCRA) was then performed and dissolution rates calculated.

Burial environment, climate, glass composition and surface finish all play a part in the degree of alteration. The excavated glasses showed variable alteration layer thickness and hence dissolution rates of the glass. The changes mimicked those observed in the laboratory tests. Of the archaeological surrogates, the least durable glass was found to be the linen smoother, which was low in silica but high in alkalis, followed by the medieval glass which was high in potassium. The most durable samples were the Roman and plate glasses, which were soda-lime-silica glasses. The glass with the flame-polished surface (marble) showed no alteration, which was attributed to the reduction in surface defects upon surface melting, which reduced the imperfections that would act as initial 'starter' pockets for corrosion.

The Ballidon glass experiment will continue to be useful from the point of view of glass conservation and treatment. It will also be valuable for enhancing our understanding of the degradation of glasses used for nuclear waste disposal, because the pH in subsurface repositories of nuclear material is likely to be alkaline. The gradual breakdown of the glass together with the dissolution of cementitious material in a geological repository will increase the pH over time.

More detail about the project and the results of the present study can be found in Thorpe et al. (under review) and references therein. A short video of the excavation was produced by Archaeology PhD student Bronwen Stone as part of her AHRC CDP studentship training (Figure 28). This can be viewed at https://youtu.be/06Bh7I3LV54 or https://player.sheffield.ac.uk/events/ballidon-experiment

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Thorpe, C.L., Fisher, A.J., Manifold, G., Creasey-Grey, S., Jackson, C.M., Stone, B, G., Boothman, C., Lloyd, J.R. and Hand, R.J. (under review). Insights into long-term glass corrosion mechanisms from the Ballidon project: a 50-year-old glass burial experiment in an alkaline near surface environment. npj: Materials Degradation. (https://www.researchsquare.com/article/rs-4413120/v1).

Further reading

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McLoughlin, S.D., Notingher, I., McPhail, D.S., Henderson, J., Hand, R.J., Hyatt, N.C. and Lee, W.E. (2006). The long term corrosion of glasses: analytical results after 32 years of burial at Ballidon. Glass Technology: European Journal of Glass Technology, Part A. 47, 59-67.

Newton, R.G. (1988). More results from the Ballidon glass burial experiment. Glass Technology 29, 106-107.

Thorpe, C.L., Neeway, J.J., Pearce, C.I., Hand, R.J., Fisher, A.J., Walling, S.A., Hyatt, N.C., Kruger, A.A., Schweiger, M. Kosson, D.S., Arendt, C.L., Marcial, J and Corkhill, C. (2021). Forty years of durability assessment of nuclear waste glass by standard methods. npj Materials Degradation 5, 61. https://doi.org/10.1038/s41529-021-00210-4.

STUDY DAYS ON VENETIAN GLASS

SUZANNE HIGGOTT

STUDY DAYS ON VENETIAN GLASS, 16-18 SEPTEMBER 2024

The Study Days on Venetian Glass are held annually in September at the Palazzo Franchetti in Venice. They form part of the city-wide Venice Glass Week. They are organised by the Istituto Veneto di Scienze, Lettere ed Arti with the collaboration of the AIHV, Association Internationale pour l'Histoire du Verre - Comitato Nazionale Italiano, and the Museo del Vetro - Fondazione Musei Civici Venezia.

The Study Days provide an opportunity for the in-depth study of Venetian glass and are geared towards an audience of glass scholars, museum curators, conservators, scientists, and collectors. Lectures and discussions are held in English. While the theme changes annually, the structure of the Study Days is well established. The opening presentation – given by an expert in their field – provides the broader historic context for the specific 'Study Days' glass theme. This is followed by an introduction to the year's Study Days theme, given by Venetian glass specialists Rosa Barovier Mentasti and Cristina Tonini, the leaders of the Study Days. Marco Verità presents the results of projects of chemical analysis that he has been involved with that relate directly to the year's theme. The final annual presenter is the renowned glassmaker William Gudenrath, resident advisor for the Studio of the Corning Museum of Glass. Further presentations on the year's theme are given by some of the approximately 30 participants.

The Study Days opened with two presentations setting the scene for the year's theme: 'Venetian Glass in Sicily, Spain, and Portugal and its influence on their glass production'.

Figure 29: *Glasstress exhibition display in a former glassmaking workshop at Berengo Studio, Murano (Photo [and all images in this article]: S. Higgott).*

Luca Mola, Director of the Warwick Venice Centre, provided an introductory overview of the evolving commercial relationship between Venice and the Iberian Peninsula between the 14th and 16th centuries. From piracy to complaints about the Venetians bringing too many African monkeys to London, this adventurous period in the history of commerce was brought vividly to life in a fascinating contextual survey.

Drawing on a rich array of archive material and some excavated fragments, Rosa Barovier Mentasti and Cristina Tonini then focused in on the trade and taste in Venetian Renaissance glass in Sicily, Spain, and Portugal. They were able to propose matches between some inventory descriptions and surviving glass typologies.

Following on from these introductory presentations, participants were treated to explorations of glass associated with Spain and Portugal from both an analytical and an art historical, collections-based perspective. Marco Verità gave a paper on behalf of himself, Isabelle Biron, and Françoise Barbe, presenting the results of analysis of Catalan-style glasses from the Louvre. This revealed some characteristic differences

Figure 30: *Detail of a work by Chila Kumari Burman in the Glasstress exhibition at Berengo Studio.*

in composition between Venetian and Spanish Renaissance glass. Intriguingly, Marco explained that the yellow hue traditionally associated with Spanish glass of the period is relatively complex to obtain, leading him to wonder whether it had been produced deliberately because it was aesthetically desirable.

Ignasi Domenech presented Catalan glasses in Venetian style from three important glass collections in the Cau Ferrat and Maricel museums in Sitges, Barcelona. Maria João Burnay considered the historic context for Venetian and Venetian-style glass in Portugal, and the importance of excavations for evidence of glass types in use in Portugal before the Lisbon earthquake of 1755, described the Portuguese royal family's interest in glass collecting, and discussed a small group that has been displayed in a room in the Ajuda Palace since the days of the royal family.

The first day of every Study Days meeting includes early evening lectures at the Palazzo Contarini Polignac on the theme 'Murano-Istanbul: A Glass Making Journey'. This year, one of the contributors was Susanna Garcia Gonzalez, the curator of the Peralada Museum of Glass and Ceramics in Catalonia, who described the strong holdings of façon de Venise Catalan glass from Miguel Mateu's collection, now displayed at Peralada Castle.

William Gudenrath opened the second day with a virtuoso exploration of glassmaking techniques. Drawing on clips from his e-book, The Techniques of Renaissance Venetian-Style Glassworking, Bill described some making processes used by Spanish glassmakers working in the Venetian style that differed from those used in Venice.

The rest of the second day was dedicated to contributions on a range of aspects of the main theme. The results of scientific analysis of glass excavated in Portugal were presented by several speakers: Francisca Pulido Valente on millefiori glass; Mario Bandiera with Marcia Vilarigues, and Anna Cristoforetti on Venetian-style glass. Some art historical papers focused on specific locations, such as Miquel Angel Capellà's contribution on Venetian glass in Mallorca, which is on a maritime route enabling direct contact with Venetian traders, and where the Venetian glassmaker Domenico Barovier was resident between 1600 and 1605. Paloma Pastor, Director of La Granja glass, chose later Venetian-style glass production in Spain as

Figure 31: *Glass dogs in the garden of the Aristide Najean Glassworks, Murano.*

her subject. She spoke on the 18th-century Royal Crystal Factory of San Ildefonso. Further contributions provided much information on Venetian and façon de Venise glass in museums in Madrid (Cristina Raurell Giménez), at the Museu del Disseny Hub and the Institut Amatller d'Art Hispànic in Barcelona (Jordi Carreras), Spanish glass in the Museum of Decorative Arts in Prague (Hedvika Sedlackhova), and Juan Facundo Riaño's involvement in the Victoria and Albert Museum's acquisition, in 1873, of a large collection of glass that comprises the nucleus of one of the best collections of Spanish glass outside Spain (Reino Liefkes). Angela Scialfa introduced participants to examples of 15th- to 18th-century Venetian-style glass in Sicilian collections and I presented my research into a glass enamelled with the name and arms of a French aristocrat that I'd come across in the Casa-Museu Dr. Anastácio Gonçalves in Lisbon.

The papers presented in 2024 will be published in English by the Istituto Veneto di Scienze, Lettere ed Arti in their invaluable series dedicated to the Study Days.

The last morning of the Study Days is usually spent on Murano, and this year was no exception. Transported from the contemplation of historic glass to the viewing of cutting-edge contemporary glassmaking, we visited Berengo Studio, where we encountered Adriano Berengo and saw the Glasstress exhibition (Figures 29, 30); visited the Aristide Najean Glassworks (Figure 31); and met Livio Seguso whilst viewing a magnificent display of his work. Finally, we waded valiantly through high water, some of us barefooted, to conclude the Study Days with a delicious and sociable island lunch.

The next event is titled "Venetian Glass in France and England and its influence in their glass production," and it will be held in Venice from September 16 to 18, 2025. Further details can be found in the Events and Notices section (this issue).

NOTICE: OUR WEBSITE

The AHG website (www.historyofglass.org.uk) is the go-to place for all the information you need about our events and activities. There are back issues of Glass News, information about our grants programme, and bibliographies on glass-related themes. The most recent issues of Glass News, The Glass Intelligence and links to recordings of lectures from past meetings on our YouTube channel are available in the members-only area as well as opportunities to post queries about glass finds and research via the discussion boards.

The website includes a publicly visible page on which members who so wish can list their name, interests and a mail link. See: https://historyofglass.org.uk/about-us/members/

Members are also encouraged to submit material for the resources section of the site such as their publication lists and bibliographies they have produced. Do log in and have a look around! If you need help accessing the member's area, or need us to resend your log-in details, then please get in touch with our website manager Victoria [victoria.sainsbury@arch.ox.ac.uk].

Membership of the AHG is currently £15.00 per annum and is open to all interested individuals. It is available through our website www.historyofglass.org.uk. It includes Glass News, reduced costs to attend events, and access to the resources of the members only area of the AHG website. In addition, we are currently trialling ***The Glass Intelligence***, an email bulletin which goes out to members several times per year providing information about current exhibitions, forthcoming conferences, and other events.

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