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Fieldwalking glassmaking sites in Bagot's Park, Staffordshire.

In 1966 a number of early glassmaking sites were located during reclamation work in Bagot's Park, Abbots Bromley, Staffordshire, one of which was excavated and dated to the first half of the 16th century (Crossley, D.W. 'Glassmaking in Bagot's Park, Staffordshire, in the Sixteenth Century' *Post-Medieval Archaeology* 1 (1967), 44-83). There are now 18 known sites in Bagot's Park, all of which lie in areas of arable cultivation.

In September 1997 one site (Site 15; Staffs SMR PRN2650) was fieldwalked by adult education students from Keele University. Crucible and fragments of furnace were found to be distributed in a concentration in one part of the 1.44ha. survey area. Another concentration of bricks, tiles, and post-medieval pottery was also found, lying 30-40m away from that of the crucible and furnace fragments. This may indicate the presence of a building associated with the furnace, possibly a domestic dwelling. Aerial photographs of the area taken before it was ploughed indicate that both concentrations lay within a ditched enclosure of about 0.44ha.

It is hoped to continue fieldwalking other sites in Bagot's Park in September 1998.

Christopher Welch
County Archaeological Officer
Staffordshire County Council

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Yes, it's time to renew your subscription to *Glass News*. When in the Spring of 1996 the Association for the History of Glass distributed complimentary copies of **Number 1** of *Glass News*, 'a new initiative to further the study of historic glass', we invited subscribers to pay £3 for further issues up to the end of 1997. This issue is the last those original subscribers are entitled to (and yes, we apologise that it is late in appearing). We trust that all our readers (over 200 now) will, on the basis of what they have seen so far, want to continue to subscribe. On page 7 you will find a form to renew your subscription – please return it (or a reasonable facsimile thereof if you don't wish to to cut up your *Glass News*!) to the address shown, with your cheque made out to *Association for the History of Glass Ltd.*

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New subscribers: A number of recent subscribers have already taken the opportunity to pay in advance for future issues – they know who they are! New subscribers are always welcome, and back numbers of all issues to date are still available. Subscription enquiries to:-

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IN THIS ISSUE

ICOM in Israel – September 1997

The ICOM International Glass Committee held its annual meeting in Israel from 14–18th September. About 26 people (including our Israeli hosts) attended. It was organised by Yael Israeli and Maud Spaer of the Israel Museum in Jerusalem and Yael Gorin Rosen from the Israel Antiquities Authority. The programme was packed, with many visits to neighbouring museums and sites. Here are just some of the highlights.

Most of the first day, Sunday, was taken up with a varied Lecture Session at the Israel Museum, Jerusalem with presentations by:-

Ian Freestone: Compositional relationships between Byzantine and Islamic Glass from Northern Israel and the Beth She'arim Slab.
Elias Khamis: Two wall mosaics excavated from the entrance porch to the Umayad Market at Beth Shean
Ayala Lester: Excavation at Tiberias.
Rachel Pollak: A hoard of glass vessels found at Caesarea.
Lisa Pilosi: Two 'improved' ancient vessels from the Metropolitan Museum.
Marie Dominique Nenna: Excavated material from glass workshops in Egypt.
Jennifer Price: A large deposit of glass fragments from the Sanctuary of Demeter at Mytilene.
Veronica Tatton Brown: Recent acquisitions of the Greek and Roman Department of the British Museum.
Vesna Delic: Documentary evidence about Venetian glassmakers working in Dubrovnik from the 14th century.
Hannelore Marschner: Chemical analysis of glass finds from Phidias' workshop in Olympia, Greece in the 5th century BC.
Helmut Ricke: Problems of authenticity of Murano art glass from the period 1930–70.

On the Monday, lectures were given by:
Dan Barag: New evidence on East Mediterranean core–formed vessels of the 7th century.
Batsheva Goldman Ida: Ceremonial Jewish vessels.
Torben Sode: Contemporary glass bracelet making in India.

Visits were just as numerous and varied. These included:

- **The Dobkin Glass Pavilion**, Shrine of the Book and the stores where glass from various excavations was examined.
- The recently, and splendidly, redesigned **Haaretz Glass Pavilion** of the Eretz Israel Museum. There were guided tours by Gusti Lehrer Jacobson who was largely responsible for the display and Henrietta Brunner, the present Curator of the pavilion. The display is directed (very successfully) towards the non–specialist, but is still interesting for the professional glass curator. It included an almost complete glass furnace from the 13th century. After this there was time to see the Ceramics pavilion, a special exhibition on Cypriot pottery and a glassblower from Hebron, making copies of ancient glass and working in a completely traditional style, alone, seated on a simple stool.
- The **Old City of Jerusalem** where the group visited the excavated remains of the very rich house where the Ennion ewer in the Israel museum was found. This ewer was damaged by fire when the Romans conquered and burned this part of the old city. The Dome of the Rock on the Temple Mount has 8th century glass wall mosaics still *in situ* and the El Aqsa Mosque has interesting coloured glass windows.
- The **Rockefeller museum** where it was possible to view the interesting collection of Ancient and Islamic glass and its displays which have not changed since the days of the British mandate.
- The **synagogue in the Hadassa Ein Karem Hospital** which has a famous set of stained glass windows by Marc Chagall. One particular highlight was the opportunity to visit one of the best private collections of Ancient glass in Israel. Prof. Dan Barag was there to discuss the collection.
- The excavations at **Caesarea** where all of the excavated glass was displayed especially for the committee and presented by Sherry Pinqas. After this the committee went to **Beth She'arim** the site of the famous glass slab which is still in the cave where it was originally made more than a thousand years ago. A heated discussion developed as to how the slab was melted, why it was done in a cave and why it was abandoned, wasting an estimated 8 tonnes of glass, which must have taken weeks to melt.
- The **Belus river**, where according to Pliny the Elder glassmaking was first discovered 'by accident' by Phoenician traders. The sand from the river beds was also mentioned in connection with glassmaking by Strabo. The river is not mighty anymore and its beds are not sandy; a highway has been build straight over the estuary.
- **Galilee** where the committee was welcomed and guided through the Naharia Glass Factory. This small family run factory combined artistic production on a large with inventive technology. They produced objects made out of ordinary colourless sheet glass, with painted decorations trapped in between two to three layers. This sandwich is fused together and slumped into a mould in a kiln. The factory worked both with in house and external designers. A small exhibition of their work was on display.

The triennial ICOM General Conference will be held in Melbourne, Australia on 10-16 October 1998. Remember that details of ICOM membership (unfortunately, at £45, not cheap) are available for those in the UK from ICOM UK, 12 Clarence Rd, Kew, Surrey TW9 3NL.

Reino Leifkes
Chairman
ICOM International Glass Committee
Victoria and Albert Museum

Romans and Uranium in Glass

In the last issue, we asked for any information about the use of uranium in glass in the Roman period. Ian Freestone and Barry Skelcher both returned, essentially, similar responses. Ian's has been published in *Nuclear Europe Worldscan* (Jan-Feb 1998, 45). Here is Barry's reply:

***

The suggestion that the Romans may have used uranium to colour glass is discussed by Caley. (*Analyses of Ancient Glasses*, 1790-1957, Earle R Caley, Corning Museum of Glass, 1962).

In 1912, R T Gunther reported on a glass mosaic he had found while excavating an Imperial Roman Villa on Cape Posilipo near Naples. A victim of Vesuvius, the villa must have pre-dated AD79. The mosaic was composed of different coloured tesserae including green, blue and yellow. Samples of the blue and green were given to J J Manley at Oxford University for analysis. This was carried out by a student, E G Laws of Magdalene College. He examined the green examples and reported finding uranium. There is some doubt as to how much he found as the results, reported in terms of uranium oxide, indicated a concentration of 1.5%UO_2. This is far higher than is likely to have occurred by the unwitting use of a uranium contaminated raw material and is comparable with the higher uranium concentrations that I have found in several hundred examples of green uranium glass. Laws made two samples of glass according to the formulae indicated by his analysis but in one he omitted to include uranium. He claims the uranium doped sample compared favourably with the original specimen but the sample without the uranium was a different shade of green. All this would seem rather convincing evidence that the Romans did use uranium to colour glass. However there are serious doubts.

Laws's work cannot be repeated or checked out because the original samples are not available. Uranium was, at that time, an unknown element. It was not discovered until Klaproth separated an oxide from pitchblende in 1789. If the Romans had intentionally used uranium it would not have been known as such and it would have to have been associated with a naturally occurring mineral. Naples is not renowned as being a source of pitchblende. From where would this mysterious mineral have come?

It is most unlikely that uranium would have been used on this one occasion so there should be other examples to discover. So far none have been reported – but then has anyone sought them? Determining whether or not a glass contains uranium does not require chemical analysis. In nearly all cases such glass will respond to ultra violet light, especially the more common longer wave length. These lamps are now readily available in torch size for a few pounds.

Uranium is also easy to detect by using a beta ray sensitive Geiger Counter. Such an instrument will also give an indication of the uranium concentration. (Some caution should be exercised as some other minerals, such as thorium, also give off beta radiation). Could I appeal to all those readers with access to Roman glass to at least shine a uv light on it. If it glows strongly with a ghostly greenish light then it will contain uranium.

There is another reason for doubting whether Romans did deliberately make use of uranium. It is simply why did the process not survive down the centuries?Why do we not find uranium glass in early and later Venetian or other glass? Why does it not appear

(continued on page 8)

V&A acquire Frost Fair souvenir

The Victoria & Albert Museum has acquired a unique glass souvenir of the Frost Fair of 1683-3, when entrepreneurial London tradesmen set up 'Temple Street' across the frozen Thames, complete with public houses, coffee houses, and a printers' booth where woodcuts and ballads about the Fair were produced. Most probably the unmarked dentillated silver rim of this souvenir was also engraved on the spot (perhaps at one of two toy shops): 'Bought on ye Thames ice Janu: ye 17 1683/4'. Other ice activities included fox-hunting, bear-baiting, and inevitably 'The Foot-ball Play'; but the most hazardous must surely have been ox-roasting. When the ice finally melted on 8 February 1684, nothing remained but the folk memory and a handful of souvenirs.

The mug is 2 1/4 inches high (5.4cm), forming a perfect miniature ale mug of the period, with characteristic base ribbing formed in the dip-mould on a second gather of glass. Slight crizzling of the metal suggests that it was not made at George Ravenscroft's Savoy glasshouse by his successor Hawley Bishopp, but it may well have come from the nearby Stony Street, Southwark, glasshouse of Bowles & Lillington - where perhaps even three years after the expiry of Ravenscroft's patent the secret of making stable crystal glass was proving elusive. The presence and percentage of lead oxide in the metal is as yet undetermined.

Victoria and Albert Museum

The Turner Museum of Glass at the University of Sheffield

The Turner Museum reopened in an attractive new gallery in 1993 and became a Registered Museum open to the public in 1994.

At the onset of the First World War, W E S Turner, then a lecturer in the Department of Chemistry at Sheffield University, became Secretary of a University Committee set up to help local industry overcome problems arising because of the war. The local glass industry became the most frequent users of this service and Turner wrote a report recommending that a department be set up specifically to assist the glass industry. The University acted with speed and in 1915 Turner was persuaded to become Head of this new department. He then devoted the rest of his long and energetic career to Glass Technology, founding the Society of Glass Technology in 1916, quickly becoming a world renowned expert in his subject and, in his own words, 'for better or worse, part and parcel of the glass industry'.

Turner was interested in every aspect of glass from aesthetics and architecture to science and technology. He believed that students of glass technology should be exposed to 'the beauty of glass ... bringing a pleasure to the eye and mind' and therefore established a museum. During his extensive travels he was often presented with pieces of glassware which he eventually donated to the University and these form the core of the present collection. The largest other donation was a collection of 120 18th-century English drinking glasses presented by Alben Harland, a local MP, in 1943. Francis Buckley, a well-known writer on glass, gave another group of drinking glasses.

Other notable items in the collection of about 400 items on display include American glass, some designed and made at the Steuben works by Frederick Carder; Bohemian and Czech glass including a *lithyalin* jug by Friedrich Egermann; Dutch glass; French glass; German glass including engraved pieces by Wilhelm von Eiff; some ancient Egyptian, Roman, and Syrian pieces; Scandinavian glass including works by Simon Gate and Edward Hald; contemporary studio glass with works by Steven Newell, Sam Herman, Anne Wärf.

Three recent acquisitions are an engraved and painted panel by David Peace and Sally Scott (who are making another panel for the Museum) a large engraved bowl by David Peace and another drinking glass engraved by Peace.

The Museum also has a unique glass mosaic mural (2 x 1.5m) commissioned by Turner and depicting the historical spread of glass making, also a portrait of Turner by Edward I. Halliday RA.

The Turner Museum, in the Hadfield building, is open to the public Monday to Friday, 10.00am to 4.00pm. There is limited wheelchair access but assistance is advisable. Refreshments are available. All visitors, including parties of up to twenty, are welcome. However, groups or visitors coming from some distance are advised to contact Jim Smedley, at the address shown below, to confirm the details of the proposed visit; the Museum is sometimes busy during the University's morning break, between about 10.45 and 11.15am. Illustrated catalogues of the collection are available for £5 in the Museum or by post for £6.50p (p&p inc.). Please make cheques payable to the University of Sheffield.

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Urban glasshouses of the 18th and 19th centuries

Urban glasshouses of the 18th and 19th centuries have, in the past, been seen as an unpromising topic for archaeological research, their above-ground features rarely surviving. This need not be so, for English glasshouses, from the time of the adoption of coal as a fuel early in the 17th century, incorporated underground flues to bring air to a central fire. This has been shown to be the case by excavations at Kimmeridge, Haughton Green and Bolsterstone, covering the 17th century, as well as at the 18th/19th-century cones at Catcliffe anf Gawber.

The sites of urban glasshouses may be expected to possess surviving below-ground features, especially if deep redevelopment incorporating cellars has not taken place. In the course of the English Heritage Monuments Protection Programme (MPP) examination of the glass industry, particular attention is being paid to former works where the possibility of such survival is high,

The potential was demonstrated by excavations in London at the south end of Vauxhall Bridge during the 1980s and, more recently, by a rapid rescue excavation in Stourbridge on furnace flues of 19th-century date, carried out by Peter Boland, the Dudley MDC archaeologist. Currently, attention is being paid to sites of glass furnaces in Birmingham, Bristol, Gloucester, London, Manchester, Newcastle upon Tyne, St Helens, Smethwick, Stoke, Stourbridge, and Telford.

If anyone is aware of a former urban glassworks elsewhere, where there is good reason to expect intact sub-structures, please contact:-

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Lion Mask Stems from London: A Preliminary Survey

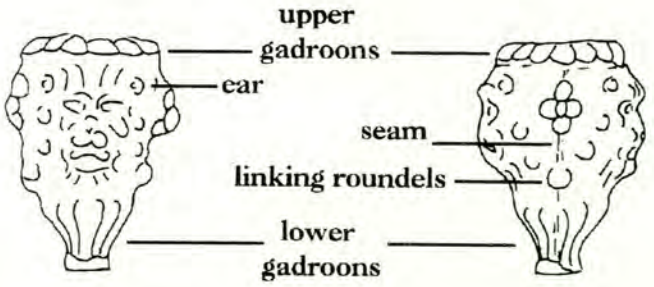
Lion masks were a popular form of decorated stem in the 16th and first half of the 17th centuries, particularly on goblets. They were made by inflating a small parison of glass into a two piece mould, this being removed when cool enough to allow the bowl and foot to be applied. They were probably first produced in Italy in the early 16th century and occur on English sites in increasing numbers between 1550 and 1640 (Thorpe 1961: 128). Certainly by the second half of the 16th century they were being produced in England, France and the Netherlands (Charleston 1971: 63). Despite their geographical spread in origin, their form remains remarkably uniform.

The importance of examining the mould forms of these stems was first high-lighted by the late Robert Charleston, when he suggested some of the benefits of plotting the distribution of identical stem types, on both a national and international scale. Examples from particularly well-dated archaeological contexts could define a more precise chronology and origin of manufacture for each stem type might be attributed, if the rest of the vessel was decorated in characteristic way.

The first important step in a large scale investigation of lion mask stems was to take a significant sized group, to see if such a study would be successful. Probably the largest single group of these stems is from the old Guildhall Museum collections, now housed in the Museum of London. Of these a total of 67 were complete or stable enough to be worked on. A mould of each stem was made in a neutral addition cured silicone dental putty. From these, plaster casts were made to produce a comparative collection that could be studied. Initially the casts were grouped broadly by size and then into individual categories by comparison of the finer details of their features. The main components of these stems are shown in the illustration.

The results from this single group of stems were quite surprising. Of the 67 stems, 57 or 85 percent could be shown to fit into just seven mould varieties. These ranged in quantity per category from 3 to 28. Only 10 stems did not have any identical match. Most of the seven matching groups were very clearly distinct in their execution. This is probably the result of the consistency of their manufacture, being carefully blown and removed from the mould. However the largest matching category, containing 33 percent of the total, was initially thought to be several forms. The stems did vary quite extensively in the definition of some elements and even in size. On closer examination they could be seen to have identical features that were subsequently distorted. This was most likely to have been caused by careless removal from the mould and heavy handed application of the bowl or foot.

The initial implications of this limited study are important. The high correlation of stem matches suggests that relatively few moulds were used to produce a large number of vessels. It is quite possible in this case that



each furnace or glasshouse only possessed one or two of such moulds.

At this stage it is not possible to ascertain the provenance of each stem type. The finer well-executed varieties could be argued to be imported products. The large single group of more inconsistent stems appears to be of a poorer craftsmanship and their significant quantity from sites within London would suggest a local manufacture. However what is particularly interesting is the variance of the glass quality in this 'English produced' group. Some are in a clear metal, whilst others have strong green tints. This would indicate that the colour is not necessarily indicative origin or even date and is more probably the consequence of each individual batch of glass produced or the subsequent depositional weathering of the stems.

This preliminary study has only produced limited results, although it demonstrates the value of a more extensive survey. Unfortunately the stems from the old Guildhall collections were found as the result of occasional finds earlier this century or in the initial post-war redevelopment. Consequently they are not associated with the necessary contextual information required to answer many of the questions posed. However what has been clearly shown is that these stems can be easily classified into a comparatively small number of groups. This study in conjunction with additional stems from other well recorded sites will start to answer many of these important questions.

I would like to thank Hazel Forsyth and John Shepherd from the Museum of London for permission to work on the stems and for their encouragement. Additionally this study could not have been undertaken with out the support of the Rosemary Cramp fund. It is intended that the results from this survey will be published in greater detail, combining information from other sites, in the near future.

Charleston, R. J. (1971) 'Glass' in Finds from Basing House. Moorhouse S. *Post-Medieval Archaeology* 5, 63-70.

Thorpe, W. A. (1961) *English Glass* 3rd ed. London.

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On making prismatic Roman bottles

These very common mould-blown bottles include square, rectangular, and hexagonal-sectioned examples of various sizes. Although they are reasonably quick to make, they do represent a challenge to the glassblower. The following are a selection of observations I have gathered together from my own experiences making these bottles.

Small bottles need only a single gather, the larger square-sectioned bottles need two or more. The parison for square and hexagonal-sectioned bottles is made in the normal way: the gather is shaped and inflated a small amount and then stretched to form the neck. The body is formed by inflating the end of the elongated bubble, taking care to keep as much glass as possible at the base of the bubble. The parison is cut in slightly with the pucellas (or probably shears in the case of the Romans) in order to emphasise the junction between the neck and the shoulder. The body parison is elongated (the length of elongation determines the length of the completed body), reheated and introduced into the open mould.

For all mould-blowing, a good parison should mimic the general shape of the mould. This ensures a reasonably even distribution of glass in the finished vessel. The parisons for the square and hexagonal-sectioned bottles can be circular in cross-section, but the parison for a rectangular-sectioned bottle needs extra work before it can enter the mould. It has to be flattened on a marver or by using a wooden board until it assumes a rectangular shape a little smaller in size than the mould before it is reheated.

Once in the mould, the parison is inflated and the iron pushed a little way down into the body of the bottle. This gives the shoulder its characteristic squareness. The bottle is withdrawn from the mould, the base and sides are checked for flatness, and it is puntied.

To make the lip, the end of the neck has to be widened and folded inwards. This involves much reheating, with the very real danger of the shoulder and body walls distorting.

The handles for all of these bottles tend to be elongated ovals in cross-section. Some are plain, some have a few ribs, but many are multi-ribbed. Plain handles can be shaped by flattening them on a marver. Handles with a few ribs may be created by using pincers after the marvering. To make a multi-ribbed handle one needs to press one side of the proto-handle with a tool such as an iron carding comb. Help from an assistant is needed in order to apply the handle.

So, what is there to go wrong? Mould-blowing is a skilled operation requiring much concentration, and problems can occur at every stage. Glass distribution within the parison is very important. Off-centre bubbles can lead to walls that are too thick or too thin and the lack of glass in the base will lead to a thin base that may not withstand the shock of the punty being detached.

The definition of the mould base design is directly related to the temperature of the base of the parison. This has to reach orange heat on the reheat prior to its introduction into the mould. At the same time one must be careful to keep the shoulder of the parison relatively cool, otherwise one can end up with very thin glass at the shoulder of the blown bottle.

Overheating of the bottle after puntying is another problem. In its extreme the flat walls will turn circular, particularly at the top of the body, and will lead to deformed shoulders that are pushed into the bottle as the lip is formed. Correct reheating is very important, and experience is a good teacher when using the glory hole.

As already stressed, the temperature of the glass when attaching a handle is crucial. If the bottle is too hot it will distort. If the proto-handle is too hot the definition will be lost, and if it is too cold extreme difficulty in detaching it from the gathering iron is experienced (it is not sheared, it is detached by pulling and stretching the waste glass after attaching the handle just below the lip, causing it to become very thin. If it is held against the main part of the handle as it is being stretched, the heat from the handle will cause a remelting, allowing the strand to thin out to nothing).

These are several of the most common problems associated with the glass. Another set of problems can occur with the mould. The most obvious point to note is that the mould has to taper very slightly outwards towards the top (a millimetre will do). If it doesn't, the bottle will not come out of the mould.

If using a sandstone mould - as the Roman glass-makers did - it is important to keep it slightly damp. If it is dry the molten glass can adhere to it, particularly as it warms up, resulting in small pieces of sandstone sticking to the bottle. The base is especially prone to this as it is in contact with the part of the parison which is at the highest temperature, and it will result in the loss of the carved detail.

If the mould is too damp, then cooling rings can appear on the walls of the bottle. If the base is too wet, ie if water is sitting in the design, then steam will form and will prevent the glass from fully reproducing the pattern. Examples of this can be seen in the glass from Augst - Rutti, B. (1991) *Die römischen Gläser aus Augst und Kaiseraugst*: Tafel 122, nos 3130, 3131, 3132.

So, in a given time, how many bottles of these types can a glassblower make? Assuming an uninterrupted supply of glass, he can make five square-sectioned bottles (each of two gathers) in an hour. Estimate six hours blowing for a five day week:

5 x 6 x 5 = 150 bottle per week

x 50 weeks per year = 7500 bottles per year

7500! And this is just for a single glassblower. If he only spends half the estimated time on these bottles, he can still make 3750 bottles in a year. Judging by the number

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Eynesham Abbey

The excavation of Eynesham Abbey, conducted by Oxford Archaeological Unit, has produced very exciting results. Not least, a large assemblage of medieval window glass. This is being studied by a glass specialist, Cecily Cropper, in conjunction with Roger Doonan of English Heritage's AML.

SEM-EDS analysis of an extensive sample hopes to address questions relating to variation in the composition of glass used in different glazing regimes/structures and also to shed light on the technology of glass painting. Results from Eynesham and comparisons with other sites should give an insight in to the social and technical organisation of glass painting in the medieval period.

As Eynesham is being used by the Archaeological Data Service as a pilot study for web publishing all these results, and more, should eventually be available over the web.

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of different base designs and the sheer amount of bottles that have been excavated, demand for these must have been high, and the estimated amount would have been but a small proportion of the numbers required.

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(Mark's excellent reproduction Roman vessels, including decorated mould-blown forms from moulds made by his colleague David Hill, are available in Museum shops throughout Europe. Write to them for a catalogue of their repertoire – **Ed**)

A wonderful window

One of the more unusual objects that has recently arrived at English Heritage's Ancient Monuments Laboratory is a late 17th-century window, complete with some of its original glazing. It comes from the East Pavilion at Palace House Mansion, Newmarket which was refurbished in 1668-71 and appears to be be all that survives of Charles II's royal hunting seat.

The oak frame measures 2.75 x 1.50 m and is divided into four, the upper two panels of glazing are fixed while the lower two are counter-balanced, vertically-sliding sashes, a very early example of this type of window. The glazing in the surviving sash is a leaded panel 1.25 x 0.46m, made up of five rows of three rectangular panes of glass in a variety of pale greenish tints. The panes are up to 240 x 180mm and appear to be cut from cylinder blown glass which contains a number of small bubbles. Lead ties are soldered on at the corners where four panes meet to fix the glazed panel to square-sectioned iron bars that fitted into the window frame.

The lower two rows of panes from a second panel of the same design from the fixed glazing also survives, though all the glass is fragmentary. The other fixed light now contains only a panel 0.58 x 0.51 m made of diamond-shaped panes 140 x 110 mm, some of which are also damaged. All of the glass is quite thin, mainly 1-2 mm. Roger Doonan has removed tiny samples of glass from broken panes, both rectangular and diamond-shaped, and will be analysing them using the EDX detector on our SEM. This will characterise the glass compositions and will show whether the glass in the two patterns of glazing is the same, and thus probably contemporary. If any readers know of analytical data for window glass of similar date, we would be very pleased to hear from them.

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La salle des verres grecs et romains

I was recently able to pay a very brief visit to this new gallery and the following account is taken from my rather illegible notes.

The gallery, in the Sully Wing of the Louvre, shows glass from about the 6th century BC to the 6th century AD, and is generally arranged by technique. In a case on its own is a fine cup with engraved biblical scenes of the 4th century AD. Two cases on one wall display jewellery and everyday items, and on the other wall is a case of perfume flasks. In the centre the cases are devoted to core-formed glass, Greek and Roman cast (non-blown) glass, mould-blown glass and blown glass of the 1st to 4th century AD.

Pieces of note include a fine Ennion cup displayed together with examples of most of the mould-blown types. The perfume flasks case shows a number of birds whose tails had to be broken to release the contents, a lamp, stirring rods, and a flask from Tiberias (Israel) like the one illustrated in *What is it* in Issue 3 of *Glass News*. (In Israel, during the ICOM meeting – see Reino Leifkes note on page 2 – I discovered that such flasks are probably Islamic). In the non-blown case *inter alia* are several 'pillar-moulded' bowls, a complete glass tray, a box of network glass and two skyphoi, one with a tall foot and the other without. Of note among the blown glasses are a bowl of clear glass with mosaic inlays, a tall footed skyphos also of clear glass, a chalice of deep purple glass, a bowl with embedded blobs and several pieces of blue glass.

I would urge anyone interested in glass to visit this gallery (and do not be put off by those who say it is not open yet!!). It contains many fine and notable pieces, and it is particularly pleasing to find a whole gallery devoted to ancient glass.

Veronica Tatton-Brown
British Museum

Conferences and events

The Annual Conference of the **British Society of Master Glass Painters** is to be held in Glasgow, 4-6 September 1998. Residential and non-residential places are available. Places are limited so, for further information and booking form, contact Stephen Richard, 4 Clarence Drive, Hyndland, Glasgow G12 9QJ, enclosing a stamped SAE.

Make a note now – **Broadfield House Glass Museum** (Kingswinford, West Midlands DY6 9NS) are holding a week long **Glass Festival**, with talks, demonstrations and workshops, from 28 September to 4 October 1998.

In the meantime, Broadfield has an exhibition dedicated to the work of **Bagley's of Knottingley** from 4 April until 14 June. Bagley reached its heyday in the 1930s and was responsible for a wide range of delightful Art Deco designs. The exhibition charts the history of the company using archive material and photographs, and displays a wide range of glassware that was produced by this important but often forgotten factory.

Finally, our own **Association for the History of Glass** will be holding a two-day workshop on **Glassmaking techniques in Antiquity: hot working** at the Edinburgh College of Art, 21-24 July 1998. For further information, write to David Crossley, University of Sheffield [Cont.Ed], 196 West Street, Sheffield S1 4ET.

(continued from page 3)
again until the 19th century, after Klaproth's discovery? It seems incredible that once it had been successfully used the secret would be forgotten.

On balance I do not believe that the Romans used uranium to colour glass but that view would change if more examples could be found.

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