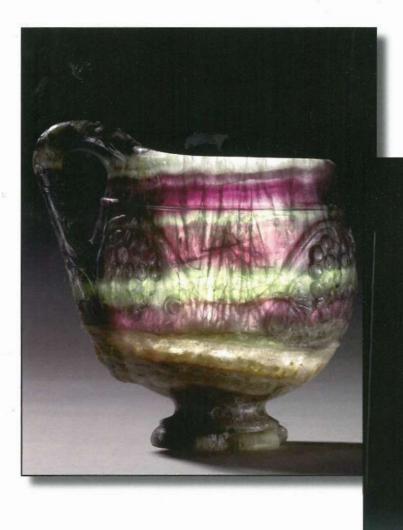
GEM & JEWELLERY

NEWS

March 2004, Vol.13 No.1





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The Gemmological Association of Great Britain and The Society of Jewellery Historians

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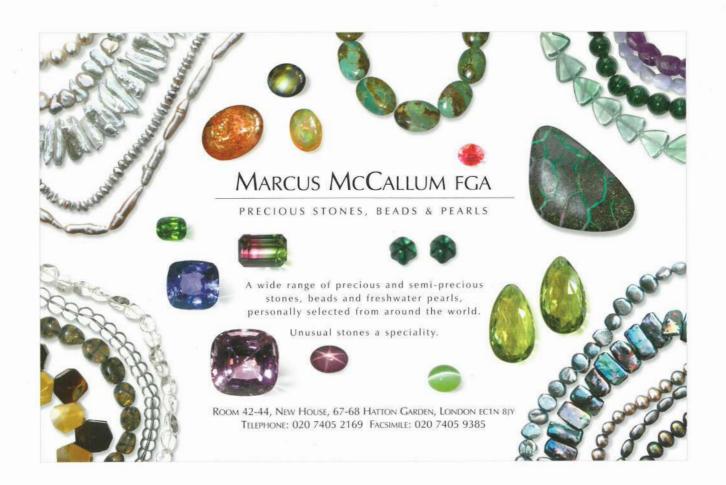
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WHERE ARE THEY NOW?

I recently prepared a talk for the Scottish Branch of Gem-A (see report on p.21) and planned to look over the years from the 1960s when crystal growers were producing a number of materials for different applications.

There was a considerable production potential for the of electro-optic crystals (they change their refractive indexes within an electrical field), for laser materials and for ferroelectric crystals (they exhibit a spontaneous polarization whose direction may be reversed by an electrical field and so are piezoelectric (changing polarization with stress) and pyroelectric (changing polarization with temperature). Because of the rapid developments in electronics many materials had to be tried out a quite small number of crystals were grown to see what they could do. It turned out that in some cases ceramics of similar composition performed the required tasks more efficiently and cheaply than single crystals so single crystal growth was halted often quite soon after the new substance had been hailed for its potential. Work on the growth of III-V compounds also affected some single crystal production.

This sudden disappearance of interesting and beautiful materials (for perfectly good reasons) was matched by the equally swift decline in the amount of literature of crystal growth and materials science as far as they covered this part of solid state. There were many books describing substances and their properties and in some of them were papers dealing with synthetic garnets of different compositions and the need for different materials for transducers (e.g. bismuth germanates) and for the modulation of optical beams (lithium niobate).

Work in this area led to the establishment of the British Association for Crystal Growth (which has an attractive tie) but even though many of the crystals grown could have been used ornamentally (and some were) to many today who might have shared an interest in them, the whole of this work is now sliding into the unresearched past (I do not consider looking up an entry in the phone book as research). This sounds or reads suspiciously like fogeyism but an elegant period of materials science and its comprehensive, often groundbreaking accompanying literature should not be lost, especially for those who have never seen how beautiful some of these crystals were and who have not had the opportunity, perhaps even more important, of tracking down the materials, finding out their properties and just why they were made.

Today there is little chance for this kind of thing to be considered. The perceived aim of as fast as you can is not the way to regard determinative science. opportunity of building up the most valuable resource of all - a mental compendium of pictures of the widest possible range of inclusions and appearances — is lost when the increasing sophistication of instruments takes them out of the range of most workers in a field such as ours. Let us see if past work cannot teach us something today: perhaps a new reverence for some of the less common materials long relegated to appendices by the textbooks: perhaps an increase of the desire to know, just for the sake of knowing.

Michael O'Donoghue

Front Cover Illustrations (from top)

- 1) This view of the Barber cup displays the effect of shining light through the translucent material. Photograph © the British Museum (see page 15).
- 2) A rare gold, ruby and emerald set jade flask. Photograph © Christie's Images Ltd 2004 (see page 19).
- 3) William Spratling jaguar brooch, in which the tortoiseshell replicates the jaguar's coloration c. 1960-65. Jill Crawford Collection. Photograph by Matthew Marston (see page 7).

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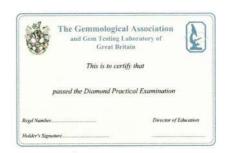
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The fee of £750 includes

tuition, examination fees, a 10x loupe, stone cloth, stone tweezers and a practical book.

For further course dates contact the Gem-A Education Office on +44 (0)20 7404 3334 e-mail: gagtl@btinternet.com or visit the Gem-A website at www.gem-a.info



The Society of Jewellery Historians was formed in 1977 with the aim of stimulating the growing international interest in jewellery of all ages and cultures by publishing new research and bringing together those seriously interested in the subject, whether in a professional or private capacity. The membership includes archaeologists, museum specialists, collectors, art historians, dealers, gemmologists, practising jewellers and designers, scientists and restorers, all united by their enthusiasm for the subject.

The Society holds eight evening lectures a year at the prestigious apartments of the Society of Antiquaries of London, as well as occasional symposia. The lectures cover all periods from ancient to modern, and a living jeweller is normally included each year. Refreshments are served after lectures, and this provides an opportunity for members to meet.

Jewellery Studies is published in colour on an occasional basis, and contains full length articles, book reviews and other information. Members also, of course, receive Gem and Jewellery News quarterly. The current maximum annual subscription is twenty eight pounds.

The Society of Jewellery Historians c/o The Department of Scientific Research The British Museum, London WC1B 3DG e: jewelleryhistorians@yahoo.co.uk

DIAMOND GRADING AND THE SI3 DEBATE

It is amazing how little those who use grading certificates understand exactly what they are using. Laboratories, amongst the other work they do, produce two types of certificates. The first is an identification report, telling one whether it is a natural stone or a synthetic one, some identify whether the stone has been modified by treatments other than cutting and polishing, and some may give an origin of the stone, where the stone has been mined.

The other type is a grading report, usually for diamonds, which gives a grade for the colour, clarity and other relevant factors to identify the stone, such as its dimensions and shape, as well as comments on cut and proportion, and an indication of fluorescence should this exist. Sometimes these reports are called grading certificates, which is an incorrect description. The grading reports may now include comments on treatments, a topic on which there is yet no universal agreement. Some identification reports are now trying to give comments on the amount of treatment a stone has undergone, for example the amount of oiling or resin-filling an emerald has been subjected to.

Why use reports?

The question to ask is why do we need grading reports and the simple answer is that they are used to put a value on a stone. It makes it simpler to compare stones, both for matching and for pricing. I recall when I first started trading in diamonds I would get a phone call with the question: "How much is a 1 carat diamond?" No matter what answer I gave I was told that they could get it cheaper and it was only after a second discussion could

I tell them the price was dependent on the quality and thus give myself a chance of selling a stone.

Today I still get similar calls, although the enquiries seem to be more specific. I am now asked to quote for, say, a one carat diamond of colour G and clarity VS1, again when I give a price I am told they can get it cheaper. The potential buyer thinks that by giving the parameters of colour and clarity he has totally identified the stone. If I can get back to the caller I ask him if he has such a stone and can he measure the diameter of the stone. If he can, I tell him his stone



is of diameter of about 6.1 mm. I am often asked how did I know and the simple answer is that a well-proportioned carat stone is of diameter 6.5 mm and if he is being offered a stone below market value then there is a reason for this in that the stone is too deep or too flat, he has not considered the cut. Price is affected by the amount of fluorescence and the proportion of the various facets. Price is also affected by the quality of the rough from which the stone is cut. Grading reports capture as many parameters as they can, but ultimately the final factor determining value is how the stone appears to the eye. One needs much experience to make these subtle judgements.

I have written much in the past about how we have come to have the terminology we use in diamond grading. The most popular system is that used by the GIA of letters for colours and terms such as VVS1 and SI2 for clarity. Other systems are used, using more descriptive terms but some such reports may have a chart showing how their system relates to the GIA one.

All this looks well to most traders, but unfortunately the comparison is not so simple. The main problem is that the sets of master stones used to determine colour in different laboratories are not identical. Colour is determined by using a trained eye to compare the stone with two adjacent master stones.

In some laboratories a stone that falls between the G and H master stones (i.e. worse than G but better than H) is considered to be a G, whereas in others it is the stone between the F and G masterstones (i.e. worse than F but better than G) that is graded as G. Superficially these two systems seem to contradict each other, but if the G master stone in the one system is the same as the H in the other system then they are both seemingly coming up with the same answer. Thus when determining a master stone set the laboratory can claim that their master stone G, say, is a bottom G or a top G. But how these master stone sets compare to each other is something that is somewhat unknown. A similar problem exists for grading clarity.

The international diamond community tried to reconcile these problems by setting an ISO standard for diamond grading. An analogous problem could be for giving the weight of a stone. It is

like someone taking two stones of almost the same weight and saying that anything that falls between these two weights is identified as the weight of one of them. Thus if this was the method of determining weight, one could buy a stone in one place and be told that it weighs one carat, and when taken home and weighed again it was found to weigh only 0.95 carat. Such ambiguity would be intolerable and, by convention, we have internationally recognized standards for weight. The ISO standard tried to achieve a similar convention for grading diamonds, bringing together the main systems used in the world. After 15 years of hard work the proposed system was not accepted.

the diamond Many in community would like to see such a standard adopted. This would help remove ambiguity and make the comparison of diamonds much easier. Unfortunately trade laboratories do not want to have their system replicated for outside use. Different centres use their own systems for grading and in order to buy and sell in these places one has to use the local grading report, and if one then goes to another centre the stone may have to be regraded locally for the traders there. Imagine if one had to do this for weight! This was indeed done for many years from the early 1900s until the metric carat became standard. In many diamond centres one had to obtain an 'official weight', either through a local laboratory or a local trade organization. This problem no longer exists for weight, as most dealers now have accurate weighing balances, although the weight in a grading report still has a degree of being more official and thus acceptable than the weight given by the trader.

Thus the most pertinent question, whenever one is given a grading on a diamond, is to ask "Who says so?" Internationally some reports are more acceptable than others, although this can vary locally. If you have followed the arguments so far, you will probably see the need for one acceptable world standard. But I will try to show that even adopting a world standard we will still have ambiguity within the system.

Let me now talk about the SI3 debate. The clarity grading for diamonds is accepted to be:

IF	Internally flawless
LC	10× loupe clean
VVS1 and VVS2	Very very small inclusions
VS1 and VS2	Very small inclusions
SI1 and SI2	Small or slight inclusions
P1, P2 and P3 or I1, I2 and I3	Visible inclusions

Many traders think that the band classified as P1 is too wide. That is, too many stones of different clarity appearance fall within this grade. One must remember that the grades determine the price and some stones within the P1 band look much better than others within that grade. Thus stones within the same grade could sell for significantly different amounts and traders wish the grading report to somehow show this differential. Some traders began to call the better P1 stones SI3. This new classification has been accepted by bodies such as the World Federation of Diamond Bourses (WFDB), many laboratories use it and it is shown on the Rapaport price listing grid. Other trade organizations and some

of the major laboratories refuse to recognize this new grade.

The laboratories who refuse to use it claim that an SI stone has inclusions which are not visible to the naked eye, whereas P stones (pique stones) have inclusions which are visible to the naked eve. Bringing stones which have visible inclusions into a classification for stones with inclusions that are not visible will introduce a contradiction into the term SI. Further they argue it will be difficult to define the term SI3 for international use. Then there are those within the trade organizations who feel any changes in the rules will only confuse the trade and the public. They fear retrospective complaints. Thus a stone given a grade at one time could obtain a different grade if it is graded again. Although giving a stone a SI3 grade may be better than calling it a P1 stone, then some stones graded as SI2 may now be graded as SI3.

The reason that the terminology SI3 is being used is that for most traders it is easier to sell a stone with an SI grade than a P grade. This is because we have degraded the stones that have visible inclusions and there is a reluctance to buy a stone with a P grading. In fact very few stones with visible inclusions are graded as the report in most cases will hinder rather than assist a sale. Many dealers will not pass on a report which has a P grading. Thus they are opting for an SI, thinking that this will make it easier to sell the stone. What in fact is the case is not that it is called an SI stone but that it is no longer P1. Not being a P1 is the important criterion. We can call these stones anything we want, for example we could call them VI stones - visible inclusions.

I said above even if we come to agreements to have an ISO standard for diamond grading there are inherent problems within the system. Our grading system has all the trappings of being a scientific system; it has well defined terms, it is subject to measurements and we make use of scientific instruments, and work is done in laboratories by people with scientific qualifications. But at best it is a pseudo-science. It is this because it does not really have well defined terms. Linguistically terms used in diamond grading are vague terms. The colours D, E, etc, have an ill-defined scientific basis. They indicate colour but are based on only a vague concept of absorption of light. The whitest stone, i.e. the one with the least colour, was taken to be D, a stone with a perceptible difference in colour was taken as the next stone and called E, and so on for F, G, etc. There is no scientific relationship between the colours D. E and F. We cannot say that D is twice as white as E and three times as white as F. We can do this with weight. A 3 carat stone is three times as heavy as a 1 carat stone. Also the colour scale is not linear. The colours D. E. and F are closer together than the colours J, K and L.

A similar problem exists for clarity grading. The term 'clean' seems unambiguous, but in reality it is only clean because we can see no inclusion with a 10x loupe. Put this stone under a microscope and with sufficient magnification one will eventually find inclusions. So grading a diamond is more of an art than a science. Similarly, the terms VVS, VS and so on are again randomly chosen terms. The International Diamond Council (IDC) tried to put some science into the system by measuring the sizes of the inclusions in microns. But for grading stones it was not only the size of the inclusion that determined the clarity grade but where it was positioned in the stone. This again brings the art into grading and not just a science of measurement.

Vague terms have no absolute values. Thus a very small elephant is much bigger than a very very large rat, and a spoonful of sugar varies from one time to the next. We understand these terms, we can use them correctly, but not in absolute terms such as grammes, metres or minutes. Those who argue that we cannot define an SI3 term fail to realize that they have defined, in an arbitrary way, all the terms that are used for diamond grading, other than measurements of size and weight and proportion, and introducing one more vague term into a system of vague terms is not beyond our means or imagination.

Those who argue that introducing such a term would make it easier to sell a pique stone have failed to realize that laboratories and grading reports are there to help the trade and not hinder it. Recent developments in the distribution of rough diamonds by organizations such as the Diamond Trading Company (DTC) and the shortage of better quality stones is going to result in more stones of lower grades being offered in the markets to satisfy demands for diamonds. It seems strange to degrade the quality description of such stones.

Another argument espoused by those who do not wish to change the terminology is that the change would confuse the trade and the public. I have used the term VI; this is an arbitrary term I have chosen, it is not a term I am necessarily advocating. It is somewhat prov-

ocative on my part in that some will say it is too similar to VVS and VS. The trade is remarkably adept in accepting innovation and anyone who cannot understand the terms we use should not be in the trade. As for the public, it is totally fallacious to say they will be confused. The average member of the public has absolutely no idea what a G/VS1 diamond is. It is not a terminology we are taught at school, but if a graded diamond is sold with a certificate it will have a glossary that explains exactly to him what these terms mean and how they relate to each other. Our trade is far more transparent than almost all other trades. When we look at the ingredients of a foodstuff we think we know exactly what we are eating but how many of us know what E145 is as an additive?

Problems such as this and all the new treatments now being done to diamonds to improve their appearance, such as high pressure high temperature (HPHT) and the appearance of synthetic stones is causing consternation within the trade. The subject was discussed at the CIBJO Congress held in Bangkok at the end of February, and will no doubt come up at the World Diamond Council (WDC) meeting in Dubai at the end of March, and meetings being called by smaller groups in other localities. If history is anything to go by, little will be resolved, the conservatives will prevail, they will fear change and find themselves being retroactive instead of proactive. We do not want to resolve problems until they are imposed on us through forces beyond our control.

A final story will illustrate our unwillingness and inability to act. CIBJO allowed only the term 'treated' to be used for stones

that had been processed by means other than cutting and polishing. White topaz was being irradiated to change its colour into various hues of blue. CIBJO was asked to introduce the term 'Irradiated' to describe such stones, but the term was not accepted and was banned; they had to be designated as treated. The US government

brought in legislation that anything that had been irradiated had to be so declared when being imported into the United States. This was to ensure that such stones would be tested for safety before being distributed. Declaring such stones as treated was inadequate. So CIBJO was forced to allow the term 'irradiated' into its lexicon, as

otherwise there would not have been trade between the USA and the rest of the world in white topaz artificially coloured.

I hope to report back in the next issue of *Gem & Jewellery News* on any changes, if any, that will be advocated by the trade in these Congresses.

Harry Levy

GEMSTONE INDUSTRY AND LABORATORY CONFERENCE

Adrian Klein reports on the Conference held on 3 February 2004 in Tucson.

The GILC meets bi-annually to discuss the problems facing the coloured stone trade and to provide a forum for leading gem laboratory representatives and stone dealers who represent trade organizations.

The meeting opened with a welcome by the President, Roland Naftule, joined by Eric Braunwart of AFTA and Joseph Menzie of ICA. The first item discussed was the report from the Laboratory Manual Harmonization Committee (LMHC) presented by Ken Scarratt of AGTA. There are seven laboratories who comprise the LMHC, namely AGTA (USA), GIA (USA), CISGEM (Italy), GAAJ (Japan), GIT (Thailand), Gübelin Gem Lab (Switzerland), and SSEF (Swiss).

Ruby Nomenclature

The group has been working on a method to provide a nomenclature for rubies which have been heated and/or fissure filled. This applies to the majority of rubies available on the market today coming from Mong Hsu and heated in Thailand. Colour and clarity are enhanced by heating this material in borax,

which melts to fill the cavities in the ruby in varying degrees.

The object of the exercise was to provide a table to indicate the degree of fissure filling which will ultimately affect the value of the stone. A stone which has merely had the internal fractures healed with no foreign substance present may be described as heated or TE (thermally enhanced). For stones with minor fissure filling the designation would be TE1 or TE2, moderate filling TE3 or 4, and extreme filling TE5. The LMHC had made a series of photographs showing examples of stones to which the various descriptions would apply together with diagrams to provide further information. Rubies which have had no heat treatment would be described as NTE.

Sapphire Nomenclature

The work relating to the nomenclature for the treatment of sapphires was still in progress but an information sheet was produced showing the initial stages of the group's efforts. For sapphires which have only been heated with the addition of hydrogen (i.e. traditional method), the report would read 'Natural corundum, sapphire, indication of heating'.

For sapphires which have been treated by newer methods using various other elements to enhance the colour in an unnatural way the report would read 'Natural corundum, sapphire, indications of heating, colour induced by lattice diffusion from external source'.

interesting An discussion followed the presentation. The Thais objected to the term 'lattice diffusion'. The Japanese delegate was concerned with the problems of applying these descriptions to small stones where the cost of testing would be prohibitive yet every stone was required to have a certificate. C. Beesley complained that there had not been enough communication between group of seven laboratories and the other laboratories regarding this nomenclature. Ken Scarratt responded that the information would be made available to any body who wishes to use it. Not withstanding that, the LMHC has applied for copyright for the nomenclature.

A new sapphire treatment was appearing in some stones bought in Sri Lanka. The inner core of the stone would be a strong colour but the outer layer colourless. It seems that there is only one company involved with the heating of this

material and to date the method and content of the treatment remains a mystery. Investigations are ongoing.

There were complaints voiced by the stone dealers that origin reports often differed between one laboratory and another. The laboratories responded by saying that not all laboratories had a satisfactory data base to pinpoint origin and that the point of origin should only be offered as an opinion. One dealer suggested that when a stone was submitted for an origin report the lab should be told if the stone had been

tested previously and the result of that test. If the second lab came up with a different result from the first then it should communicate with the first to explain how it arrived at the contrary result.

Roland Naftule requested ideas on how funding could be raised for the laboratories to undertake research projects. If was suggested that if there was more sharing of information and sample materials between labs the need for more money would be unnecessary. The problem could be more political than financial.

Adrian Klein

OBITUARY DON CLARK 1921–2004



It is with great sadness we report the death of Don Clark on 17 January 2004.

Don started in the diamond industry before the Second World War with J.C. Ginder in Birmingham, although his first choice of a future career would have been to go on the stage. As a friend of Vivian Van Damm, the impresario, however, he was given the advice, "If I require an entertainer, I have dozens to choose from but if I require a diamond I only have one diamond merchant."

After being called up, he was selected to tour India entertaining the troops as a member of the Stars in Battledress, which had been immortalized in the TV comedy 'It ain't half hot Mum'. Don had often commented on the memories evoked by the programme.

On return to civilian life, he joined another diamond company until 1958 when he formed D. & P. Clark (Diamonds) Ltd with his late brother, Peter, until his retirement in 1984.

Don was active in support of the trade and a member of many committees; notably he was appointed CIBJO representative for the London Chamber of Commerce. He was as much in demand for the latest jokes as for his clients' diamond requirements.

Don always kept his interest in the stage and was well known in his part of Surrey for his acting and entertaining ability in which he was active until suffering ill health last year.

Don is survived by his wife Betty, children Tim and Sally, and five grandchildren.

David Gann

FORTHCOMING SJH MEETINGS

Details of venues, times and prices are given on p.24

29 JUNE ALUMINIUM JEWELLERY Sarah Nicholls

Sarah Nicholls was born in Manchester and took her degree in Art History at the University of East Anglia. Subsequently she became a Winterthur Program Fellow in Early American Culture at the University of Delaware, NJ, where she gained her MA in Decorative Arts and Museum Studies.

Since 1992, Ms Nicholls has been the Curator of Decorative Arts (and since 1996, the Chief Curator) at the Carnegie Museum of Art in Pittsburgh, Pennsylvania, and has been responsible for numerous acclaimed exhibitions. These include Silver in America, 1840-1940, and the recent major exhibition Aluminum by Design: Jewelry to Jets, which included a significant publication, and toured to seven venues in America and Europe in addition to its original showing in Pittsburgh.

Ms Nicholls has written and lectured extensively on a wide range of decorative arts topics from 18th-century furniture to contemporary ceramics and glass, and will speak to the SJH on 'Aluminium Jewellery'.

EUROPEAN GEMMOLOGY

GEM-A HOSTS 2004 FEEG SYMPOSIUM

Members of the Federation for European Education in Gemmology (FEEG) met in London from 22 to 25 January for their annual General Assembly and Symposium, this year hosted by Gem-A.

The FEEG Symposium, attended by 70 FEEG members, students and guests from eight European countries, was held on Saturday 24 January at the Royal College of Surgeons of England in Lincolns Inn Fields.

The event was run in the style of a proactive seminar with delegates divided into groups for open discussion on issues of international concern over currently-accelerating changes in the world of gem research, testing and trading, changing requirements and directions in gemmology education.

The morning with started short presentations from FEEG representatives Dr Joaquim Nogués i Carulla (Escola de Gemmologia, Barcelona), Dr Ulrich Henn (Deutsche Gemmologische Gesellschaft, Idar-Oberstein) and Drs Hanco Zwaan (Nederlands Edelsteen Laboratorium, Leiden). The presentations highlighted the latest developments in gemmology, notably Be-treatment of corundum and syntheses of diamond, and the implications to trade and certification, providing plenty of material for lively debate. Harry Levy, Chairman of the British Jewellers Association, closed the session with a summary of the views of the discussion groups.

The seminar was followed by the presentation of FEEG Diplomas to successful students from several European countries who had travelled to London for the occasion.



FEEG delegates at the Symposium (from left),
Secretary, Drs George J.W. Hamel (Schoonhoven, The Netherlands); Examinations Chairman,
Dr Ulrich Henn (Idar-Oberstein, Germany); FEEG Chairman, Dr J. Ma Nogués I Carulla
(Barcelona, Spain); Symposium organizer, Ian Mercer (Gem-A, London); and Treasurer, Drs
Johannes (Hanco) Zwaan (Leiden, The Netherlands).

Congratulations were given to all graduates, who had added this Diploma and the designation 'European Gemmologist' (EG) to their existing qualification. The day concluded with a dinner at the Royal College of Surgeons.

The social programme for the event had been specially planned to give delegates a taste of glorious - and not so glorious! — old London, starting with dinner at the Bleeding Heart Tavern on the corner of 17th-century Bleeding Heart Yard. The highlight of the event was a splendid evening tour of the new exhibition in the King's Library at the British Museum, 'Enlightenment: Discovering the world of the 18th century', led by curator Jill Holman. This exhibition is filled with surprises to be treasured in visitors' minds; they illustrate so well the great rush in discoveries and their utilization through the 18th century. We were reminded, next to an ancient winemixing vessel, that a 'Symposium' is truly a 'consortium of inebriated intellectuals'. Can this be true? The

tour was followed by a memorable repast in the Court Restaurant situated above the reading room at the Museum.

On the Sunday morning delegates gathered for a Thames Pub Walk with an extremely knowledgeable and entertaining guide who recounted London's history and legends as they strolled in the sunshine. For those remaining in London on the Sunday afternoon, there was a visit to the Fabergé exhibition in the Queen's Gallery at Buckingham Palace.

Gem-A wishes to thank all participating FEEG members and students for making this event the success that it was.

Mary Burland

Details of the FEEG syllabus and entry for the examinations are available from the Gem-A Education Office on 020 7404 3334emailgagtl@btinternet.com or visit our website at www.gema.info

SJH LECTURE

WILLIAM SPRATLING AND THE AZTECS: AN AESTHETIC COLLABORATION IN SILVER

Penny Morrill summarizes her lecture to the Society of Jewellery Historians held at the Society of Antiquaries on 12 January 2004.

"Not everyone can be a platero [silversmith]; only if you have the taste of it in your fingers, si tienes el sabor en los dedos." A silversmith who has been working silver in Taxco for more than half a century spoke recently of the devotion and passion he and other silversmiths have for their craft. Today, seventy years after the inception of Mexico's modern silver industry, hundreds of artisans continue to hammer silver into jewellery or hollowware in workshops all over Taxco, in Zacatecas, Guadalajara, and Mexico City.

William Spratling, responsible for initiating the handwrought silver industry in Mexico, arrived in 1926 and joined a group of Mexican and North American intellectuals and artists bent on enacting the goals of the Mexican revolution. Several years later, Spratling established the Taller de Las Delicias in Taxco, a workshop that provided opportunity for young apprentices to learn silversmithing and to eventually achieve the status of maestro.

In Taxco, silversmithing has never been just a livelihood, for silver carried the weight of Mexico's cultural ancestry. Before the Conquest and during the Colonial period, metal and stone were mined in Mexico and worked by artisans. The artists used their imagination to contrive what might exist and their hands produced it. This craft tradition, revived in this century in Taxco, has been, since 1931, one of Mexico's significant industries and exports.

Inspired by Pre-Columbian art, Spratling developed an aesthetic



William Spratling malachite and silver torque cuff c. 1950. Collection Goddard family.

Photograph by Matthew Marston.

vocabulary in his silver designs that, importantly, was familiar to the artisans who joined Las Delicias. Mexico's ancient art also provoked an imaginative, often powerful interpretation of modernist trends.

In Spratling's work, the reduction of form to the essential was successful, whether completely abstract or merely suggestive of reality, because the iconographic and stylistic elements translated so well into the modernist canon.

Spratling never abandoned his appreciation nor turned from the inspiration of Pre-Columbian codices and sculpture. In the 'fifties and up until his death in 1967, Spratling continued to move irrevocably towards a minimalist combination of simple lines and circular, curvilinear or spiralling shapes, often in contrasting stone or tortoiseshell and silver. At the same time, he was designing one-of-a-kind pieces in gold around small pre-Columbian stone carvings.

Using primary sources, recent interviews with silversmiths, and ex-amples of Spratling's designs, I

discussed the layers of meaning taken on by Spratling's work. I believe that the silver jewellery and decorative objects from Las Delicias were valued not just for the imaginative power of their design.

These objects, linked to their producers, became reminders of a place and of a people and a cultural tradition. Each brooch and candlestick was handwrought, incorporating the collaboration of designer, maestro and artisan, thus enhancing the object with the touch of the hand.

Following Spratling's lead, Mexican silver designers found inspiration in diverse concepts and trends that led ultimately to something entirely new. Their sources of influence, whether Pre-Columbian manuscripts, clay seals, and monumental sculpture or elements from the Arts and Crafts and Modernist movements. were modified by the fusion, transformed into a style that is totally Mexican. To this day, Mexican silver is instantly recognizable for its strength of form, imagery, and design impact.

FROM THE SALEROOMS

TREASURE REVEALED



Items from the Clive of India Collection. Photograph © Christie's Images Ltd 2004

Clive of India's Treasure to be exhibited and auctioned at Christie's London

A unique auction will take place at Christie's, King Street, London, on 27 April when a collection of rare Mughal treasures brought back from India by Robert Clive of India (1725–1774) will be offered for sale.

The highlight of the Collection is a splendid jewelled jade flask produced for the Mughal royal court in India in the 17th century (estimated to realize in excess of £1 million). Only two other extant jewelled flasks, now part of the Hermitage Collection*, are comparable in terms of rarity and splendour to that offered for sale.

Also offered from the Collection is a huqqa which is decorated with innumerable sapphires set off by a rich royal blue enamel ground (estimate: £50,000–£80,000). The historical dating on the jewelled huqqa base and the colouring of the enamel that makes it attributable to Lucknow, indicate

that it was probably bought and possibly specifically commissioned by Clive.

Further bejewelled treasures from the Collection include an unusual banded agate flywhisk inset with rubies, a pale green nephrite jade bowl and a delicately carved dagger. Dating to the reigns of the great Mughal Emperors Shah Jahan and Aurangzeb, the pistolgrip dagger (estimate: £35,000–£50,000) is decorated with elegant floral sprays and workmanship that points to the 17th century.

The Collection will be exhibited at Christie's, King Street, London, from 22 to 26 April.

*By extraordinary coincidence, the two related flasks that are part of the collection of The State Hermitage Museum in Russia will be on loan to the exhibition Heaven and Earth: Art from Islamic Lands at the Hermitage Rooms, Somerset House, London, from 25 March to 22 August 2004. Tickets are available in advance from First Call on 0870 906 3704.

SPRING/SUMMER 2004 SALE DATES

Bonhams, London

Montpelier Street, London SW7 1HH

Jewellery: 21 April, 12 May,
9 June, 30 June, 24 July
Tel: 020 7393 3970 (www.bonhams.com)

Christie's

South Kensington Tel: 020 7752 3269

Jewellery: 20 April, 28 May, 29 June
Fine jewellery 13 July
Antique jewellery 18 May,
King Street Tel: 020 7389 2388

Jewellery 16 June

(www.christies.com)

Dreweatt Neate, Donnington, Newbury, Berkshire

Priory sale with jewellery and silver: 20 April, 8 June Tel: 01635 553 553

(www.auctions.dreweatt-neate.co.uk)

Fellows & Sons, Birmingham

(by Direction of Pawnbrokers Nationwide): 8, 22 and 29 April, 13 and 27 May, 10 and 24 June, 8 and 22 July

Second-hand Jewellery and Watches

Antique and Modern

Jewellery: 3 June, 15 July
tel: 0121 212 2131 (www.fellows.co.uk)

Gardiner Houlgate,

The Bath Auction Rooms, Bath
Jewellery (unredeemed pawnbroker
sales): 16 and 28 April, 12 and 26 May
9 and 23 June, 7 and 21 July
tel: 01225 812912 (e-mail:
auctions@gardiner-houlgate.co.uk)

Hamptons, Godalming, Surrey

Jewellery: 21 July

tel: 01483 423567 www.hamptons.co.uk/fineart

Lyon and Turnbull Auctioneers, 33 Broughton Place, Edinburgh Fine Jewellery and Silver: 27 May

tel: 0131 557 8844 (www.lyonandturnbull.com)

Sotheby's, New Bond Street, London Jewellery: 20 April, 3 and 29 June tel: 020 7293 5000 (www.sothebys.com)

Dates correct at time of going to press but may be subject to alteration.

VIEWS OF THE EXHIBITION

The Tucson Show has become an annual pilgrimage for many Gem-A members throughout the world. Apart from the attraction of the myriad stalls at the many show sites throughout Tucson selling anything and everything of interest to gem and mineral enthusiasts, there are enough seminars and presentations to satisfy the most ardent gemmologist. We asked some of those visiting Tucson this year to give their impressions of the show and what particularly caught their eye.

Adrian Klein, FGA

Hatton Garden gem dealer and Vice-President of the Coloured Stone Commission of CIBJO

Fifty years ago Tucson was a sleepy town in Arizona, the last stop before the Mexican border. It was noted for its dry desert air, hot summers and pleasant winter temperatures. It was also noted for the annual Tucson Gem & Mineral Show which was held during the first week in February, when mineralogists and prospectors would haul their rock samples and crystals up from Central and South America to sell in makeshift pitches to the local populace.

About 30 years ago a small group of stone dealers decided to set up their stalls in one of the town's hotels during the Show to try and attract a wider market. That group became what is now the American Gem Trade Association (AGTA). Every year the group expanded and was eventually joined by other stone, pearl and diamond dealers from around the world. Only American Traders could join the AGTA but other organizations sprung up to cater for dealers from almost every country.



Looking down on the stands on the ground floor at the AGTA Show. (Photo: Kathy Kinev)

Today the Tucson Gem Show is the biggest fair in the world offering the widest variety of rocks, minerals and gemstones to the widest audience imaginable. To enter one of the main shows a business card plus photo ID is required but there are plenty of side shows where you can wander at will.

Recently the AGTA moved into the newly built Convention Center where US dealers can display their wares in the comfort and security usually found only in major city centres. New hotels have been built and the sleepy town has been transformed into a winter playground for the well heeled with an abundance of golf courses and spa resorts. It is interesting to observe the eclectic mix of visitors lining up at the registration desk.

You will see ponytailed hippy happy rockhounds mixed with suburban middled-aged couples who own maybe one 'Mamma and Pappa' store in a provincial town, mixed with very chic well turned out buyers from the major retail stores. It is also interesting to observe the different reactions from 'Jaw dropping awe' of the innocents, to the professional business-like approach of the seasoned buyers.

The variety of goods on show is staggering. You can spend anything from a few dollars to several hundred dollars for one stone. If it is jade you are after, there is a dealer who specializes in top quality jadeite and nephrite. His main showcase displayed an oval jade of superb luminous quality weighing 10.32 ct, priced as US\$58,000. One of the Sri Lankan dealers was showing an 82 ct golden pear-shape sapphire cut as a briolet. The depth of colour and sparkle was exceptional. Price? US\$45,000 for the stone. Natural, of course.

Not for sale was the Bismark Sapphire on display in the Smithsonian showcase. This is an exceptional oval Burma sapphire weighing 98.06 ct mounted in a classic Cartier diamond necklace. In the GJX tent a dealer from Hatton Garden was displaying a very rare 6.00 ct pink beryl. This year's hot sellers? Natural untreated blue and pink sapphires. Pink sapphires from Madagascar are much in demand this year and the prices are heading up.

Tucson is not the easiest destination for Europeans, but if you have an interest in gems or minerals it is a 'must see' at least once in a lifetime.

Gem-A at Tucson

As in previous years, Gem-A exhibited at the AGTA Show. Colin Winter, with his book *OPL* — *Students Guide to Spectroscopy*, was the guest author at a book signing session with champagne and chocolates.



Doug Garrod gives a video microscope presentation on inclusions



Gem-A member He Ok Chang from Brazil visiting the Gem-A stand. Pictured with her (from left) Doug Garrod, Alan Clark and Ian Mercer.

Doug Garrod gave a presentation during the Show entitled 'Everything included'. Using a video microscope, Doug compared natural and synthetic specimens of ruby, sapphire and emerald, and demonstrated how similar in appearance the synthetic counterparts could be.

Tracey Jukes, BSc Hons, FGA Gem dealer

At the Tucson Gem Fair you can buy everything from a cubic zirconia to a 40 carat Kashmir sapphire, and from a calcite specimen to a whole Tyrannosaurus Rex (shipping not included!).

I have been attending the show for many years, and this year I noticed that the jewellery aspect was becoming more prominent (it had always been controlled before — it is, after all, a gem show). Hopefully this trend will not continue as we already have enough jewellery shows.

The hot buy was fancy coloured sapphire, although care was needed to avoid the diffusion treated stones; if it didn't look quite right, it probably wasn't — mother nature is miraculous, but even she has limits. Tanzanite abounded again which is so popular in the States, but there again there were many stones that were synthetics

of various types. I bought a lovely 9x7 mm oval from a bona fide dealer for \$10 that looks exactly the same as the equivalent natural stone that cost me considerably more. The old adage 'if it looks cheap beware' is true here as much as anywhere. Common sense will guide you, especially when you see things labelled 'natural blue topaz, origin Sri Lanka' on a vibrant piece of classic 'London blue'. Don't however ask if the 5 ct sapphire you are contemplating buying is VS1 as overheard on one stand; they may get an inkling that you are not

the most expert of coloured stone buyers! Spinels were popular but expensive, the excuse being that it is impossible at the moment to go to Burma and then into the USA with a Burma passport stamp due to the deteriorating relationship between the two countries. There is at present a trade embargo between the USA and Burma; no Burmese goods should be imported into the USA at present, although I saw a lot of Mong Hsu-looking ruby, perhaps it was all Vietnamese?

So is the mammoth (for sale as well) trip worth it? Yes, everybody should go at least once as you will see things here that you would normally only see in a museum, and they are for sale! Don't buy anything serious unless you really know what you are doing, but I guarantee you will exceed your baggage allowance on beads, minerals and carvings, which are much cheaper than in the UK. You need the stamina to carry them back and, if you have overindulged, to spend two hours in customs clearing them back into the UK — nobody can contemplate shipping anywhere outside the USA.

Next year the show will be split, and instead of being able to walk from the three major shows and the



Just a few amethyst cathedrals on offer from a stand on the 'Strip'. (Photo Tracey Jukes)

'strip' (where all the fun things are), one of the shows is moving out of Tucson to one of the resorts. I think this will change the cosy nature of the show, but we shall see.

Alan Hodgkinson, FGA, DGA

Gemmologist and President of the Scottish Branch of the Gemmological Association

Tucson is all about people and gemstones, or in numerical terms, all about gemstones and people, but the two are inextricably linked.

Tanzanite still plays a dominant role in the international gem trade, as witness a new simulant in the form of YAG, which conveys a very good likeness, its high refraction and consequent reflections and dispersion (0.028) combining to suggest a dichroic effect to the unaided eye.

A display of green beryls from Jaipur took the eye and one was offered to me as a gift. The lustre seemed a little lacking, and a refractometer confirmed this by registering a 1.434 reading for fluorspar.



Green fluorite being offered as green beryl. (Photo: Alan Hodgkinson)

The Morenci is a copper mine not far from Tucson. Turquoise from the mine is porous but very attractive when stabilized — as is all of today's turquoise, most of which now comes from Arizona, Mexico and New Mexico. No staining agent is used. The stabilization process

simply fills the characteristically porous material, and the resultant lustre asserts the colour tone as a more saturated display.

A new aggregate from the mine was extremely colourful with its combination of red cuprite, green malachite and blue azurite. Larger specimens, several feet in length, provided a mixture of all the separate minerals along with plenty of the raw copper metal itself.



Copper aggregate of cuprite, malachite, azurite, turquoise and copper itself. (Photo: Alan Hodgkinson)

Diamonds there were aplenty, but synthetic diamonds are beginning to make more of an impact, and there were plenty to see in all colours but especially the Type Ib yellows.

A few years ago it was forecast that synthetic diamonds would not make much impact on the gem market, but the forecasters did not see that the impetus would come from the industrial sector which is devouring diamond wholesale with the insatiable appetite of the new information technologies. Four American, two Russian and one Korean company were exhibiting their synthetic gem diamond products. A newcomer was Apollo with their chemical vapour deposition (CVD) products (the diamond-coated frying pans of tomorrow). Grown on diamond seeds at temperatures in the region

of 1200°C, CVD does not require high pressure, so costs are lower compared to orthodox methods of diamond crystal growth. Produced in sizes of up to 10 mm width and 2.5 mm depth, the CVD Type IIa diamond monocrystal growths are near colourless, brown to black. But already HTHP treatments are improving the product to colourless gem-quality goods, and these processes are still developing. With mass production around the corner, prices will come down and the fringe area then beckons the entrepreneur, who can see a market opportunity for the crystals to be faceted and promoted in the jewellery trade. This is exactly how CZ came to invade the market, and now costs US\$1 per carat. The Diamond Trading Company and the world's leading gemmological laboratories are working hard on the establishment of distinguishing features, and before long there will be more accessible clues which give pointers to the separation of natural from these new synthetic diamonds

The Tucson Gem and Mineral Fair provides a whole range of lectures and panels which look at many aspects of gemmology. It is from these speakers that some of the more important truths are shared. Ken Scarratt was discussing the appearance of the new natural blue sapphires with colourless rims which are obviously unnatural. The exact cause of this is still under examination, but to examine these stones and the other yellow, pink and orange corundum products, with their lattice diffused colours, it is necessary to spend more and more time with the microscope. As such work is next to impossible without immersion in methylene iodide, the fume exposure to the vertical microscopist becomes a greater

threat to health, and Scarratt made the point that extensive work should be undertaken on a horizontal microscope to avoid such fumes.

On the instrument front one development stood out. Nick Michailidis has been working on a simple spectroscope/television monitor connection for years. His persistence has paid off and his new unit was on sale at Geoff Wildman's Gemological Instruments stand. The results are exceptional. First the observer can look inside the spectroscope unit and see the total colour spectrum with its well known absorption patterns in the visible. However a black-and-white camera can see in the dark beyond our eye limits and, via a switch, the spectrum shows up dramatically on the black-and-white monitor, and sees absorption and fluorescence lines from 350 to 1000 nm. The ruby doublet at 693, 694 nm is clearly defined. It was thrilling to see both the results on the screen and the smile on the face of Nick Michailidis. I looked first at the complex spectrum of a lilac/pink YAG doped with didymium.

The results are clearly seen in the photo on the screen in the main area of absorption, and especially the dominant 586 nm line at the yellow end of the green. The complete unit incorporates an internal telescope to magnify the spectrum across the TV monitor. The operator rotates the spectrum as required until a line of particular interest tallies with a white reticle on the rim. By an electronic system, the line is scanned and registered as a nanometre reading on a prominent dial. Next the instrument scanned the YAG into the near infrared and recorded a line at 806 nm. The error factor of +2 nm was

Gem-A USA Dinner

The Gem-A Annual Networking Social in Tucson was again a huge success this year with even more international participants. Many gathered from not only America but also Australia, Austria, Canada, China, Madagascar, and the UK, to share in a familiar and loved passion gemmology. Guest speaker Gabi Tolkowsky gave an inspirational speech about the beautiful art within our trade, leaving listeners in awe as they reflected on their own fulfilment of career choices in our industry. An event of elegance with professional class. Anne Dale

Anne Dale Director, Gem-A USA



Gem-A USA Dinner. (Photo: Anne Dale)



Guest speaker Gabi Tolkowsky with Theresa Shannon, a member of the Gem-A USA-Advisory Board.

no problem. As the spectroscope is of the diffraction type, its linear layout perpetuated the 2 nm, and was later corrected without much effort. It is in the near infrared measurements of 800 to 1000 nm that some of the distinguishing features show up for synthetic and HPHT diamonds, so the tool has a potential to cope with some of the new developments, apart from giving far more sensitive access than the human eye to the absorption spectrum.

The new Challenger Diffraction Grating Digital Scanning Spectroscope complete with TV Monitor is US\$2,400, which made it one of the Tucson bargains of 2004.



The Challenger spectroscope linked to a black-and-white TV monitor displays spectacular views of the absorption spectrum from 300 to 1000 nm from a standard diffraction spectroscope.

(Photo: Alan Hodgkinson)

Kathy Kinev, FGA

Jewellery designer and maker

A regular visitor to the Tucson Gem Show, I take the opportunity to search for new stone cuts as the inspiration for jewellery designs or as specimens to put into my collection.

Those who are not lucky enough to have visited the Tucson show may not realize that this annual event should in fact be referred to as 'shows'; there are 37 shows running at essentially the same time.

My favourite place is the AGTA show in the Tucson Convention Center where I found some exciting new cuts: a Wobito Snowflake is one that stands out, which looks like a fancy flower. Also the flair square, a stone with a slight point between the points of the square which is made by the House of Williams in the Holidome, is popular with my clients and it comes in blue topaz.

I found lots of new material in the GJX show (I waited about 45 minutes to get in!). It seems that the convex cut that was debuted at the Tucson show a couple of years ago has trickled down into the lower ends of the buying spectrum as you could buy it at all price ranges from various dealers.

Catriona McInnes, FGA

Gemmology tutor and Secretary of the Scottish Branch of the Gemmological Association.

This was the 50th Anniversary of the Tucson Gem & Mineral Show, which has grown to be the world's largest show of its kind.

The Tucson Gem and Mineral Society celebrated its golden anniversary by showcasing the largest collection of gold ever displayed in the USA. The exhibits ranged from millions of dollars in sunken treasure and rare gold

nuggets, to the wedding ring of Wyatt Earp and the gold nugget that started the California Gold Rush.

One stand at the Show had for sale a few crystals and cut stones of genuine hiddenite, the rare, intense emerald-green, chromiumbearing variety of spodumene from North Carolina. The company are working the original area near the town of Hiddenite and this was their first find in two years. The colour is so intense that the pale green spodumenes from Brazil and Afghanistan, often represented as hiddenite, pale into insignificance.

At the AGTA Show good quality red spinel from Myanmar was offered by a few dealers, with prices starting at \$1000 a carat for the better stones.

A few dealers had crystals and cut stones of pezzottaite from Madagascar, although reportedly there has been no new find. The colour was good, but the cut stones were very included.

It was the first time I had seen Chatham Created Diamonds in pink, blue and yellow. These synthetic diamonds are produced by the HPHT method and are of high clarity (some graded as VVS). See http://www.chatham.com/card%20back.html

Leslie & Company have produced blue and green diffused topaz by the Pollak heat diffusion method for several years. They have now champagne, red and bi-colour diffused topaz. Their stones are very popular with the cruise market. See http://www.leslieandco.com/ products.html

Gail Brett Levine appointed Executive Director of the NAJA

Congratulations to Gail Brett Levine, a member of the Gem-A USA Advisory Board, who was appointed the new Executive Director of the National Association of Jewelry Appraisers (NAJA) at their Annual Conference held during the Tucson Fair in February. Gail replaces James V. Jolliff who was stepping down from the leadership role after 12 years as Executive Director.



Gem-A USA Director Anne Dale (left) and Gail Levine at the Gem-A USA dinner.

After years as invited guest speaker to NAJA conferences, Gail joined the NAJA in 2002 because she was attracted to an appraisal organization whose only discipline is the gem and jewellery specialty. All her years of learning, lecturing, teaching and participation in leadership training make her well equipped for the position of Executive Director of the NAJA.

SILVER AND THE CHURCH: TREASURES FROM LONDON CHURCHES



Chalice, silver-gilt and gem-set, John Herdman, 1884. From St Mary Magdelene, Paddington. © The Goldsmiths' Company.

The exhibition is to be held in celebration of the 14th centenary of the foundation of St Paul's Cathedral and the reorganization



Bishop's morse (cope clasp), gold and jewels, Charles Krall, London 1905. Lent by St Paul's Cathedral. © The Goldsmiths' Company.

of the diocese of London, and will demonstrate the strong links which have existed between goldsmiths, the City of London and the Church through the past 1400 years. Silver in the exhibition will range from across the history of the diocese and will include some magnificent pieces with highly distinguished provenances. In addition there will be a strong emphasis on contemporary church including important commissions by eminent British silversmiths. Of particular interest to Gem-A members will be the gem-set items in the collection, including a chalice and Bishop's morse (cope clasp).

19 April to 15 May 2004

Goldsmiths' Hall, Foster Lane, London EC2V 6BN t: 020 7606 7010 w: www.thegoldsmiths.co.uk

HERMITAGE AMSTERDAM

First exhibition devoted to Greek gold

The first phase of the Hermitage Amsterdam opened on 28 February. Small temporary exhibitions drawn from the rich collection of The State Hermitage Museum in St Petersburg will be presented in six rooms. Each exhibition will be on view for around five months. For the inaugural exhibition the first Greek gold jewellery from the treasure rooms of the Hermitage will be coming to Amsterdam. This Greek gold was found during various expeditions to the Black Sea. where there were Greek colonies. This spectacular jewellery dates from the 6th to 2nd centuries BC, and will include bracelets, earrings, necklaces and spectacular golden wreaths.

For further information visit www.hermitage.nl

ROCK 'N' GEM SHOWS

Newark Showground, Winthorpe, Newark, Notts (Off A46) 24-25 April

Alexandra Palace, Wood Green, London 8-9 May

Kempton Park Racecourse, Sunbury-on-Thames, Middx (A308) 5-6 June

Newcastle Racecourse, High Gosforth Park, Tyne & Wear 12-13 June

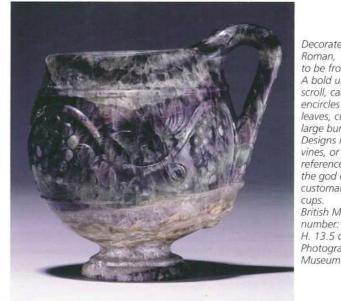
All shows open 10 a.m. to 5 p.m.

Enquiries to HD Fairs Ltd t: 01628 621697 e: info@rockngem.co.uk w: www.rockngem.co.uk

THE BARBER CUP: A NEW ACQUISITION FOR THE BRITISH MUSEUM

The Greek and Roman Department of the British Museum has acquired an extremely rare and interesting Roman vessel dating to the 1st century AD, a decorated cup carved from fluorspar (fluorite). Banded in vibrant shades of purple and green, it has a single handle, a rounded, incurving body, and a low pedestal foot. In plan view, it is oval rather than circular, no doubt reflecting the shape of the original block of stone from which it was made. The cup is decorated in low relief with a bold design of vine leaves, grapes, and a bearded head, probably of Dionysus.

Costly and beautiful table vessels in gold and silver, and in quartz and other precious varieties of stone, were an important means of displaying the wealth and cultivated taste of their owners in the Roman period. However, they are uncommon survivals compared with the humbler pottery and glass utensils that echo their forms and styles of decoration. Pliny wrote in the 1st century AD of vasa murrina, gemstone vessels that were rare and exceedingly expensive, and which were said to improve the flavour of wine drunk from them. The material in question was almost certainly fluorite, which occurs



Decorated fluorite cup, Roman, 1st century AD, said to be from Svria A bold undulating vinescroll, carved in relief, encircles the cup, featuring leaves, curling tendrils and large bunches of grapes. Designs incorporating vines, or with other visual references to Bacchus, the god of wine, were customary on Roman wine-CUDS British Museum registration number: GR 2003.12-2.1 H. 13.5 cm at the rim. Photograph © the British

in a wide range of colours, often attractively zoned and banded, and is capable of taking a high polish. It is a soft stone, but its perfect cleavage makes it difficult to work, and the method used to help stabilize the material during the manufacture of modern vases of Derbyshire 'Blue John' is to apply resin and gentle heat. Assuming this method to have been used in antiquity, the resin permeating the stone might subsequently have imparted a distinctive flavour to the wine.

Detail of the decorated handle of the vessel, ornamented with tendrils and terminating in a bearded head, probably that of Dionysus (Bacchus), where the handle meets the body. Photograph © the British Museum

Only two Roman vessels of fluorite are known to survive. evidence, and the though circumstantial, all points to their having been discovered together in a Roman tomb in Syria during the First World War, after which they became separated in different private collections. The other cup, known as the Crawford Cup, was presented to the British Museum in 1971. It is undecorated, and is of chalice form, with two handles. The acquisition of its larger and more ornate fellow, to be known as the Barber Cup, is an event of great importance, reuniting two exceptional objects from a single archaeological context.

The cup has been purchased with the assistance of the British Museum Friends, the Art Fund, the Caryatid Fund and Mr and Mrs Frank A. Ladd. It has been named in honour of the outgoing Chairman of the British Museum Friends, Mr Nicholas Barber.

Catherine Johns

ORGANICS

VULCANITE OR GUTTA PERCHA?

Maggie Campbell Pedersen investigates these two materials used to imitate jet.

For some while there has been uncertainty about the nature of the material used to copy jet in the mid to late 19th century, with some people accepting that it was all vulcanite, and others believing that much was made using gutta percha, and is incorrectly labelled vulcanite. A few weeks ago I finally found some answers.

Vulcanite is made with common, natural rubber from trees of the genus *Hevea*. Gutta percha is also a rubber, from trees of the genus *Palaquium* or *Payena*. The two materials have the same chemical composition, though their molecular structure is different. This gives them different characteristics, and therefore they have been used for different purposes and products.

The rubber used for vulcanite (also called 'ebonite' by the rubber industry, and 'hard rubber' in America) tends to become sticky when warm, too rigid when cold, is difficult to mould and degrades on contact with oils. Vulcanization—that is, heating with sulphur—stabilizes the rubber. Gutta percha, on the other hand, is used without vulcanization. It takes an excellent impression without additives being used, as it is hard at room temperature.

Visual examination will show that old items that have been moulded from gutta percha display a surface crazing not found on vulcanite objects, but that vulcanite items fade to a khaki colour due to the material's sulphur content. Also, gutta percha breaks with a surface that resembles sugar crystals,



Slightly faded vulcanite (left) and natural colour gutta percha.

whereas vulcanite breaks with a clean, smooth surface.

A hot-point test will result in vulcanite emitting a rubbery smell with a strong overtone of sulphur, whilst gutta percha emits only a rubbery smell. It is, however, often not necessary to use a hot-point, as simply rubbing the object hard

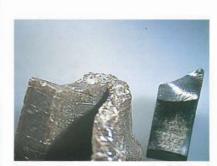


Crazing on surface of gutta percha.

with your thumb will usually give the same results.

Experiments were undoubtedly carried out on gutta percha, including vulcanization. It would be impossible to tell the difference

between the resulting material and vulcanite by testing, as vulcanization destroys the structure of the rubber; both would have the same chemical composition; and



'Sugary' fracture of gutta percha (left) and clean fracture of vulcanite.

hot-point tests would give the same result. But it was not necessary to vulcanize gutta percha in order to mould it and common, natural rubber (and therefore vulcanite) is, and always has been, a much less expensive material. The likelihood is therefore remote that gutta percha was used for items where vulcanite could be used instead.

LETTERS

Both materials are naturally dark, but could be dyed black. Gutta percha can be filtered to make it white, for example for use as golf balls - the best golf balls were made always of this material. It was also used for bookbinding, in fuse boxes, for root canal work in dentistry, and, most notably, for underwater cables. The material keeps extremely well in dark, damp conditions, and was the breakthrough needed for telecommunication when it suddenly became possible to insulate cables and lay them across ocean beds. By the end of the 19th century there were more than a quarter of a million miles of submarine cable insulated with gutta percha. In Scotland it was also used for official seals (which were dyed red), and for flower binding - areas where, along with expensive golf balls, the material is still used. Most gutta percha today comes from Central and Southern America, and little or none comes from the original source, the Far East.

Early uses of vulcanite included linings for fire hoses, tyres, electric insulation, and many moulded objects including, of course, jewellery. Dyed red, it was used for dentures. Today the material is still used for tyres and such items as boots, mats and elastic bands, though the rubber used may be synthetic rather than natural.

In the 19th century 'gutta percha' became a generic term for any dark coloured material that could be moulded, especially in America. This is probably the source of the misconception that vulcanite iewellery was in fact made from gutta percha.

I am indebted to Richard Chambers, formerly chief chemist at 'Telecom' - a telegraph construction and maintenance company with gutta percha plantations in Malaya - for the information on gutta percha, and for the loan of items for photography.

LETTER TO THE **EDITORS**

Request for information on Maltese jewellery, 1530-1798

I have recently become a member of the SJH. My interest in jewellery history stems from the fact that I am currently reading for a Masters degree in Art History at the University of Malta. My research topic focuses on the Art of Jewellery in Malta during the Knights' Period (1530-1798), a subject which appears not to have received any academic attention so far. I am researching under the direction of Prof. Mario Buhagiar of the University of Malta as well as Ms Clare Phillips of the Victoria and Albert Museum, who has been appointed co-tutor for the duration of my studies.

I believe that many jewels made in Malta in the 16th -18th centuries and portraits depicting such pieces may be present in collections, public and private, in Europe. I would be very grateful indeed to hear from anybody who has relevant information.

Francesca Balzan 236 St Paul Street Valletta VLT 07 Malta

e.mail: francesca@waldonet.net.mt

Gem-A Photo Competition 2004 **Imaginative Images**

Creative gem cuts and mineral carvings, fanciful inclusions, gems as the inspiration in jewellery design; let your imagination run away with you in this year's Photo Competition.

All entries will be judged for originality, beauty and gemmological interest.

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First prize: Second Prize: Third Prize:

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To enter, send prints or slides of pictures taken by yourself together with the entry form to reach Gem-A by not later than 30 April 2004.

WANT TO KNOW MORE?



Gem and Ornamental Materials of Organic Origin

Further information about vulcanite and gutta percha is given in Maggie's new book Gem and Ornamental Materials of Organic Origin, 2004, Elsevier Butterworth-Heinemann, Oxford, ISBN 0 7506 58525. A review of the book was published in the January 2004 issue of The Journal of Gemmology.

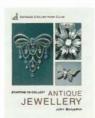
"For the antique dealer, jeweller and gemmologist this book would be a most useful addition to their bookshelves."

E. Alan Jobbins

The book is available at £33.25 (plus postage and packing) from Gem-A Instruments, 27 Greville Street, London EC1N 8TN t: +44 (0)20 7404 3334 f: +44 (0)20 7404 8843 w: www.gem-a.info

BOOKSHELF

STARTING TO COLLECT ANTIQUE JEWELLERY



J. Benjamin, 2003. Woodbridge: Antique Collectors' Club pp 191. Illustrated in colour. Hardcover, ISBN 1 85149 407 3. Price £12.95.

Anyone passing the window of a specialist jeweller might very well stop and wonder why so many jewellery books cost so very much. This first-class guide tells readers most of the things they most want to know and at a reasonable price.

The standard of photography is high, each chapter concludes with a short list of references and some of the most celebrated designers and artists are featured in a section of short biographies. After a discussion of gems and antique jewellery in general the text is arranged chronologically with special treatment of various distinct types: these include mosaics. cameos and intaglios, jewelled flora and fauna and Scottish jewellery. Base metal jewellery and materials are also covered as well as the jewellery of sentiment and love. Short notes on valuations and cleaning conclude an attractive and readable book. I could find no mention of the Society of Jewellery Historians and perhaps there could be more references, but for the beginner this is a good start.

Michael O'Donoghue

Starting to collect antique jewellery available at £12.95 plus postage and packing from Gem-A Instruments,

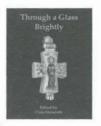
t: +44 (0)20 7404 3334 f: +44 (0)20 7404 8843

e: gagtl@btinternet.com

THROUGH A GLASS BRIGHTLY

Studies in Byzantine and Medieval Art and Archaeology presented to David Buckton.

Edited by Chris Entwistle, 2003. Oxbow Books, 235pp with 230 black and white figures, plus 60 colour images on 16 pages. Hardback



with pictorial boards, 28½ x 22cm. ISBN 1-84217-090-2. Price £50.00*.

This volume of twenty-five papers commemorates David Buckton's long career as a curator at the British Museum and was presented to him to mark his retirement from the BM, but certainly not from continued scholarly activity. For over twenty years David was the curator of the British Museum's Early Christian and Byzantine collections and the National Icon collection. SJH made a financial contribution to the volume in recognition of David's joint editorship of the first three volumes of the Society's journal, Jewellery Studies.

The papers focus on the material culture of the late Roman. Byzantine and medieval world. There is a particular emphasis on the decorative metalwork and enamels of these periods, but also included are papers on ivories, seals, goblets, caskets and architecture. Whilst all the papers are fascinating, and some set forth major reinterpretations of objects in the BM's Byzantine collections, there are several of particular gem and jewellery interest: Bodychains, Hellenistic to Late Roman by Catherine Johns; Sources of cloisonné enamel: some early fused gold and glass inlays by Noël Adams; Middle Byzantine (10th-13th century AD) stamp seals in

semi-precious stone by Jeffrey Spier (SJH did ask that 'semi-precious' should be changed!!); Some late 10th and 11th century cloisonné enamel brooches and finger-rings from Denmark by Fritze Lindahl; Containers for Agnus Deis by John Cherry: Abbé James Hamilton: Antiquary, patron and the arts, Victorian Anglo-Catholic by Paul Corby Finney (this paper includes much on intaglios and cameos, including two full page colour pages showing twenty four items); 'Lay not up for yourselves treasures upon earth': the British Museum and the second Cyprus treasure by Chris Entwhistle. All of the other papers are of great decorative arts interest. with much about silver, enamel and glass (there is an excellent paper on 19th century Venetian glass by Judy Rudoe, which includes details of Alessandro Castellani's role in the design, manufacture and marketing). There is also a fascinating paper on a Byzantine sundial by Silke Ackermann. All of the papers are well illustrated with black and white figures in the text.

The colour pages are at the end of the book, and the excellent photographs are beautifully reproduced. It however, is, that the extremely irritating numbering and captions on the colour images bear no relation to the number or title of the paper that they illustrate, so that one cannot refer back from an image to the relevant text. The papers vary in length from four to thirteen pages making the book ideal for dipping into. Highly recommended.

Nigel Israel

*SPECIAL OFFER to SJH Members:

Through a Glass Brightly at only £30 plus postage and packing Order must be submitted on enclosed Special Offer order form (circulated to SJH members only)

GEM-A BRANCH NEWS

MIDLANDS BRANCH

The Naughty Nineties

In his presentation on 31 October Brian Dunn, Senior Valuer at Garrard & Co. and Chairman of the NAG Valuations Committee, gave a fascinating résumé of life in the 1890s. He detailed the many new inventions that came on the scene during the decade, the influential people of the time. With the development of local councils impressive buildings were financed and the first 'tube' was opened in London the Northern Line — to ease the congestion on the roads with horsedrawn trams and buses.

In the 1890s the Arts and Crafts movement influenced designs. Pearls were the height of fashion and art

photography postcards centred around Paris. At this time the jewellers' catalogues were thick with pages of designs and items with mixed stones were popular. Between 1880 and 1890 gentlemen's stickpins were fashionable, particularly horseshoe shapes. Fashions and jewellery were elegant and the current pastimes included visits to the theatre and music halls.

The History of Gem and Mineral Deposits in Scotland

On 28 November Brian Jackson, Curator of Gems and Minerals of the National Museums of Scotland and Chairman of the Gem-A Scottish Branch, gave a presentation on the

gems and minerals of Scotland.

Jet, one of the earliest materials discovered in Bronze Age burial sites, had been found to be a reasonable match with Whitby jet, suggesting that there may have been trade routes between Orkney and Whitby. Amber had been washed up in the north west of Scotland and there was evidence of pearls from the Scottish rivers during pre-Roman and Roman times. A gold cast brooch set with amber was illustrated as an example of Anglo-Saxon jewellery. In the 1880s bloodstone, jasper and agate were popular with artisans, seal engravers and makers of pebble jewellery.

Aguamarine and topaz occur in the Cairngorms in the quartz veins, while beryls are found in the Highlands. Although pyrope garnets can be found in the rocks and dark sands they are variable in colour. Amethyst geodes are prevalent in Scotland, and large agates together with jaspers are common in old Victorian workings on the Campsie Fells. Pink sapphire has been found but not of gem quality, also zircons, dark green spinels and marbles

Brian recounted some of the difficulties he had experienced when searching for examples of minerals, and the excitement felt when something outstanding had been found. His enthusiasm and love of his subject was very obvious.

SCOTTISH BRANCH

Where are they now and why were they ever made?

This was the theme of a talk/demonstration given by Michael O'Donoghue to the Scottish Branch of the Association on 20 January. Both loose crystals and fashioned stones were examined. and a display case contained specimens which could not so easily be tested on account of rarity or fragility. The aim was to remind participants that a number of substances have been grown since the end of the war (and particularly in the 1960s) with the intention, not of providing new material for ornament, but to test for laser, transducer or ferroelectric properties or potential. Many of these have long since been established so that continuing research may be less urgent and some have been discarded on account of unexpected proclivities.



GEM-A BRANCH NEWS

The audience were intrigued by the many samples Michael displayed, particularly red corundum with manganese dopant giving a fine red (crystals were too fine to cut), and very bright transparent yellow facted stones with high dispersion and a density over 7 which were bismuth germanates (both of which had been grown for their electro-optic properties). Also displayed were several transparent doped fluorides, a dark red proustite and various laser materials in faceted form, and doped lithium niobate in a deep and beautiful violet colour. The difference between aluminate and yttrium aluminium garnet (YAG) was explained and the many substances (once more familiar to gemmologists than they may be today) which had also been prepared in ceramic form for their ferroelectric properties were discussed.

Perhaps not the stars of the show but of great relevance were the photocopied title-pages of some impossible to obtain books on crystal growth and applications: on actual view was a presentation copy of Synthèse du rubis by the author Frémy to the Natural History Museum, Paris, where he worked. This

is the famous account of early ruby growth where only thin bladed crystals were grown and those present were able to examine some asgrown examples.

SOUTH EAST Spectroscope workshop

Colin Winter gave a 'Spectroscope Workshop' at Christie's South Kensington, on 7 September 2003. The meeting was well attended and Colin gave a power-point presentation, quiz and practical demonstration on many of the aspects of the direct vision hand-held spectroscope which coincided with the release of his new book A Students' Guide to Spectroscopy'. Claire Scragg won the quiz and was presented with a signed copy of the new book. The Committee wish to thank Christie's for allowing the use of this venue for branch meetings and for the facilities provided.

Jem Jumble

The Branch held a well attended 'Jem Jumble' on 19 October at the premises of SEMTA in Old Queen Street, London, which was actively supported by both vendors and buyers from the membership. An enormous variety of



South East Branch members foraging at the Jem Jumble.

books and instruments both new and old, crystals, cutting and cabbing rough, minerals, beads and cut stones were bought and sold. The Branch Officers wish to thank Dr Michael Sanderson for allowing us to use this prestigious venue. Another similar event will be organized in about six months' by popular request.

Cartier: the 20th Century

The Branch AGM was held on 7 December at Christie's South Kensington (as reported in the January issue of the Journal of Gemmology). Colin Winter, the Branch Chairman, then introduced the guest speaker, Terry Davidson, Chief Executive Officer of Gem-A, who gave a power-point

presentation entitled 'Cartier: The 20th Century' featuring the art and skill of Cartier jewellery and objets of this period. Terry enthralled the audience with photographs from the 1920s to the 1990s accompanied by historical information, including photos and anecdotes of many of the Windsor pieces from the grand tour of Europe and later 'Panther' period.

After the talk sherry and mince pies were served, and the membership was given a private view of the forthcoming Christie's Jewellery Sale which was to be held two days later. The Branch officers are most grateful to Christie's for allowing the use of their premises and for permitting an 'afterhours' view.

9TH ANNUAL CONFERENCE

30 April to 3 May The Lovat Hotel Glasgow Road, Perth

John I. Koivula – Keynote speaker Significant inclusions in diamond, ruby, sapphire and emerald The wonderful world of inclusions

Peter Buckie
Valuations — are they worth it?

Alan Hodgkinson These are a few of my favourite things

Elisabeth Strack
Looking into pearls

Colin Trowler
Diamond underfoot, bullets
overhead

Chris Walton Recent technical developments in jewellery

Workshop sessions will be held on the Sunday afternoon and a field trip on the Monday (weather permitting).

For further details contact Catriona McInnes on 0131 667 2199 or visit the Branch website at www.scotgem. demon.co.uk

SOUTH EAST BRANCH CONFERENCE

Idar-Oberstein 28 to 31 May 2004

Speakers:
David Lancaster,
Bernd Munsteiner, Gerhard
Becker and Julius Petsch

The topics will include:

Late 19th and early 20th century jewellery and objets d'art

21st century gemstone design and cutting

A history of the European gemstone industry

Modern gem mining and processing

Also included:

Visits to local workshops, showrooms and studios

Guided visits to the world famous Edelstein Museum, traditional cutting mills and a gemstone mine

Many opportunities to browse and buy rough and cut gemstones, minerals, fossils and jewellery.

For further details visit the Branch website at www.ga-seb.org or call 01372 360290.

Answer to Puzzle in the December issue

See you later calculator

Let's call the stones A, B, C, D and E, with A the cheapest and E the most expensive.

Larry tells me that the cheapest two stones (i.e. A + B) cost £168, the next cheapest (B + C) £294 and the most expensive (D + E) £522. Since all five stones cost £882 and A+B = £168 and D+E = £522, C must cost £882 – (£168 + £522) = £192. So B costs £294 – £192 = £102 and thus A costs £168 – £102 = £66.

We can go on to work out the cost of each stone (not as straightforward as you might think), but luckily that isn't really necessary. Now we know the cost of A (£66) and the cost of all five (£882), the four stones B+C+D+E must cost £882 – £66 = £816 in total. If I have bought two of these stones for £360 then the remaining two must cost £816 – £360 = £456.

Jack Ogden

MARCH PUZZLE



Royal Lineage

In the sun-drenched kingdom of Admirhistan preparations are underway for the 18th birthday of the vain young ruler, the Khan el Khahili Mah Bhatat. The British Ambassador, with the help of boffins from Oxford, has designed a perfect gift - a small portrait of his majesty in a gem-encrusted, rectangular frame, ten gems in all, arranged as shown in the illustration above. In the holy book of Admirhistan ten gems are given mystic numbers: diamond 10, ruby 9, sapphire 8, pearl 7, emerald 6, amethyst 5, aquamarine 4, garnet 3, citrine 2 and diffusion treated padparadscha 1.

The boffins had worked out that one of each of these gems could be used and the ten arranged so that the lines of three along the top and bottom each added up to 18 — the ruler's age — and the same was true of the four down each side. But the Ambassador has lost the bit of paper where he jotted down the arrangement. All he remembers is that since the diamond was kindly provided free by the Diamond Trading Company, it had to be top centre. What was the arrangement?

Jack Ogden

WHAT'S ON

GEMMOLOGICAL ASSOCIATION AND GEM TESTING LABORATORY OF GREAT BRITAIN

Midlands Branch

Friday meetings will be held at the Earth Sciences Building, University of Birmingham, Edgbaston.
Admission £2 for a member. For details call 0121 445 5359.

Friday 26 March. CHRIS TARRATT. The Hallmark

Friday 30 April. Branch AGM followed by TERRY DAVIDSON. Bond Street Jewellers of the 19th and 20th centuries

Saturday 26 June. Barnt Green Summer Supper Party

Midlands Gem Club

For details contact Paul Phillips on 02476 758940 email pp.bscfgadga@ntlworld.com

North East Branch

Meetings to be held at Gem-Ro Associates, Millshaw, Leeds. Admission £5.00 Gem-A members (£7.50 non-members). For further information call 0113 2070702.

North West Branch

Meetings will be held at Church House, Hanover Street, Liverpool 1. For further details contact Deanna Brady on 0151 648 4266.

Wednesday 19 May. MARK C. BARROWS. Diamonds.

Wednesday 16 June.
DOUG MORGAN.
Some gemmological and lapidary
diversions.

Scottish Branch

For details call Catriona McInnes on 0131 667 2199, e-mail scotgem@blueyonder.co.uk

SCOTTISH BRANCH CONFERENCE*

The Lovat Hotel, Perth 30 April – 3 May

Speakers:
JOHN KOIVULA, PETER
BUCKIE, ALAN HODGKINSON,
ELISABETH STRACK, COLIN
TOWLER, CHRIS WALTON

South East Branch

For details contact Colin Winter on 01372 360290, e-mail info@gaseb.org or visit the branch website at www.ga-seb.org

SOUTH EAST BRANCH CONFERENCE*

Idar-Oberstein, Germany.

28 May -31 May

Speakers:
DAVID LANCASTER,
BERND MUNSTEINER,
GERHARD BECKER
AND JULIUS PETSCH

South West Branch

Contact Richard Slater on 01635 553572.

* Further details of Branch Conferences given on p.23

SOCIETY OF JEWELLERY HISTORIANS

Unless otherwise stated, all Society of Jewellery Historians' lectures are held at the Society of Antiquaries, Burlington House, London W1 and start at 6:00 p.m. sharp. Lectures are followed by an informal reception with wine. Meetings are open only to SJH members and their guests. A nominal charge is made for wine to comply with our charity status. Further details of the June meeting are given on p.7.

6 April. DR DAVID HUMPHREY The Three Brothers jewel

25 May.
MARJAN BOOT
Contemporary jewellery in the Stedelijk Museum

29 June.SARAH NICHOLLS
Aluminium jewellery

28 September.
STEFANO PAPI
Italian Court Jewellers and the House of Savoia

12 October.

VENETIA PORTER and SUSAN LA NIECE Islamic jewellery from a 17th century ship in Salcombe Bay

30 November.
IOANNA LALAOUNIS
The Ilias Lalaounis Jewellery Museum collection



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