

Gem & Jewellery News

VOLUME 2 NUMBER 3

JUNE 1993

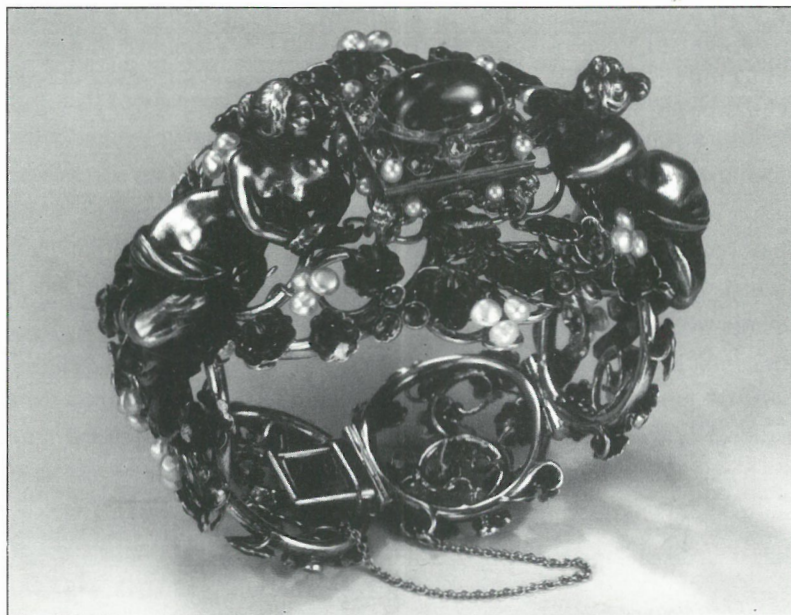
TREASURES OF PFORZHEIM

Pforzheim, known as *Gold-Stadt*, has been the centre of the German jewellery industry for centuries. The town's jewellery museum began as two separate collections that dated back to the nineteenth century: one built up by the arts and craft school and the other by the Pforzheim Arts Society. These two jewellery collections were eventually brought together and, in 1938, the Pforzheim Jewellery Museum opened to the public. Within a few years the collections had to be placed into storage to prevent possible war damage. In 1961 the new jewellery museum was finally opened, a far-sighted and

ambitious project reflecting the importance of Pforzheim as a major jewellery manufacturing centre.

The Pforzheim collection includes a comprehensive range of jewellery from all periods of Europe's history and from the varied cultures that have influenced European jewellery. The present exhibition at Goldsmiths' Hall, London (until 25 June) presents some 260 objects from the collection specially chosen to reflect its wide chronological and artistic extent. The pieces on display range from Greek and Etruscan goldwork to a mid-nineteenth bracelet by Wiése

A gold, silver, diamond, ruby, sapphire, pearl and enamel bracelet made by Jules Wiése and F.D. Foment-Meurice in Paris 1850-55. The silver nude female supports were cast from original sculptures by James Pradier. From the Treasures from The Pforzheim Collection Exhibition, Goldsmiths' Hall.



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and Foment-Meurice of Paris (shown here), from Renaissance jewellery to twentieth century works.

The tragic events of the 1930s and 40's greatly reduced the numbers of skilled workers in the region and destroyed two-thirds of Pforzheim itself. Post-war rebuilding and re-equipping re-established local jewellery production, but this was often on more industrial than craft-based lines. More recently, the recession has also hit the local jewellery industry, but the craft continues with some 30 000 people still involved in the industry, both in the factories and working in the still numerous craft workshops. Pforzheim is truly 'Gold-Stadt' with a long and proud tradition which makes it a suitable centre for a museum to preserve the art of jewellery from the whole of Europe and beyond.

Gem & Jewellery News

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ISSN: 0964-6736

EDITORIAL

London certainly is in a good position to lead the study of gemstones and jewellery and in this issue we highlight an initiative towards the compilation of a guide to gem and jewellery sources in public custody. Dealing with students for over twenty years, I have been surprised by the small number in every class who are familiar with the London collections; some of the ignorance can be put down to lack of initiative but many just do not know what is there. To some extent the same thing can be said for some provincial collections.

This brings up the topic of how education should be conducted. Without a constant exposure to the objects of study no student can gain much from textbooks, however well-illustrated they may be, and even live lectures miss something when absorption spectra, inclusions or even colour varieties cannot be examined at the same time. In fact any kind of teaching which does not lift the imagination and keep it for a while on a higher level of appreciation fails in the long run because, while students quickly forget dictated notes (how any teacher can drone on, as many do, completely baffles me!), they carry a visual memory much better.

Readers and especially students may not always realize that museums have far more in their collections than can conveniently be displayed and that it is always possible to visit 'behind the scenes' to see and handle specimens. Of course such a visit must be arranged in advance as curatorial staff have work to do (and there may not be many of them); it is also important to decide exactly what it is you want to see and what instruments you would like to be available. In the past such access was easier than it is today, but pressure from interested and informed visitors may serve to alert managements to a possible source of good publicity (which some institutions certainly need) and even income if a small charge were to be made.

If the proposed survey of resources encourages people to support their national or local collections it will have done an excellent job. It may even encourage the formation of new collections - even the largest have started with one specimen!

M.O'D.

AROUND THE TRADE

In this column we endeavour to keep you informed of business matters affecting dealers from a trading perspective. We welcome views and questions from all readers handling gemstones and jewellery on a commercial basis.

Treatments, Enhancements and Disclosures

Many people in the trade seem unaware of the precise nature of an enhanced or treated gemstone. Such stones undergo a process, other than normal cutting and polishing, to improve their appearance. The two main areas for improvement are (a) the colour and (b) the purity of the stone.

Colour can be changed by such processes as heat, irradiation, staining, bleaching, waxing, coating and, more recently, deep surface diffusion.

Clarity can be improved by basically two processes (1) removing an impurity in the stone and (2) filling in a fissure inside the stone. Thus lasering can remove a black mark in a diamond - but this leaves a hollow which is colourless and more difficult to see, thus improving the appearance of the diamond. The appearance of such a diamond can be further improved by filling in the gaps inside the stone with a substance that has a refractive index as near to that of diamond as possible.

Many emeralds contain fissures and traditionally these have been filled with oils, either colourless or green. Recently substances other than oil have been used - namely epoxy resins. These are less volatile than oil, have RIs similar

to that of emerald and can be hardened using agents to seal the filler inside the stone.

Stones such as agates can be stained to change or improve their colour. Beryls can be coated to improve the 'emerald green'. Corundum can be stained, and it has also been subject to a more recent process of deep diffusion. In this, a stone is coated with an appropriate metallic salt and heated to such a high temperature that the surface is open to diffusion of iron and titanium which cause the blueness. Such a process is more permanent than simple coating.

Recently enhanced diamonds have appeared on the market. These are stones in which the appearance has been improved by filling any fissures with a variety of colourless substances. Two known processes are the Yehudah and Koss methods. Such filled stones are marketed under various names, e.g. 'Genesis II'.

These processes are not fraudulent in themselves, but the diamond trade, through such bodies as WFDB, IDMA and CIBJO, have stipulated that such diamonds must have the treatment disclosed at all points of sale and advertising.

The disclosure of fissure filling is more problematic in the coloured stone trade; for example, simple colourless oiling of emeralds is an accepted trade practice and, according to CIBJO, need not be disclosed, but disclosure of epoxy filling has become debatable and we do not yet have a clear conclusion. The problems of disclosure have plagued the trade for many years, the fear being that disclosing a treatment could affect the sale of a stone or a piece of jewellery.

Through CIBJO, the trade has agreed that some treatments need not be disclosed, while those that must be disclosed can be done by simply prefixing the name of the stone with the word 'treated' (without the treatment itself being given). Thus, an emerald with fissures filled with a coloured oil has to be designated as a 'treated emerald'.

The ICA has adopted a system whereby the actual treatment is disclosed. This can be done in a coded way using letters and numbers to specify the type of treatment the stone has undergone.

The term 'enhanced' came to us from the USA as a more user-friendly word than 'treated'. Generally, consumer protection laws in the USA have made the

specification of disclosures more prevalent there than in Europe. But all the systems are open to abuse. An 'enhanced diamond' may actually sound more attractive to the unwary than an ordinary one, yet an enhanced diamond is inferior to an untreated diamond of similar appearance.

The trade has tried to produce some general rules which can be uniformly applied but this has, so far, met with no success. Thus according to CIBJO rules a sapphire which has had its colour changed by heating (permanent and non-reversible) can be sold simply as 'sapphire'. But then a zircon which has had its colour changed to blue through heating has to be sold as 'treated' because the blue can discolour over a

period. A purist would wish to sell all heated stones with a prefix 'heated', e.g. a 'heated sapphire' or at second best a 'treated sapphire'.

Another problem is whether the treatment can be easily identified. An epoxy-filled emerald of low quality would cost more to be tested than the value of the stone would justify. Most jewellers would not be able to spot this treatment, and even laboratories have difficulties in easily differentiating between an oil and an epoxy resin.

One solution is to go for total disclosure, the argument being that if we all did this then sales would not be affected. But this would be a Utopian solution; in

practical trade terms the person who does not disclose will have an advantage over the one that does at the point of sale. Disclosure to an uneducated public involves lengthy explanations and the complexities could stop a sale. How many people would buy an expensive emerald if they were simply told that the emerald has been 'repaired' with a resin or plastic? The problem of disclosure has to be solved but whatever solution is arrived at we all agree that both the jeweller and the general public have to be more aware of current practices.

H.L.

N.B. Final results of the survey on gemstone enhancement will be reported in the next issue of GJN.

EDUCATION

A new University of London Evening Course at Greville Street

The University's Centre for Extra-Mural Studies will run a new ten-evening course at the GAGTL Gem Tutorial Centre later this year, to be given by Ian Mercer, B.Sc., FGA, GAGTL's Director of Education.

This informal and practical course will focus on the origins and nature of precious stones and crystals.

Each Tuesday, from 28 September until 30 November, Ian, a University Extra-Mural geology lecturer, will introduce a different

aspect of these fascinating materials. The course will appeal to beginners as well as qualified gemmologists. It is aimed at those who enjoy delving into the connections between this planet, its crystals and its gems; those who, therefore, like playing with rocks, sand and pebbles, growing crystals, looking at colour, and peering at the interiors of gemstones and at the exteriors of kerb stones and bank fronts.

You can enrol at £50.00 for all ten evenings, 6.30 to 8.30 p.m. by applying direct to Alison Sutton at:

University of London
Centre for Extra-Mural Studies
26 Russell Square
London WC1B 5DQ

You may also call in during office hours, or ring Alison on 071-631 6654 to ask for an application form and further information, or to pay by credit card. Places are limited so you are advised to enrol soon. Please note that the course will be held at GAGTL (Saffron Hill entrance); nearest underground stations are Farringdon (also on Thameslink) and Chancery Lane.

Gem Tutorial Centre

GAGTL's own education and membership events are now a well-established and a regular part of life at Greville Street. In the past few weeks, the second floor Tutorial Centre has been used by people learning how beads and pearls are strung; how to grade diamonds; where the limits lie in identifying modern synthetic and treated gems; what to look for in natural, cultured and imitation pearls; and how to go about answering questions in the Preliminary exam. The Centre is also the GAGTL exam venue for Diploma practical gemmology and Gem Diamond Diploma exams. The Gem Diamond correspondence course students have now taken their practical exams with some students coming from as far away as Athens and Hong Kong. This summer, for the first time, all inner London gemmology practical exams will be held at Greville Street. Diploma evening classes have been very successful, and the Diploma two-day practicals - including a mock exam - are now under way.

Future events will include a day studying ornamental stone - including a 'Stone Walk' around Hatton Garden; Gems for Retailers; the DIY Laboratory; a Preliminary Practical Workshop; Organic Gem Materials; and another day of bead and pearl stringing.

Please contact Doug Garrod at GAGTL on 071-404 3334 (fax 071-404 8843) for further information, event requests or ideas; and bookings

Events

- 8 July A Day of Beads and Stringing** - for anyone who wishes to investigate the great variety of beads, natural or artificial, and the intricate methods for stringing beads and pearls.
Price £105.75 (price includes materials)
- 15 July Enquire Within: Ornamental Rocks** - a day looking at all aspects of ornamental rocks.
Will include a short walk around the Hatton Garden area discovering the materials used in and on various buildings and streets.
Price £105.75
- 22 July Enquire Within: Organic Gem Materials** - a day looking at all aspects of organic gem material, natural, treated and imitation.
Price £105.75
- 8-9 Sept Gems for Retailers** - two full days of practical experience with mounted stones. Investigate and test the stones you are likely to handle in the retail environment. Discuss suitable selling and talking points with gemmologists who have an extensive knowledge of the retail jewellery trade.
Price £164.50
- 15-16 Sept Two Days of Diamonds** for an insight into gem diamond origins, grading, simulants and treatments.
Price £223.25
- 22-23 Sept Synthetics & Enhancements Today** - Are you aware of the various treated and synthetic materials that are likely to be masquerading alongside the gemstones you are buying and selling? Whether you are valuing, repairing or dealing, can you afford to miss these two days of investigation?
Price £223.35
- 30 Sept DIY Laboratory** - spend a day finding out about the basic gem testing instruments. You will be looking at the principles by which these instruments work and the results you should obtain. You will also be constructing some instruments of your own.
Price £111.63 (includes materials)
- 12-14 Oct Preliminary Workshop** - a day of practical tuition for Preliminary students and anyone who needs a start with instruments, stones and crystals; student discount.
Price £44.65; GAGTL students £31.73

ALL PRICES INCLUDE VAT AT 17.5%

DISCOVERING BRITAIN'S GEMS

Gems and jewellery in public collections are a valuable source of information and inspiration, whatever our own particular field of gemmological interest. With the Royal Regalia at the Tower, and gems and jewellery of international renown in the great national collections of the Natural History Museum, British Museum and Victoria and Albert Museum, London gemmologists are among the most fortunate in the world. Excellent collections also exist elsewhere, but just how much do we know about the range and locations of gems on public display in Britain?

This article launches a survey of gems in Britain's public collections by GAGTL. In the first instance it is planned to build up an index of what gems can be seen, and in which collection. The term gem is taken in the broadest possible sense to include cut gems (set and unset), fine gem mineral specimens, hardstone carvings and inlay work (pietra dura) in small objects and in furniture. In this way it is hoped to provide useful information for all members, whether new Diploma students or seasoned enthusiasts, professionals or amateurs, and whatever their gemmological interests.

There are also occasions when much-loved displays are closed for maintenance or are completely re-designed. For example, it is probable that those at the Natural History Museum will be reduced considerably in the near future, when the Earth Gallery Gemstones Exhibition and Mineral Gallery

displays are merged and re-located. Do other good reference collections exist? This survey might root out some valuable alternatives.

We hope that the survey will be of particular benefit to members outside London. Places with significant collections might make excellent centres for meetings and for visits by GAGTL branches, Allied Teaching Centres or regional education tutorials. A fine collection also offers a focus point for assessing and increasing public interest in gems.

The task in hand is a large one - too much for one person if members expect reasonably rapid results! So this article is also an appeal for help from all members, nationwide, to discover and make the most of our public collections.

I'm sure that many of you are already very knowledgeable about your local museums and National Trust properties, and such knowledge will form an invaluable basis to build on. It is equally important to discover and publicise less well-known collections. In some respects this is the most exciting aspect of the survey - who knows what treasures lie unappreciated, and perhaps unrecognized, in Britain's public collections? If you would like more information or would like to help with this survey in any way you can think of, please contact me, Christine Woodward, c/o GAGTL, 27 Greville Street, London EC1N 8SU. I have been asked to organise and co-ordinate this survey so will be giving brief progress reports in future issues of *Gem and Jewellery News*.

C. M. Woodward

FINNISH GEMMOLOGICAL SOCIETY SEMINAR

In March, Eric Emms, Ana Castro and Riitta Spencer of the Gem Testing Laboratory travelled to the goldsmiths school in Lahti, north of Helsinki, to deliver the keynote lecture and practical workshop at the annual seminar of the Finnish Gemmological Society.

The theme of the lecture and workshop, organized by Ana, was emerald - the identification of natural, synthetic and treated stones. Society members had the opportunity to investigate samples from the Laboratory's collection and to consider the characteristics of the stones with the Laboratory staff. Riitta, born in Finland, provided invaluable help with translation into Finnish of some of

the trickier technical points.

At the Society's AGM, Eric gave a brief outline of GAGTL activities to the members, discussing in particular the DGA Diamond Diploma and concluded with the presentation of a gift to the Society through its President, Alf Larsson, FGA.

The relationship between GAGTL and Finnish gemmology goes back to 1935 when Herbert Tillander was awarded the coveted Tully Medal. Since then many Finns have studied and passed our Diploma in Gemmology in Finland, and the number of FGA's continues to grow.

Falling Standards

In the last two issues of *GJN* this column has traced the introduction of 18 carat gold in 1798 and then, in 1854, the introduction of the 15, 12 and 9 carat standards. The competition answers in the last issue pondered, semi-seriously, just why 15, 12 and 9 carats were chosen. Before we can look at a possible reason it might be worth looking at the nature of the carat itself.

In the mid-seventeenth century W. Lewis in his *Commercium Philosophico-Technicum* notes that 'The degree of fineness of gold, of the proportion of alloy it contains, is accounted by imaginary weights called carats'. However, as several of his contemporaries could have told him, the carat was not imaginary.

The term 'carat', in modern jewellery practice, can refer to both a weight unit (typically employed for precious stones) and gold purity. The former was the original use. The Greek word *keratia*, almost certainly deriving from a name of the carob plant which had seeds of regular weight, first occurs as a weight unit in the first century AD. It is defined at 1/1728 of a Roman pound. There was some use of the *keratia* as a gold weight during the second or early third centuries AD, but in theory more than practice since it was too small a unit for much day to day use. When, in the late third century, the solidus gold coin was first minted, the *keratia* was defined as 1/24th of it. Since the solidus was reckoned (not always correctly) to be pure gold, we have

here the origin of our carat purity standard for describing gold alloys - so many parts gold per 24.

Analyses of Roman and Byzantine goldwork seemingly show some groupings at about 92 per cent gold which might be an intentional 22 carat alloy. From Egypt in the sixth and seventh centuries AD there are tantalizing references to a *Goldsmiths' Standard* of 22 carats, but we cannot be certain whether a weight or purity standard was meant. The Medieval Islamic mints were certainly using the carat purity standard for gold by the early thirteenth century and soon after we find the same in Europe. An example can be seen in the early fourteenth century 'merchants handbook' by Pegolotti, of the Florentine banking house of the Bardi, with offices from London to Constantinople. He lists some 39 different gold coins then in circulation along with their purities in carats. On the basis of the coins discussed, Grierson has suggested that Pegolotti's list is actually based on a late thirteenth century source. Other late thirteenth century uses by mints can be found in Sicily and, perhaps, in France.

The old 'Touch of Paris' gold standard, current in France and England in the thirteenth century, was 4 parts gold to 1 part alloy. This is not a nice round number of carats (it is actually 19.2), which certainly suggests that the carat was not generally used to define gold alloys in Western Europe at this period. However, by the second half of the fifteenth century we find gold alloys generally defined in carat terms in

Northern Europe - such as the 20 carat minimum gold purity introduced in Scotland in 1457 and the 18 carat standard that was first introduced in England twenty years later.

18 carat is also 75 per cent pure, a nice round percentage, but this is probably fortuitous, the concept of percentages being rare in Europe before the mid-sixteenth century. At the time of the re-introduction of 18 carat in 1798, however, the convenience might have been noted. When the need to introduce lower standards came to a head in the mid-nineteenth century it seems possible that there might have been some advantage in deliberately using compositions that could be expressed in terms of both the traditional carat and as percentages. A few minutes with a pocket calculator shows that the only carat values between 6 carat and 24 carat that can be expressed as precise percentages are 9 carat (37.5 per cent) 12 carat (50 per cent) 15 carat (62.5 per cent) and 18 carat (75 per cent). All other whole number carat purities translate into percentages with recurring decimals. This does not seem to have been much of a problem elsewhere - 14 carat is 58.333 recurring per cent, for example - but, although I have no certain evidence, it seems more than fortuitous that the values chosen for use in Britain should be just those that are best expressed as both carats and percentages.

So far we have glossed over the 'alloy' that makes up the remaining part of the carat gold alloy. Traditionally silver or copper or both were used and

various documents from the eighteenth and early nineteenth centuries suggest that even if this limitation had no legal backing it was normal. For example, a goldsmith witness to the committee reporting to the House of Commons prior to the introduction of 18 carat gold standard in 1798 said that to the best of his knowledge 'gold for manufacture will not permit any alloy except copper, silver or a mixture of the two'. There were also practical reasons - many base metals when added to a high purity gold alloy can have a detrimental effect on hardness and malleability. Today all sorts of metals are alloyed with gold, not always with beneficial results, but this practice probably only became more common with the lowering of the gold standard in 1854. Such lower purity gold alloys are less detrimentally affected by the addition of certain other base metals. Zinc, for example, could

now be added to help keep the debased gold a good colour. Contemporary mentions are limited. For example, a correspondent to the *Chemical News* in 1860 notes, 'If I err not, silver, copper and zinc are all the alloys found in gold alloys'. However, a variety of other metals including manganese, nickel, iron and cadmium, began to be added to gold alloys, sometimes for specific practical or decorative purposes. Even higher carat alloys were affected - by the end of the nineteenth century *Chambers Encyclopedia* included an alloy of 75 per cent gold with 25 per cent iron in a list of fanciful alloys of gold used by jewellers.

In the next issue of *GJN* I will look at various issues surrounding the changes in gold standards - including the actual effects on the jewellery business.

J.M.O.

Fools' Gold

In the last issue of *GJN* this column briefly discussed some of the ways in which fakes of antique or earlier jewellery can be detected. Here I will talk a bit about materials.

The prime metals used over the last few thousand years for jewellery have been gold and silver. Gold tends not to be used in its pure state (there are some exceptions) and, certainly well into the nineteenth century, was primarily alloyed with silver and copper. Gold coinage was a frequent source of raw material for jewellers - a fact noted in documents from Roman to Victorian times - and to some extent this can help point to a

likely period of manufacture. For example, the British sovereign gold coin remained at 22 carat purity, but changed its actual composition over the years from gold + silver + copper to just gold + copper. If jewellery was made from these coins, either as they were or with added alloy to reduce them to 18 carat or lower, the ratios of the silver to copper can sometimes provide an indication of likely period of manufacture. This is not a panacea for our problems with fakes - there are too many imponderables - but this sort of analysis can be a useful part of a wider examination of the composition and construction of the object, particularly a composite

article. Gold fakes, of course, can stand out by containing small traces of metallic elements that can point to old or relatively new production. The best known indicator element of this type is cadmium which has been added to gold and silver alloys, and often solders, from the mid-nineteenth century onwards - rarely if ever before this.

The use of trace element analysis to help identify fakes of antique silver is familiar to most silver dealers and collectors, but it is less well known that modern technology now allows the removal and analysis of gold or silver samples smaller than the full stop at the end of this sentence. This is useful for large or composite silver objects where we can now easily test many parts of the same piece, even the solder alloys or the silver of the actual hallmarks. This type of analysis is being used more and more with jewellery. A first reaction might well be that surely silver jewellery is seldom worth bothering with, but remember even the most spectacular Georgian diamond-set brooch usually has silver settings on a gold backing. This silver can now be analyzed with no visible damage to the object. In a recent case a 'Georgian' diamond ring had a silver setting with trace element characteristics which allowed us to rule out with almost certainty a pre late-nineteenth century origin. In fact the ring was modern.

Of course, forgers can sometimes beat us by using suitable alloys, but at least analysis is one more approach. More and more we have to approach forgery identification by using a good combination of scientific methods to back up the

opinions based on stylistic criteria. A 'good eye' and a 10X lens are, sadly, not always enough.

J.M.O.

NEW SJH SECRETARY

I have served as Secretary to the Society of Jewellery Historians for the brief period since January 1992, but due to my impending move to Slovakia I will sadly be retiring in June. Susan Coelho, a keen and capable member of the Society, has been co-opted on the Committee pending her election at the next AGM. She has been elected by the Committee as the new Secretary.

I have greatly enjoyed my short term, and would like to thank all those members who have been so helpful to me in my attempt to follow in Judy Rudoe's footsteps. I wish Susan all the best and am certain that she will enjoy filling this post.

Lucilla Thomas-Everard
May 1993

BOOKS

Silver jewelry treasures by Nancy Schiffer is published by Schiffer Publishing Ltd, Atglen, Pennsylvania. In similar format to *Rhinestones* (noted below) it is largely photographs in colour accompanied by a short but readable text. Pieces are classified by type of design and at £16.95 the book is good value. ISBN 0 88740 4588.

Rhinestones by Nancy N. Schiffer is published by Schiffer

Publishing Co. of Atglen, Pennsylvania, 19310, USA. There are 156 pages and all the pictures are in colour. £16.95.

Life in amber by George O. Poinar, Jr, is published by Stanford University Press, Stanford, California; publication date is 1992. The price in the UK is around £40.00 and the ISBN is 0 8047 2001 0.

M.O'D.

OBITUARY

Reynold Higgins

We are very sad to have to announce that Reynold Higgins, formerly of the British Museum and the first President of the Society of Jewellery Historians, died on 18 April 1993 after a year of failing health and just a few weeks after being diagnosed as having cancer. Volume 5 of *Jewellery Studies*, published last year, was a *Festschrift* in Reynold's honour and contains a full description of his career and publications. The party held by the Society at the British Museum last year to celebrate Reynold's seventy fifth birthday and to present him with this special volume was the last trip he was able to make to London. Reynold's books and articles on jewellery and other classical art are models of their kind, and his wisdom, generosity and kindness will be much missed by family and colleagues alike.

EXHIBITIONS

Ancient Gold on Show

This spring has brought us two major 'selling' exhibitions of ancient goldwork, *Ancient Jewellery from the Near East and Egypt* at the Nefer Gallery, Zurich, and *Gold of the Mycenaeans* at the Michael Ward Gallery, New York.

The Nefer Gallery Exhibition includes a wide range of objects from neolithic beads some 8000 years old to magnificent Egyptian gold. To my mind pride of place must go to a wonderful, large pendant in the form of the Goddess Isis seated on a throne with her child, the young Horus, on her lap. The base bears the name of the Pharaoh Psametk I, which allows us to date the object to the seventh century BC. Isis and her son are an exquisite example of early lost-wax casting with perfect details despite minimal, if any, post-casting hand work. The figures are cast, and the throne is fabricated from sheet metal. Fine goldwork of this period is extremely rare from Egypt. The colour catalogue details and illustrates all 81 entries.

The Mycenaean gold in New York is, on the other hand, a smaller, but if anything, more amazing exhibition. Mycenaean gold is exceptionally rare on the market and this group of objects - probably representing a single tomb find dating to just before about 1400 BC - must surely be the most important single such group outside Greece. The exhibition includes four gold rings, a variety of gold necklets and clothing

ornaments, plus beads and seals. As is typical of this period the goldwork is fabricated from sheet gold, although in the case of the two main rings, this is of substantial thickness. Several of the objects still bear enamel - amongst the earliest examples of enamel from anywhere in the world - and granulation. The most spectacular ring is shown here; it bears the design of a two-horse chariot and driver worked in a combination of punching and engraving (the Mycenaean were also probably the first to use true



A magnificent Mycenaean gold ring, the oval bezel depicting a chariot drawn by two horses. Fifteenth century BC. Michael Ward Gallery, New York.

engraving on gold). The hard-back catalogue consists of a fully illustrated and detailed study of the jewellery with an introduction and the descriptions of the engraved material provided by Professor John Betts, a world authority of Mycenaean glyptics. The detailed study and analysis of the objects in this group by the Cambridge Centre for Precious Metal Research involved a wider comparative examination of the constructional details of Mycenaean goldwork in Oxford and Athens. One by-product of this is a reassessment of some older views. For example, microscopic studies would now support the growing body of stylistic opinion that the long doubted 'Ring of Nestor' in the Ashmolean Museum in Oxford

might be quite genuine. Needless to say, the Gallery intends to sell the gold as a group - it would be very sad to break it up.

J.M.O.

Dr Inciser Damm of the

Exhibition of Roman Jewellery in Cologne

Römisch-Germanisches Museum in Cologne is organizing a special exhibition on Roman jewellery entitled *Goldschmuck der römischen Frau*. The aim will be to show Roman jewellery in context, using the evidence of archaeology and of contemporary representations such as sculpture and Romano-Egyptian mummy-portraits which show personal ornament in use.

The exhibition will include loans from a number of museums in Germany, Belgium, Switzerland, France, Austria and Britain. It is scheduled to open on 17 June 1993.

Holburne Museum and Crafts

Exhibition of Engraved Gems at Bath

Study Centre, Great Pulteney Street, Bath.

During the exhibition *Holburne*

One Hundred, celebrating at the same time the centenary of the Museum's opening and the bicentenary of Sir William Holburne's birth, a selection from the Museum's so far unpublished collection of engraved gems will go on show for the first time. Although unprovenanced, the greater part of this collection bears all the hallmarks of having first been assembled in the second half of the eighteenth century, with some later additions. There are numerous small Roman sealstones of Imperial dates as well as an important group of sixteenth to eighteenth century gems, some of them variants of the most famous gems in Paris, Florence, London and St Petersburg, and including a series of beautiful large portrait intaglios, probably stemming from Prince Stanislas Poniatowski's celebrated (or infamous) Sale. The gems, of course, form only a small part of this exhibition of paintings, silver, porcelain and vertu from the Museum's rich holdings and charting its progress to the present day with the development of the Crafts Study Centre.

The exhibition will be open from 15 May - 18 October, Monday-Saturday 11.00am - 5.00pm, Sun 2.30pm - 6.00pm

GEMS

Red spinel from Tanzania turned up in a consignment of faceted Tanzanian garnets recently. The stone was a most attractive orangish-red, characteristic of spinel. Keller (*Gemstones of East Africa*, 1992, Geoscience Press, Phoenix, noted in our last issue) reports spinel from several ruby-producing areas near Morogoro.

The stone I examined contained quite spectacular groups of lath-like crystals. Tanzanian spinel in a variety of colours is reported from the Uмба River area as well as from Morogoro. The mineral *högbohmite* (a magnesium iron aluminium titanium oxide), is said to form inclusions in some Tanzanian red spinel.

The sodium fluoride villiaumite is reported in cut form. This is a very rare mineral and in some circumstances may be water-soluble, but some crystals are an attractive pink to deep red. A report in *Mineralogical record* shows a fine crystal group from Ilimaussaq, Greenland (the same geological area which produced tugtupite). Villiaumite has a hardness of 2-2.5. Other locations are the island of Los off the Guinea coast and Lovozero, Kola Peninsula, Russia. The Precambrian Shield area of Greenland has produced some attractive ruby crystals but they are not facetable quality.

Returning to the consignment of Tanzanian stones mentioned above, the bulk of the material was in the form of cabochon rubies, the remainder being garnets; four of these were typical hessonites but were labelled as 'padparadschah'; there were also some blue sapphire cabochons and two or three faceted blue sapphires. The sapphires were of good colour but the rubies were the worst I have ever seen; heavily included (some with matrix still adhering!) and of very poor colour. The valuation placed on the whole consignment was over US\$17 000, a horrific figure (mine would have been less than US\$300 at most). Readers must watch for loads of Tanzanian goods and never buy sight unseen. The same consignment also incurred a handling/shipping charge somewhere along the way (I saw the papers), so the cost of importing this low-grade material was so great that there could be no chance of a profit to say the least. Clearly there is a huge rip-off somewhere.

M.O'D.

LETTERS TO THE EDITORS

Dear Sirs

In the Editorial to the March 1993 edition of *GJN*, J.M.O. states that people may feel 'qualms about spending hundreds or thousands of pounds on some item of almost purely personal ornamentation' in the face of '... endless scenes of misery in Somalia ...'. J.M.O. also suggests 'more accent on knowledge, skill and art and less pandering to vanity, greed and one-upmanship ...'. Please consider the following arguments.

First, when a customer purchases jewellery, the money he or she pays does not disappear into oblivion. The chances are that much of it ends up in the hands of poor people in poor countries who have earned it and know that they have earned it, and can then do something to help themselves and their communities in the future. In the case of food aid, however necessary, there is probably no long-term advantage to the recipients.

Secondly, throughout history it has been the production of luxuries which has permitted the redistribution of wealth from rich to poor. Basic commodities often have low profit margins per worker and require considerable ownership of resources for efficient production to be possible. However, the production of luxuries, with a high profit margin based on the 'vanity, greed and one-upmanship' of the rich and very little else, provides the main channel of wealth from rich to poor. The market for luxuries

enables poorer people (and countries) to use their 'knowledge, skill and art' to make a living.

The product is relatively harmless to the buyer and quite useless to the producer; the process of production is environmentally friendly relative to the economic value of production; and the more expensive the item of jewellery the better it fits all of the foregoing criteria.

Thirdly, the jewellery trade should not feel bad about 'pandering to vanity, greed and one-upmanship'. These are all natural human emotions which are better expressed by the purchase of expensive jewellery than suppressed only to emerge later in more harmful form.

Vanity?

The customer is usually seeking a form of expression, either the expression of a gift or the expression of a personal commitment to a form of adornment. A piece of jewellery makes someone happy and keeps people in work, especially if it is a really expensive piece (how many people in undeveloped countries make a living from cubic zirconia?). Price and customer happiness may be inseparable from ego but should not be confused with selfishness. Paying a high price for luxury is not the same as over-charging a poor man for his food or shelter. If you can afford to do the former because you have done the latter, then feel

guilty about the latter, not the former.

Greed?

If a customer pays £5000 for a diamond wedding ring, this hardly seems greedy when he or she would be lucky to resell it for a third of that price. If the argument is that the customer should have spent the money on buying food for Somalia, then one must consider from whom that food would be bought and what they will do with the £5000. The Red Cross leaflet might be a great way of raising some funds in the short term, but it does not point to a long term solution, nor should it be taken as a moral warning about buying or keeping jewellery. Reducing one's purchases of luxury items hurts the undeveloped world and does not create more food for the starving. If one really wanted to help the undeveloped world, one would not reduce but increase the purchase of luxury items, especially jewellery, in order to increase the transfer of wealth from rich to poor.

One-upmanship?

Would it not be better for people to make greater use of jewellery to have their 'one-upmanship' rather than to get it in other traditional ways like war, violence, fraud, disloyalty and so forth?

The above is in no way intended as a criticism of J.M.O.'s well-meaning reflection on the moral status of the jewellery industry. But I hope that some in the trade will take up the matter, to counter any misguided notion

that the public should feel guilty about buying or keeping luxury items, and to prove that the purchase of expensive jewellery is a noble practice which is beneficial to the world economy as a whole and to underdeveloped countries in particular.

Yours etc.,

William Tucker

Douglas, Isle of Man

22 March 1993

This letter, edited from a longer one but still, I hope, retaining the essence of Mr Tucker's views is just the kind of response that I hoped to elicit - and I hope you all read it and ponder over the issues. One can, of course, argue about the point at which providing work for the poor becomes exploitation and nobody would expect that buying a tenthousand pound bracelet could possibly provide those in some third world country with as much long-term comfort as the same money spent on a de-salination plant. I also wouldn't class all mining and refining processes as environmentally friendly. Still, luxury products do provide jobs, help in the redistribution of wealth and, generally, do not kill. How we get such arguments across to the public is a different matter. I still hold that advertisements stressing vanity, greed and one-upmanship - although indeed traditional human motivations - raise just the sort of issues that we need to be able to counter. Mr Tucker's views can be used in a straight-forward way to sell bead jewellery and the like in Oxfam and other charity shops, but I doubt whether a photo of the smiling face of a third-world gold miner will help sell an 18 carat gold necklet. The luxury jewellery trade as a whole badly needs a well thought-out and sophisticated PR plan.

J.M.O.

Treated Gems

Dear Sirs

The results of the survey on 'Treated Gems' conducted in areas of London and Cambridge reinforce my own experience with regard to public awareness of gem treatments.

For some years my work at the Geological Museum included gemstone identification and lecturing on gemmological subjects to a wide range of adult and student groups. I found then, and still find, a lack of public awareness of treatments and of modern synthetics and simulants. It was frequently necessary to tell our visitors that their gems were not what they seemed, and thereby to develop the art of the gentle let-down. Those of us dealing with gem identifications found that many people, although disappointed, were fascinated by clear explanations of the test results and appreciated a look at the evidence as revealed by a variety of instruments. For awkwardly set or small gems, photographs of inclusions or other identifying features proved equally useful. The fortunate possessors of genuine or particularly fine gemstones also appreciated some information about their gems, as well as an opportunity to see the proof of identity or quality for themselves.

I am not suggesting that busy retailers should set up miniature laboratories or exhibitions, simply that the jewellery-buying public are happy to be informed about the gems they buy or own. It is possible that greater public knowledge of gems, combined

with confidence in helpful, well-informed retailers, would result in increased demand and sales.

With this thought in mind, I would like to draw your attention to a catalogue of products offered by a well-known gift and 'objets d'art' marketer. Several items are described as being set with *faux pearls* or *faux rubies* and in one instance a *faux emerald*. It is impossible to determine from the photographs alone whether the *faux pearls* are cultured pearls or glass imitations, although one necklace is described as containing pearlescent beads - coated glass perhaps? Similarly, I would assume that the *faux rubies* and emerald are synthetic. The carat weight of the *faux emerald* plus surrounding cubic zirconias is also included, presumably to further suggest value and desirability. Is such information normally given for anything other than a natural gemstone? As used here, I find it misleading and rather disturbing, but perhaps I am being unduly suspicious.

The term *faux* is an irritatingly coy, if prettier, way of saying false or artificial. Over the last year or so I have noticed its use in some up-market women's magazines and in the weekend leisure section of the *Financial Times*. It could be argued that the readers of these publications are good Europeans or remember their school French, but to me it seems an unnecessary clouding of terminology that the public could well do without.

I decided to telephone the customer helpline for clarification and was told that the emerald is 'man-made' and therefore 'artificial' (their own words). The

term man-made is also used to describe a sapphire in a ring and I am puzzled by this inconsistency in terms within a single catalogue. There was no hint of evasion in the customer helpline - my query was answered clearly and courteously. But the niggle remains, why use a word which will probably be unfamiliar to a proportion (admittedly small) of the recipients of this catalogue, and why use two different descriptions of a synthetic stone in the same catalogue?

Yours sincerely,
Christine Woodward
Chiswick, London

Infilling of Emerald

Dear Sirs

Following 'A letter to the trade' by Mr A.J. Clark I would like to explain our laboratory standpoint regarding fracture fillings in emeralds. People should not so much concentrate on the term 'Opticon' since this is only one specific product in the line of epoxy resin used today, and other artificial resins will follow, such as those which polymerize in ultraviolet light and do not need a hardener.

I will try to explain which kind of ideas led me and others to a general acceptance of what is called 'oiled emeralds' without an individual disclosure of every stone treated in this particular way. We are for a general disclosure of this widely used enhancement process, performed for many years with varying

substances. The trade-accepted 'oiled' emeralds are also treated stones, and the fact that Canada balsam, cedar wood 'oil' and other natural resins were taken for oil are the sins of the past. These substances are also hard to dissolve when they once are in a fracture. They possess a very similar expansion coefficient to epoxy resins. Refilling after repolishing is possible. When stones break apart on the cutting wheel, this may be due to the presence of large fractures which were not seen because of effective treatment. So the cutter might have taken away emerald portions necessary to hold the stone together. My suggestion is to inspect fracture treated emerald under a strong UV light source. Most filler substances will show up white and the extent of treatment becomes visible.

Although I have been working in a gemmological laboratory for more than twelve years, I have never seen an emerald larger than 1 carat which did not possess fine fissures or fractures, and all fractures contained foreign substances.

But how can you identify (and differentiate) the substances present in all the fractures? Who can do this identification job, and where are the police forces to punish those who do not disclose? Where are the gemmology classes and who are the gemmologists trained in the subject of how to identify fracture fillings? Where is the equipment for the identification job? And who is paying all these expenses?

Who has ever kept watch over an emerald crystal, from the first

moment it dropped out of the parent rock, until it was set as a faceted gemstone in a piece of jewellery?

At every stage of the chain from the mine to the jeweller, the emeralds are immersed in different liquids, for cleaning, for judging and for enhancing. Can you imagine what a cocktail of oils, resins or epoxies accumulates in the openings of the stones? Even a good chemist is not in a position to identify such small quantities of complex composition. And if so, what should the filling be called? Should it relate to the 'Opticon' at the mine, plus the oil from the diamond saw, the lap oil from the cutting wheel, the polishing compound, the last oiling performed after cutting and the very last oiling (with epoxy, canada balsam, cedar wood oil or what so ever) before the stone is set. I feel that the term 'oiling' now has a new meaning. It no longer means only treatment of fissures with oil, but also with comparable colourless fracture filler material.

Please face reality! All cut emeralds are treated stones. It might be that you do not know or wish not to know, but if you use a microscope and look with trained eyes into emeralds you will find the fractures filled with something every time. And it is really not important what makes the filling, as long as the stones are not repaired and glued together. It is hypocritical to speak of the good old days and use the word 'oil'. The so-called 'oil' was in many cases not oil but natural resin (canada balsam, cedar wood 'oil'). And they only used those natural resins, because they had nothing

better.

What one might wish for ethical or business reasons is one thing. What is feasible and can be put through under the conditions of a normal business day can be quite different. Therefore the SSEF Swiss Gemmological Institute has decided to accept organic fillings in gemstones (including epoxy-resins) as the normal case. A comment on the back of the test report says: 'For enhancement of gemstones, fissures are often filled with colourless substances'. In this way the consumer is informed of this common trade practice. If in an uncommon case an emerald should be free of fissure and filling, we would honour the exceptional case by the phrase 'no indication of fracture filling' on the front of the test report.

In his 'Letter to the Trade' Mr Clark wants the Opticon and other similar substances in treated emeralds banned or disclosed. The traditional fillers are also foreign substances in the emeralds. But what emeralds are you going to sell if not treated ones? A general disclosure of this common trade practice, submitted in a gentle campaign to the consumers, could inform them of the modern developments in enhancement of gemstones. Then there is no risk of being forced by law to 'unveil unfair practices'.

Yours etc.,
Dr H.A. Hänni, FGA
SSEF Swiss Gemmological
Institute, Löwenstrasse 17,
CH-8002 Zürich, Switzerland.
1 May 1993

Competition

Dear Sirs

Thank you so much for the copy of Dr Hoover's book *Topaz* [see 'Answer to the Christmas competition, *GJN*, 2, 2, 3]: a delightful surprise, especially for one who normally 'never wins anything'!

I shall particularly enjoy reading further about a stone which has always interested me, in a book which I would not have felt justified in buying as pure self-indulgence!

Yours etc.,

Maxwell Hollyhock
Gosport, Hants.
24 February 1993

Jemeter Digital 90

Dear Sirs

May I offer some comments based on my use of the Jemeter Digital 90. The instrument's worst points are:- the gems to be tested are to be meticulously clean, only stones with very flat table facets can be tested; cabochons are out of the question since the instrument works on the principle of reflection rather than refraction. It would be very useful if cabochon opaque stones could be tested but unfortunately they are seldom cut with a flat enough surface. For unmounted stones which can be easily cleaned and are not impaired by settings, and which have a perfectly flat surface, then this instrument is for you.

The advantages of the instrument are:- the advantage of being digital; the ability to obtain readings above 1.81 (the limits of a refractometer); and not having to use oily smelly liquids which may have to be warmed because the sulphur has become crystallized. Working via a battery also makes this instrument more mobile. Perhaps in years to come there will be improvements and the problems eliminated. Until then I think I shall stick to the refractometer.

Yours etc.,

June Ive

Waltham Abbey, Essex.
21 August 1992

THE TRUE SPIRIT OF SCIENCE

T. Gill writing on 'Various Processes employed in Jewellery' in the *Technical Repository* in 1822 says, 'It is a very curious circumstance, that the best workmen in this branch of jewellery have at this day no other menstroom for giving the last high finish in colour to their beautiful articles, than the employment of the compound salts of alum, nitre [potassium nitrate] and common salt'. Such recipes, which date back to Roman times, can produce a mineral acid that actually dissolves gold itself. Indeed, Gill succeeded in 'readily dissolving leaf-gold' with just such a mixture. He then adds that he was able to take up the gold from this solution 'by the employment of French Brandy'.

COMPETITION

Rime or Reason

To avoid complaints that these competitions all need calculators or digitally programmed brain cells, here is something for those with a more literary bent. We all know those colour-supplement type adverts for jewels - all 'special collectors edition' or 'handcrafted investment opportunity' and so on. Ever wondered who writes all that stuff? Well, here is your chance. Imagine that you have to provide a paragraph of blurb for just such an advert to sell an albatross pendant. I leave the details, material and so on to you. Just convince the editorial panel how such a pendant is either the collectors' opportunity of a life time, the ideal lover's gift or why hanging an albatross around your neck is this year's hottest fashion accessory. We will look for humorous and succinct contributions (maximum 150 words). The best, in our opinion, will be printed in the next *Gem and Jewellery News*. If anyone out there really is marketing such an ornament, our apologies; if this competition spurs anyone to do so, I demand royalties!

J.M.O.

Answers to the Competition in the last issue

Last issue's competition revolved around an ancient Egyptian goldbeater who folded over his thin (0.001 mm) gold foil a total of 25 times, that is, each time doubling its thickness. He then noticed the position of the sun over the pile of gold and wandered off to eat. Was this his lunch or supper? Correct answers came in from all over from Washington DC to Glasgow (yes - G.M.A. McClhery again!). Folding over foil just one thousandth of a millimetre thick twenty five times will result in a pile some 33 metres high! (Hence the literary licence disclaimer in the competition!) Remarkable but true. Clearly, if he saw the sun over his pile it must have been high in the sky and thus lunch time.

Jasper Dopstick again used the practical approach but, without access to gold, mutilated his pack

of turkey-size cooking foil. He managed just nine folds before it all seized up in a wodge. As to whether it was then lunch or supper is a sore point. Without the foil the Easter turkey dried up into something like a - well, I suppose an Egyptian mummy would be the most suitable parallel. Another correspondent, Penny Waite, well known for her success in getting Camden Council to install gold-recycling bins at strategic points around the borough, argued that, with all that sand blowing about, nobody would beat gold outdoors in Egypt. Thus if our goldbeater saw sunlight overhead it must have been reflected off a ceiling and thus low in the sky and shining in through a window. Hence it must have been supper time. Beat that - as they say.

J.M.O.

What's on

Gemmological Association and Gem Testing Laboratory of Great Britain

ANNUAL TRADE LUNCHEON

This year the Annual Trade Luncheon of GAGTL will be held on Friday 2 July 1993 at The Whitbread Brewery, next to the Barbican, London, EC1. All members are invited and tickets for this prestigious event are just £35.00 per person inclusive of VAT and wine! For reservations please contact:

Miss L. Shreeves, GAGTL, 27 Greville Street,
London EC1N 8SU. Tel: 071-404 3334
Fax: 071-404 8843

London

Throughout 1993 there will be a programme of meetings on the second floor at 27 Greville Street. Refreshments will be available from 6.00 p.m. and we plan to start the lectures at 6.30 p.m. The charge for a member will be £3.50 and, as places are limited to 55, entry will be by ticket only, obtainable from GAGTL. The programme is as follows:

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| 20 September | 'Photographing minerals and gems'. Frank Greenaway |
| 6 October | 'Diamonds in the Laboratory'. Eric C. Emms |
| 8 November | Thai evening. Amanda Good and Martin Issacharoff |
| 22 November | 'CIBJO matters - the gem trade in Europe'. Harry Levy |
| 7 December | 'Pearls in the Laboratory'. Ana I. Castro and Stephen Kennedy |

North West Branch

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| 16 June | Members and friends evening. bring and buy: crystals, books and instruments, and exchange of views. |
| 15 September | Jonathan Condrup from Sotheby's, London |
| 20 October | 'Minerals in the Bronze Age'. Tony Hammond |
| 17 November | Annual General Meeting |

Meetings will be held at Church House, Hanover Street, Liverpool 1. Further details from Joe Azzopardi on 0270-628251.

GAGTL ANNUAL CONFERENCE

The theme of the Annual Conference this year is 'Inclusions' and we are pleased to announce that Dr E. Giibelin will deliver the keynote lecture. A full programme will include surveys of diamond, ruby and sapphire inclusions and their significance in the gem trade, and there will be practical demonstrations. The Conference will take place on Sunday 24 October 1993 at the Great Western Royal Hotel next to Paddington Station, London. This will be followed on Monday 25 October by a GAGTL Open Day.

For further details and a booking form please contact:
Miss Linda Shreeves at GAGTL on 071-404 3334
Fax: 071-404 8843

Society of Jewellery Historians

Unless otherwise noted, 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 only open SJH members and their guests. A nominal charge is made for wine to comply with our charity status.

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| Monday
28 June | Charles Truman, FSA, will give a lecture on the Gilbert Collection of gold boxes; he has recently catalogued the collection in Los Angeles County Museum of Art. |
| Monday
28 September | Later Bronze Age Goldwork from Ireland. Mary Cahill, FSA. |
| Saturday
30 October | A Day Conference on Nineteenth Century Jewellery.
Details and application form enclosed. |
| Monday
1 November | Jewellery of the Late Renaissance and Baroque. Hugh Tait, FSA. |
| Monday
6 December | Coloured Gold Jewellery in the 18th and 19th Centuries. Judy Rudoë, FSA and Sue La Niece. |